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ACCEPTANCE OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN THE RECRUITMENT PROCESS OF SLOVAK ENTERPRISES

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Abstract. Artificial intelligence is playing an increasingly important role in human resource management, with recruitment being the area where its benefits are most visible. The purpose of this article is to examine how Slovak enterprises adopt AI technologies in their recruitment processes. The analysis is based on a survey of 434 responses, covering companies of different sizes, industries, and regional presence. The findings show that a higher level of knowledge and perceived benefits significantly increase the likelihood of AI implementation, while reported barriers did not prove to be statistically significant. AI adoption therefore appears as a complex process that cannot be explained only by technological advantages but is also shaped by organizational capacities, the level of digital literacy, and the impact of the regulatory environment. To address this complexity, the combination of the Technology Acceptance Model (TAM), which emphasizes perceived benefits and ease of use, and the Technology-Organization-Environment (TOE) framework, which adds a perspective on organizational and environmental factors, proves to be particularly appropriate.

Keywords: artificial intelligence (AI); recruitment; human resource management; technology acceptance; Technology Acceptance Model (TAM); Technology-Organization-Environment (TOE)

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JEL Classifications: M12, M15, O33

1. Introduction

In recent years, business practice has witnessed a dynamic development of digital technologies that fundamentally reshape how organizations operate. Among the most commonly applied solutions are big data processing, cloud computing (Alenezi, 2021), the Internet of Things (IoT) (Horak et al., 2022), blockchain (Kimani et al., 2020), and various forms of advanced data analytics (Mohammed et al., 2025; Gimmelberg et al., 2025). These technologies enable companies to process information more effectively, optimize decision-making, and respond more flexibly to changing market conditions. A similar trend can be observed in the public sector, where such solutions form the basis of smart city concepts aimed at more efficient management of transport, energy, and citizen engagement (Koman et al., 2024). At the same time, methods of modeling complex systems and analyzing graph structures are being applied (Dudáš, Lauko, 2025), highlighting the growing importance of linking both business practice and the public sector with modern computational approaches. An essential aspect of this development is the deepening collaboration between humans and machines (Beňo, Ölvecký, 2024; Mugunzva, Manchidi, 2024), which allows the computational power of technology to be combined with human experience, intuition, and value-based judgment. Among all technologies, artificial

intelligence has become the most prominent, establishing itself as a key driver of digital transformation and permeating diverse areas of management.

Current scientific research points to a profound transformation of human resource management under the influence of digitalization (Zavyalova et al., 2022; Ma, 2023; Štaffenová et al., 2025). Whereas earlier studies describe the use of primarily administrative systems (Ball, 2001; Kovach et al., 2002; Lengnick-Hall, Moritz, 2003), more recent works emphasize the rise of digital platforms enriched with elements of artificial intelligence (Bar-Gil et al., 2024; Komarova et al. 2024; Khushk et al., 2025). In the field of recruitment, this shift is reflected in the use of automated CV screening, chatbots, and video interview analysis (Albassam, 2023). Researchers generally agree that these tools deliver greater speed and consistency (Yanamala, 2021; Ahmadi et al., 2024), but they also raise questions related to transparency, data protection, and the fairness of algorithmic decision-making (Charlwood, Guenole, 2022; Rao, Zhao, 2025). At the same time, studies reflect regulatory measures of the European Union, which classify AI systems used in recruitment as high-risk (Gruchała et al., 2025). In this context, the need to examine not only the technological benefits but also the degree of organizational acceptance of such solutions is emphasized (Calluso, Devetag, 2024; Islam et al., 2024). This is particularly relevant in Slovakia, where the topic remains relatively new and underexplored.

The use of artificial intelligence in recruitment processes has already been examined relatively extensively in the international literature, whether from the perspective of efficiency, ethics, or technological readiness (Albassam, 2023; Pechová et al., 2024; Kim et al., 2025). Anyway, in the Slovak context it remains a relatively new and underexplored research problem. Systematic empirical data are lacking on the extent to which companies employ these technologies, the factors influencing their acceptance, and the barriers preventing their broader implementation. The absence of such knowledge hampers not only academic debate but also the practical decision-making of managers, who face the pressures of digitalization while having to account for the legislative, financial, and cultural specificities of the Slovak environment.

The aim of this study is to examine how Slovak enterprises adopt artificial intelligence technologies in the recruitment process. Particular attention is given to identifying the factors that influence their acceptance by organizations and HR professionals, as well as the barriers that slow down or prevent the implementation of these solutions. The ambition is to provide a comprehensive picture of the current situation in Slovakia and to create a basis for recommendations that can contribute to the responsible and effective integration of AI into human resource management practice.

The contribution of this study lies in providing empirical data and conceptual insights into the acceptance of artificial intelligence in the recruitment process within the Slovak context. The results may expand the existing academic debate while also offering practical recommendations for managers and HR professionals. The knowledge gained can support not only more effective adoption of AI in HR processes but also its ethical and transparent implementation in line with the European regulatory framework.

2. Literature Review

Recruitment is one of the key HR processes that significantly influences the performance and competitiveness of enterprises. Traditional forms of selection, based on manual screening of résumés or face-to-face interviews, are time- and resource-intensive (McKnight et al., 2015). Over the past decade, this area has undergone rapid digitalization, with one of the most prominent trends being the use of artificial intelligence (Li et al., 2021).

Previous research (Upadhyay, Khandelwal, 2018; Black, van Esch, 2020) has shown that AI can significantly accelerate and streamline various stages of recruitment. Algorithms enable the automated screening of large volumes of résumés, chatbots can answer common candidate questions or conduct initial screenings, and image and voice recognition systems are used to analyze video interviews (Thakur et al., 2023). This reduces the administrative burden on HR professionals while increasing the consistency of decision-making. On the other hand, the scientific literature also highlights the risks associated with the use of AI. These include algorithmic bias (Alsubaie, Aleisa, 2025), insufficient transparency in decision-making (Yanamala, 2023) and concerns over data protection (Kassir et al., 2023). Several empirical studies point to cases where algorithmic systems have

reproduced existing discriminatory patterns or favored certain groups of applicants based on hidden data correlations (Andrews, Bucher, 2022; Chen, 2023; Morin, 2024).

In response to the risks associated with the use of AI systems, the European Commission introduced the AI Act, which classifies artificial intelligence systems used in recruitment as high-risk applications (Sunyaev et al., 2025). This means that employers and HR technology providers will be required to meet strict standards concerning data quality, model transparency, human oversight of decision-making, and mechanisms for detecting and eliminating discrimination. Although these regulatory requirements create a framework for trustworthy and safe use of AI, they do not in themselves guarantee its adoption in practice. Evidence from prior research (Laurim et al., 2021; Hosain et al., 2025; Ilham, 2025) shows that technology acceptance depends not only on technical features and legal compliance but also on user attitudes, whether from employers, HR professionals, or job candidates. These aspects, which lie at the heart of the debate on trustworthy AI, emerge as key factors shaping the level of acceptance. In other words, regulatory frameworks may set minimum standards, but only when these principles are perceived as trustworthy by all stakeholders will the technologies achieve broader adoption. For this reason, it is essential to examine not only the technical benefits of such systems but also the extent to which they are accepted by companies and candidates.

Current research in this field is increasingly focused on ethical considerations, candidate trust, and the legitimacy of AI-assisted decisions. As prior studies demonstrate (van Esch et al., 2019), candidates trust in the fairness of the recruitment process directly affects their willingness to apply for a position and to continue engaging with the organization. At the same time, companies perceive AI as a tool that provides speed and efficiency but requires robust rules for responsible use. This suggests that artificial intelligence in recruitment is not merely a technological innovation but represents a fundamental paradigm shift in human resource management. It holds the potential to enhance the quality of decision-making while simultaneously raising questions of ethics, fairness, and legal accountability.

Specifics of the Slovak Context

Empirical evidence signals a significant shift in the use of artificial intelligence in human resources on a global scale. According to a study by The Hackett Group, as many as 66% of HR departments already employ generative AI to streamline human capital management, with 52% of organizations using it to draft job descriptions and 39% to screen résumés (Hackett Group, 2025). Similarly, a survey by CultureAmp shows that in January 2024, approximately 42% of HR teams were actively using AI across various activities (Boogaard, 2025). These figures confirm that in advanced economies such as the United States, Western Europe, and Asia, AI adoption in HR is progressing rapidly, with a strong emphasis on sophisticated tools based on machine learning and predictive analytics.

Research from Central and Eastern Europe, however, points to a different attitude toward AI adoption in enterprises. A report by the AI Chamber, based on a survey of more than 3 200 small and medium-sized enterprises, revealed that although more than 75% of firms claim to use AI, in practice only about 25% apply it systematically and on a larger scale (Stefanova, 2025). This gap between declared use and actual implementation reflects a more conservative approach to adopting new technologies. Moreover, lower trust in algorithmic decision-making and a preference for personal interaction from both candidates and employers increase the need to combine modern technologies with traditional practices and to maintain a strong human element in the recruitment process. It becomes evident that the acceptance of AI in recruitment is not determined solely by the availability of technologies but also by cultural expectations, levels of trust, and the broader context in which these solutions are introduced.

Technology Acceptance Models

Research on technology acceptance focuses on how individuals adopt and use new digital tools and systems. In the field of information and communication technologies, this line of inquiry is particularly concerned with the factors that influence the level of use, ranging from perceived usefulness and ease of use to social and organizational determinants. The most widely known framework is the Technology Acceptance Model (TAM), which emphasizes the role of perceived usefulness and perceived ease of use (Marangunić, Granić, 2015). Later extensions (TAM2, TAM3, and UTAUT) incorporated additional aspects such as social influence, individual

experience, and contextual specificities. These models provide a solid theoretical foundation for examining the acceptance of artificial intelligence in recruitment processes, as they explain why HR professionals, managers, or candidates may choose to adopt or reject a given technology. An overview of the main Technology Acceptance Models and their key variables is presented in Table 1.

Table 1. Overview of Technology Acceptance Models

Model	Key Variables / Factors	Characteristics
TAM	- Perceived Usefulness - Perceived Ease of Use	Basic model explaining that technology adoption depends on its usefulness and ease of use.
TAM2	- Social influences (subjective norms) - Cognitive processes (image, job relevance, output quality, result demonstrability)	Extension of TAM that incorporates social factors and perceptions of output quality.
TAM3	- Perceptions related to ease of use (computer self-efficacy, perceptions of external control, anxiety, enjoyment)	Model further developing the dimension of perceived ease of use.
UTAUT	- Performance Expectancy - Effort Expectancy - Social Influence - Facilitating Conditions - Moderators: age, gender, experience, voluntariness of use	Integrated model combining several approaches to technology acceptance.
UTAUT2	- UTAUT factors + new variables: hedonic motivation, price value, habit	Extended model that also takes into account the consumer context and behavior over time.

Source: the authors processed according to literature (Lala, 2014; Rondan-Cataluña et al., 2015; Lai, 2017)

In the field of recruitment, these acceptance models have proven useful for examining how HR professionals perceive the benefits and user-friendliness of AI systems, how their attitudes are shaped by organizational culture and social norms, and how such attitudes differ by demographics and experience (Kashi, Zheng, 2013; Calluso, Devetag, 2024; Almeida et al., 2025). Practical experience, however, shows that the identified determinants alone are not sufficient. In the context of AI, there is a growing emphasis on the need to include new variables such as trust, fairness, ethical aspects, and data protection (Figueroa-Armijos et al., 2023; Rane et al., 2024). These factors reflect the specific nature of artificial intelligence, where issues of fairness, accountability, and transparent data handling play a crucial role. At the same time, it has become evident that acceptance models primarily focus on the individual level, namely the attitudes of particular users (Yang, Yoo, 2004). They pay less attention to the broader context, which strongly influences the actual implementation of technologies in practice. This includes factors such as the level of national digitalization, regulatory frameworks (GDPR, AI Act), infrastructure availability, and the digital literacy of the workforce.

3. Methodology

The aim of the research is to examine how Slovak enterprises adopt artificial intelligence technologies in the recruitment process. Based on theoretical foundations and existing knowledge, the following research hypotheses were formulated:

- **H₁:** A higher level of knowledge about AI among employees and managers positively influences the acceptance and implementation of AI in recruitment processes.
- **H₂:** A lack of expertise and concerns about data protection represent significant barriers that reduce the level of acceptance of AI in recruitment processes.
- **H₃:** Greater perceived benefits of artificial intelligence in recruitment processes are associated with a higher willingness of enterprises to implement these technologies.

These hypotheses provide the basis for empirical testing of how organizations in Slovakia respond to technological innovations in recruitment and which factors play a decisive role in their adoption.

Research Design

The study was conducted as a quantitative survey using an online questionnaire distributed between September 1, 2024, and April 30, 2025. The aim was to obtain empirical data on the acceptance of artificial intelligence in recruitment processes within Slovak enterprises. For this reason, the target population consisted of HR managers, recruiters, and professionals responsible for recruitment in Slovak companies. The total population comprised 148 297 entities (according to business registers and databases in Slovakia as of September 1, 2024). To determine the minimum required sample size, a standard statistical calculation was applied. With:

- population size **N = 148 297**,
- confidence level of **95 % (Z = 1.96)**,
- margin of error **5 % (e = 0.05)**,
- and response proportion **p = 0.5** (most conservative estimate),

The minimum sample size was calculated at **384 respondents**.

Participants and Data Collection

All participants provided informed consent prior to participating in the study. Participation was entirely voluntary and anonymous. The respondents were informed about the purpose of the research, the approximate time needed to complete the questionnaire, and their right to withdraw at any time without any consequences. No personal identifiers or sensitive data were collected.

- Number of respondents contacted: **6 913**
- Number of completed questionnaires: **445**
- Response rate: **6.44 %**
- Final analyzed sample: **434 respondents** (after excluding incomplete responses)

This number exceeded the threshold required for statistical representativeness, thereby increasing the reliability of the results.

Ethical Approval

This study was conducted in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments. Ethical approval was not required for this study, as it involved an anonymous online survey with no collection of personal or sensitive data. Respondents participated voluntarily and could withdraw at any time.

4. Results

The results of the questionnaire survey are based on 434 responses, which form the core of the analyzed sample. The participating companies varied in terms of size, industry, and regional distribution, providing a comprehensive view of the issue under study. In terms of company size, medium-sized (49%) and large enterprises (29%) had the strongest representation, together accounting for roughly three quarters of the sample. Small enterprises were represented to a lesser extent (22%). With respect to industry focus, manufacturing companies dominated (36%), followed by businesses in administrative services (8%), construction (7.6%), and transport and storage (7%). Other sectors, including trade, agriculture, and education, were also represented, although with lower intensity (below 5%). The regional distribution of respondents was relatively balanced. The largest number of responses came from the Žilina region (164) and the Banská Bystrica region (163). The Bratislava region also accounted for a significant share (140), while the lowest representation was recorded in the Prešov region (115). Overall differences between the regions, however, were not substantial, and the sample thus provides relatively even coverage of Slovakia's regions. The sample included both domestically operating companies and those with international reach. Nearly half of the respondents (46.8%) operate in foreign markets or are part of international groups, which makes it possible to observe the adoption of artificial intelligence not only in a national context but also in organizations connected to the international environment.

Respondents assessed their knowledge of artificial intelligence on a scale from 0 (no knowledge) to 10 (expert level). The results (Figure 1) showed that the overall level of knowledge was rather low to medium. The average rating was 4.29 and the median was 4, suggesting that most respondents did not consider themselves highly knowledgeable in this area. The most frequently chosen score was 5, corresponding to a medium level of knowledge. As many as 16 respondents (3.7%) indicated a score of 0, declaring a complete lack of knowledge

about AI. By contrast, only one respondent rated themselves at the maximum score of 10, while a score of 9 was not reported at all.

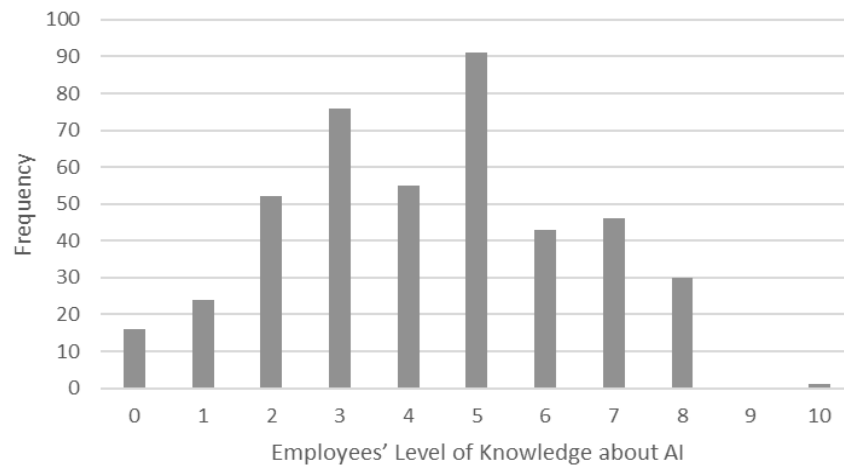


Figure 1. Distribution of Employees' Knowledge Levels about Artificial Intelligence

An interesting finding is that the declared level of knowledge varied slightly according to company size. In larger enterprises, the level of knowledge was higher (average 4.61), while in smaller firms lower ratings were more common (average 3.45). This result suggests that access to training opportunities and exposure to modern technologies may be more pronounced in larger organizations.

Verification of Hypothesis H₁

Hypothesis H₁ assumed that a *higher level of knowledge about artificial intelligence among employees and managers positively influences the acceptance and implementation of AI in recruitment processes*. Respondents were divided into three categories according to their declared level of knowledge (low, medium, high), and their responses regarding AI implementation were analyzed in three categories (already implementing, planning to implement, not planning to implement). Figure 2 presents the distribution of companies according to their level of AI knowledge and implementation status, illustrating that higher knowledge levels are generally associated with greater readiness to adopt AI.

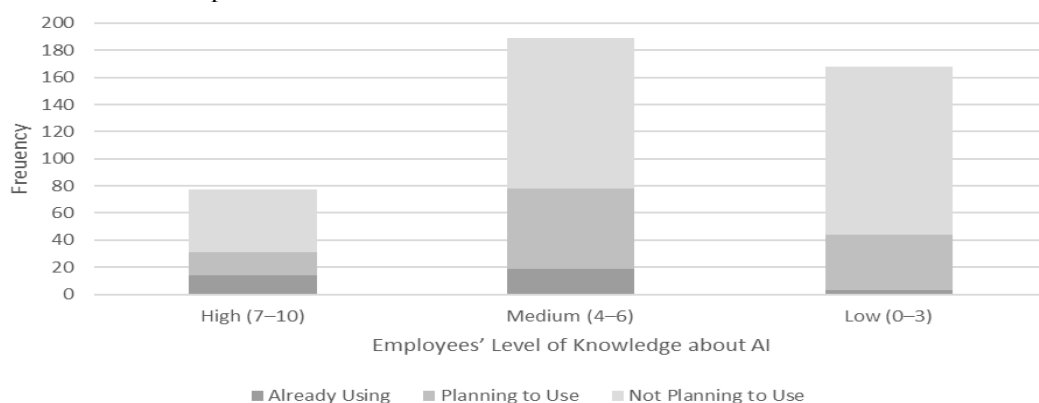


Figure 2. Companies' Attitudes toward the Use of AI in Recruitment Processes

The results of the chi-square test of independence showed a statistically significant relationship between the level of knowledge and AI implementation ($\chi^2 = 24.20$; $df = 4$; $p < 0.001$). Companies with a low level of knowledge predominantly declared that they do not plan to use AI (73.8%), while only 1.8% had already implemented it. In the medium knowledge group, the share of those planning implementation increased (31.2%), as did the share of those already implementing (10.1%). The most pronounced difference was observed in the high knowledge group, where although the majority of companies still reported no plans to implement AI (59.7%), the proportion of those already implementing rose to 18.2%.

These results **confirm the validity of Hypothesis H₁**, namely that a higher level of knowledge significantly increases the likelihood of acceptance and implementation of artificial intelligence in recruitment processes. The findings also indicate that the development of knowledge and competencies in AI represents a key factor supporting its broader adoption in practice.

Verification of Hypothesis H₂

Hypothesis H₂ assumed that *a lack of expertise and concerns about data protection represent significant barriers that reduce the level of acceptance of AI in recruitment processes*. To test this hypothesis, a linear regression analysis was applied, with AI acceptance/implementation (binary coded) as the dependent variable and the declared barriers (concerns about data protection and lack of expertise) as the independent variables. The results of this analysis are presented in Figure 3, which summarizes the regression coefficients, standard errors, and significance levels for the tested variables.

SUMMARY OUTPUT

Regression Statistics								
Multiple R	0,060318071							
R Square	0,00363827							
Adjusted R Square	-0,000985219							
Standard Error	0,478546225							
Observations	434							

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	0,360415041	0,180207521	0,786910105	0,455902244
Residual	431	98,70179694	0,229006489		
Total	433	99,06221198			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0,329309855	0,035153428	9,367787818	4,1773E-19	0,260216379	0,398403332	0,260216379	0,398403332
privacy_concerns	0,061275206	0,050846311	1,205106228	0,22882355	-0,03866237	0,161212782	-0,03866237	0,161212782
lack_of_experts	0,010625437	0,046171678	0,230128879	0,818100808	-0,080124227	0,1013751	-0,080124227	0,1013751

Figure 3. Results of Linear Regression Analysis on the Impact of Privacy Concerns and Lack of Experts on AI Adoption

The results showed that the model explained only a minimal share of the variability in AI acceptance ($R^2 = 0.0036$; 0.36 %). The test of statistical significance for the model as a whole confirmed that its explanatory power was insufficient ($F = 0.79$; $p = 0.456$). Neither concerns about data protection ($\beta = 0.061$; $p = 0.229$) nor lack of expertise ($\beta = 0.011$; $p = 0.818$) had a statistically significant effect on the acceptance of artificial intelligence in recruitment processes.

Based on these results, **Hypothesis H₂ was not confirmed**. The findings suggest that although these factors are often cited in the academic literature as barriers to AI adoption, their direct impact on implementation decisions was not empirically validated in the Slovak context. Interestingly, the coefficient estimates were even slightly positive, which would suggest the opposite trend, namely that companies declaring these barriers were more likely to implement or plan to implement AI. However, given the high p-values, this represents only a random effect without statistical significance. This outcome highlights the need to examine other determinants of adoption, particularly organizational and environmental conditions, which may have a more decisive influence on companies' decisions.

Verification of Hypothesis H₃

Hypothesis H₃ assumed that greater perceived benefits of artificial intelligence in recruitment processes are associated with a higher willingness of companies to implement these technologies. In this study, willingness to implement was operationalized indirectly, based on company categorization according to their attitude toward the use of AI. Companies that reported no plans for implementation were classified as having low willingness, while those that planned implementation or were already using AI were classified as having demonstrated or declared willingness. Perceived benefits were measured through a benefits index that included assessments of factors such as time and cost savings, faster search and filtering of applicants, and better alignment of candidates with job positions. To test the relationship between perceived benefits and willingness to implement AI, a binary logistic regression was applied. The results of this analysis are presented in Figure 4, which summarizes the logistic regression output including coefficients, significance levels, and model fit indicators.

Model Summary						
Step	-2 Log likelihood	Cox & Snell R Square		Nagelkerke R Square		
1	536,73	,06		,08		

Classification Table				
Observed		Predicted		Percentage Correct
		using 0	using 1	
Step 1	using 0	266	15	94,7%
	1	122	31	20,3%
Overall Percentage				68,4%

Variables in the Equation						
		B	S.E.	Wald	df	Sig.
Step 1	index_benefit	,57	,12	24,00	1	,000
	Constant	-2,44	,40	37,92	1	,000
						Exp(B)
						1,78
						,09

Figure 4. Impact of Perceived Benefits on AI Adoption

The results showed that the benefits index is a statistically significant predictor of willingness to implement ($B = 0.57$; $Wald = 24.00$; $p < 0.001$). The value $Exp(B) = 1.78$ indicates that with each one-point increase in the perceived benefits score, the probability of AI implementation increases by approximately 78%.

The model reached a Nagelkerke $R^2 = 0.08$, indicating that perceived benefits explain approximately 8% of the variability in company decision-making. The overall classification accuracy was 68.4%, with the model being more precise in identifying companies not planning to implement AI (94.7% correct) than those willing to implement (20.3% correct).

Based on these results, **Hypothesis H₃ was confirmed**. Higher perceived benefits of artificial intelligence are associated with a greater willingness of companies to implement these technologies. At the same time, the findings show that technological benefits explain only a small portion of the decision-making process. This insight underscores the need to understand the acceptance of artificial intelligence in recruitment as a complex phenomenon, influenced not only by perceived benefits but also by organizational and environmental factors, as reflected for example in the TOE framework.

5. Discussion

The research results were compared with three other empirical studies that also focus on the use of artificial intelligence in recruitment processes. Specifically, the comparison included the work of (Horodyski, 2023), the American survey AI in Hiring 2025 (InsightGlobal, 2025), and the global study conducted by (Boston Consulting Group, 2025). This comparative perspective makes it possible to place the Slovak findings within a broader international and practical context and to identify both common patterns and differences in AI adoption.

The first comparison can be made with the study by (Horodyski, 2023), which focused on the perception of artificial intelligence in recruitment processes from the perspective of job candidates. Both studies confirm that AI is generally perceived positively and is primarily associated with benefits such as time savings and greater process efficiency. In the Slovak context, this effect was reflected in the confirmation of perceived benefits as a factor increasing the likelihood of implementation, while Horodyski's respondents mainly valued faster responses and the ease of using AI tools.

Differences emerge in the perception of barriers. Slovak companies declared concerns about data protection and lack of expertise, but their statistical impact on adoption decisions was not confirmed. By contrast, Horodyski identified the main drawbacks as the absence of "human touch," lower accuracy, and technological immaturity. Ethical and legal aspects were also mentioned in his study, but they were not decisive factors. This difference suggests that companies are more likely to reflect regulatory and formal discourse, while candidates tend to evaluate the technology primarily based on its practical limitations.

Another area of divergence lies in the importance of knowledge and competencies. The Slovak study confirmed that a higher level of knowledge among managers and employees increases the likelihood of AI implementation. Although Horodyski did not explicitly address this issue, his results indicate that digital literacy and the factor of candidate knowledge and experience significantly shape the way AI is evaluated.

Both studies therefore converge in identifying perceived benefits as a key factor in AI acceptance, but diverge in their assessment of barriers. At the same time, both reveal the existence of certain missing factors that influence the acceptance of AI.

A comparison of the Slovak survey with the American study *AI in Hiring 2025* (InsightGlobal, 2025) reveals fundamental differences in the level of adoption of artificial intelligence in recruitment processes. While in Slovakia the use of AI is still in a phase of gradual development and company decisions depend on their size, industry, and technological readiness, in the United States AI is already an established part of practice, with as many as 99% of hiring managers reporting that they actively use these tools. Both surveys, however, confirm that the main driver of implementation is the perceived benefits. Slovak companies that recognize these benefits show greater willingness to adopt AI, while in the US 98% of managers reported improved efficiency and 74% highlighted AI's contribution to assessing candidate–job fit.

Differences emerge in the area of barriers. In Slovakia, discussions focus mainly on regulation, transparency, and ethics, while concerns about data protection or lack of expertise did not prove to be decisive factors. At the same time, there remains a preference for traditional methods, signaling the need to maintain personal contact and human judgment. The American study confirms this aspect: 93% of hiring managers stressed that high-quality selection is not possible without the human factor, even though AI significantly accelerates processes.

An interesting difference is found in the perception of AI on the candidate side. In the US, more than half of managers indicated that they are uncomfortable with candidates using AI to prepare résumés or cover letters, as they view this as inauthentic. This aspect was not captured in the Slovak research but opens an important discussion about the acceptability of AI use from the candidates' perspective.

The results of the two studies therefore complement each other. In both cases, the significant benefits of AI for recruitment efficiency and quality come to the forefront, but the perceived barriers differ. Slovak companies emphasize regulatory and ethical issues, while American managers focus on balancing technological efficiency with the preservation of human involvement.

A comparison of the Slovak survey with the global study by (Boston Consulting Group, 2025) highlights both common trends and notable differences in the adoption of artificial intelligence in recruitment processes. In the Slovak context, AI implementation is still in its early stages and depends strongly on company size and the level of technological expertise. Larger organizations with greater competence in digital technologies are more willing to experiment, whereas smaller companies often continue to rely on traditional practices. Adoption decisions are mainly associated with perceived benefits such as time savings, more efficient candidate screening, and better alignment between applicants and job requirements. The global BCG survey confirms these benefits but on a much broader scale. As many as 70% of organizations experimenting with AI reported testing it in HR, most commonly in talent acquisition. According to the results, 92% of companies already perceive tangible benefits, and more than 10% have recorded productivity gains exceeding 30%. The most widespread applications include content creation (job ads, assessments), administrative tasks (interview scheduling), and candidate–job matching.

Differences between the studies are most evident in the area of barriers. Slovak companies emphasize regulation, transparency, and ethical aspects, while concerns about data protection or lack of expertise were not confirmed as decisive factors. Globally, however, the dominant issue is the candidate experience. More than half of respondents stated they would decline a job offer after a negative recruitment experience. BCG also highlights the importance of monitoring a rapidly evolving regulatory environment, from the European AI Act to privacy legislation in the United States.

A common thread across both studies is the emphasis on the human factor. While Slovak companies express confidence in traditional methods and personal contact, global data emphasize the shift of recruiters away from routine administrative tasks toward relationship building and strategic planning. In both contexts, it is clear that successful AI implementation in recruitment is not merely a matter of technology but of integrating it in ways that preserve the human dimension while enhancing the candidate experience.

A comparison of the Slovak results with the three international studies shows that artificial intelligence in recruitment processes is primarily attributed practical value, such as time savings, greater efficiency, and more accurate candidate matching. All the analyzed surveys converge on this point. The differences, however, emerge in the perception of barriers: Slovak companies emphasize regulation and ethics, American managers stress the indispensability of the human factor, and global data highlight the quality of the candidate experience as a decisive element of success.

These differences suggest that the acceptance of AI cannot be understood solely through the lens of technological benefits. A combination of organizational capacities, user experience, and external regulatory frameworks also comes into play. This makes it appropriate to connect the perspective of the Technology Acceptance Model (TAM), which explains the importance of perceived benefits and ease of use, with the Technology–Organization–Environment (TOE) framework, which incorporates organizational and environmental conditions. Such an integration allows the research to move beyond individual attitudes toward a macro-level perspective that better explains under what conditions the implementation of AI in recruitment processes becomes realistic and sustainable.

In the Slovak and Central European context, this combined approach is particularly valuable, as AI adoption is strongly influenced not only by the personal attitudes of users but also by labor market specificities, the regulatory framework, and the overall level of digitalization.

Conclusions

The research conducted in Slovakia revealed that companies' willingness to implement artificial intelligence in recruitment processes is closely tied to how they perceive its benefits. Organizations that recognize time savings, more efficient candidate search, and better candidate–job matching demonstrate a significantly higher readiness for adoption. Knowledge and digital competencies of managers and employees also play an important role, as higher levels of expertise directly support the acceptance of AI in practice. By contrast, frequently cited barriers such as lack of expertise or data protection concerns did not prove to be decisive factors in the Slovak context.

These findings emphasize that AI adoption cannot be reduced merely to technological benefits. It is a multidimensional process in which technological aspects intersect with organizational capacities, the level of digital literacy, and the ability to respond to regulatory and societal demands. To capture this complexity, combining the Technology Acceptance Model (TAM), which explains the role of perceived benefits and ease of use, with the Technology–Organization–Environment (TOE) framework, which adds organizational and environmental perspectives, proves particularly useful. This integrated approach makes it possible to better understand the dynamics of AI implementation under different conditions and to explain cross-contextual differences more effectively.

The main limitations of this research lie in its focus exclusively on companies and recruitment professionals. While this provides a representative picture of organizational decision-making in the Slovak context, it does not capture the experiences and attitudes of job candidates, which strongly influence the success of AI implementation in practice. The geographically limited scope also does not account for the specificities of other countries or sectors. Furthermore, not all hypothesized barriers were confirmed statistically, suggesting that additional, yet unobserved variables also play a role in decision-making.

Future research should therefore broaden its attention to organizational factors such as corporate culture, leadership style, and financial capacity, while also integrating the candidate perspective, which emerges as highly relevant in international studies. Another essential dimension for further investigation is the systematic

monitoring of the impacts of evolving regulatory frameworks, particularly the European AI Act, which emphasizes transparent and responsible use of AI in HR.

On a practical level, the findings suggest that AI can be a powerful tool for enhancing the efficiency and quality of recruitment processes. However, its successful implementation goes beyond technical solutions. It requires a prepared organizational environment, systematic development of digital competencies, and the preservation of the human dimension, which remains an irreplaceable part of the hiring process.

References

- Ahmadi, M. A. et al. 2024. Transforming Human Resources Recruitment: The Impact of Artificial Intelligence (AI) on Organizational Attractiveness and Applicant Intent. *Benefit: Jurnal Manajemen dan Bisnis*, 9, 102-117. <https://doi.org/10.23917/benefit.v9i1.6298>
- Albassam, W. A. 2023. The Power of Artificial Intelligence in Recruitment: An Analytical Review of Current AI-Based Recruitment Strategies. *International Journal of Professional Business Review*, 8(4). <https://doi.org/10.26668/businessreview/2023.v8i6.2089>
- Alenezi, M. 2021. Safeguarding Cloud Computing Infrastructure: A Security Analysis. *CSSE*, 37, 159-167. <https://doi.org/10.32604/csse.2021.015282>
- Almeida, F. et al. 2025. Understanding Recruiters' Acceptance of Artificial Intelligence: Insights from the Technology Acceptance Model. *Applied Sciences*, 15, 746. <https://doi.org/10.3390/app15020746>
- Alsubaie, N., & Aleisa, N. 2025. Mitigating Bias in AI Model Using eXplainable AI in Terms of Hiring Process in the Industry. *IEEE Access*, 13, 147218-147241. <https://doi.org/10.1109/ACCESS.2025.3599947>
- Andrews, L., & Bucher, H. 2022. Automating Discrimination: AI Hiring Practices and Gender Inequality. *Cardozo L. Rev.*, 44, 145. <https://cardozolawreview.com/automating-discrimination-ai-hiring-practices-and-gender-inequality/>
- Ball, K. S. 2001. The use of human resource information systems: a survey. *Personnel Review*, 30, 677-693. <https://doi.org/10.1108/EUM0000000005979>
- Bar-Gil, O. et al. 2024. AI for the people? Embedding AI ethics in HR and people analytics projects. *Technology in Society*, 77, 102527. <https://doi.org/10.1016/j.techsoc.2024.102527>
- Beňo, M., & Ölvecký, M. 2024. Measuring the performance of techniques for dynamic 2D animation in web browsers. *Journal of Applied Mathematics, Statistics and Informatics*, 20, 77-110. <https://doi.org/10.2478/jamsi-2024-0009>
- Black, J. S., & van Esch, P. 2020. AI-enabled recruiting: What is it and how should a manager use it? *Business Horizons*, 63, 215-226. <https://doi.org/10.1016/j.bushor.2019.12.001>
- Boogaard, K. 2025. How to navigate the adoption of AI in HR (without losing the human touch) Culture Amp. <https://www.cultureamp.com/blog/adoption-ai-in-hr>
- Boston Consulting Group 2025. How AI Is Changing Recruitment BCG Global. <https://www.bcg.com/publications/2025/ai-changing-recruitment>
- Calluso, C., & Devetag, M.G. 2024. The impact of technology acceptance and personality traits on the willingness to use AI-assisted hiring practices. *International Journal of Organizational Analysis*, 33, 1368-1385. <https://doi.org/10.1108/IJOA-06-2024-4562>
- Charlwood, A., & Guenole, N. 2022. Can HR adapt to the paradoxes of artificial intelligence? *Human Resource Management Journal*, 32, 729-742. <https://doi.org/10.1111/1748-8583.12433>
- Chen, Z. 2023. Ethics and discrimination in artificial intelligence-enabled recruitment practices. *Humanit Soc Sci Commun*, 10, 1-12. <https://doi.org/10.1057/s41599-023-02079-x>
- Dudáš, A., & Lauko, J. 2025. Distance-based correlation analysis for graph databases. *Journal of Applied Mathematics, Statistics and Informatics*, 21, 77-93. <https://doi.org/10.2478/jamsi-2025-0005>
- Figuroa-Armijos, M. et al. 2023. Ethical Perceptions of AI in Hiring and Organizational Trust: The Role of Performance Expectancy and Social Influence. *J Bus Ethics*, 186, 179-197. <https://doi.org/10.1007/s10551-022-05166-2>
- Gimmelberg, D., Belinskiy, A., Głowacka, M., Korotkii, S., Artamonov, V., & Ludviga, I. 2025. Market moves predictions using Retrieval-Augmented Generation (RAG) analysis of capital market expert opinions in social media. *Entrepreneurship and Sustainability Issues*, 13(1), 175-188. <https://doi.org/10.9770/w9365778559>

- Gruchala, P. (Shemy) et al. 2025. Harmonising risk assessments for high-risk AI systems under the GDPR and the AI Act. *Journal of Data Protection & Privacy*, 7, 359-371. <https://doi.org/10.69554/ULBO5448>
- Hackett Group 2025. NEWS RELEASE - The Hackett Group: HR Leaders Rapidly Adopting Gen AI to Advance Human Capital Objectives. The Hackett Group®. <https://www.thehackettgroup.com/the-hackett-group-hr-leaders-rapidly-adopting-gen-ai-to-advance-human-capital-objectives/>
- Horak, T. et al. 2022. Data Integration from Heterogeneous Control Levels for the Purposes of Analysis within Industry 4.0 Concept. *Sensors*, 22, 9860. <https://doi.org/10.3390/s22249860>
- Horodyski, P. 2023. Applicants' perception of artificial intelligence in the recruitment process. *Computers in Human Behavior Reports*, 11, 100303. <https://doi.org/10.1016/j.chbr.2023.100303>
- Hosain, M.S. et al. 2025. The use of Artificial Intelligence (AI) in the hiring process: Job applicants' perceptions of procedural justice. *Computers in Human Behavior Reports*, 19, 100713. <https://doi.org/10.1016/j.chbr.2025.100713>
- Ilham, R. 2025. Examining the Effect of Algorithmic Hiring, Perceived Fairness, and HR Tech Literacy on Recruitment Acceptance. *International Journal of Business, Law, and Education*, 6, 834-843. <https://doi.org/10.56442/ijble.v6i1.1106>
- InsightGlobal 2025. AI in Hiring 2025 <https://get.workable.com/ai-in-hiring-survey>
- Islam, M. et al. 2024. Using artificial intelligence for hiring talents in a moderated mechanism. *Futur Bus J.* 10(13) <https://doi.org/10.1186/s43093-024-00303-x>
- Kashi, K., & Zheng, C. 2013. Extending Technology Acceptance Model to the E-recruitment Context in Iran. *International Journal of Selection and Assessment*, 21, 121-129. <https://doi.org/10.1111/ijsa.12022>
- Kassir, S. et al. 2023. AI for hiring in context: a perspective on overcoming the unique challenges of employment research to mitigate disparate impact. *AI Ethics*, 3, 845-868. <https://doi.org/10.1007/s43681-022-00208-x>
- Khushk, A. et al. 2025. AI-driven HR transformation in Chinese automotive industry: strategies and implications. *Business Process Management Journal*. <https://doi.org/10.1108/BPMJ-11-2023-0915>
- Kim, J. et al. 2025. Collaborative intelligence achieved from AI-enabled recruitment: a case study of POSCO in South Korea. *Asia Pacific Business Review*, 31, 180-199. <https://doi.org/10.1080/13602381.2024.2329099>
- Kimani, D. et al. 2020. Blockchain, business and the fourth industrial revolution: Whence, whither, wherefore and how? *Technological Forecasting and Social Change*, 161, 120254. <https://doi.org/10.1016/j.techfore.2020.120254>
- Koman, G. et al. 2024. Public Transport Infrastructure with Electromobility Elements at the Smart City Level to Support Sustainability. *Sustainability*, 16, 1091. <https://doi.org/10.3390/su16031091>
- Komarova, V., Kudiņš, J., Sannikova, A., Čižo, E., Ruža, O., Kokarēviča, A., & Zeibote, Z. 2024. Using artificial intelligence (AI) for local territorial development: data-based machine diagnostics of Latvian municipalities. *Entrepreneurship and Sustainability Issues*, 12(2), 443-459. <https://doi.org/10.9770/y3784695648>
- Kovach, K. A. et al. 2002. Administrative and Strategic Advantages of HRIS. *Employment Relations Today*, 29, 43-48. <https://doi.org/10.1002/ert.10039>
- Lai, P. C. 2017. The literature review of technology adoption models and theories for the novelty technology. *JISTEM J. Inf. Syst. Technol. Manag.*, 14, 21-38. <https://doi.org/10.4301/S1807-17752017000100002>
- Lala, G. 2014. The Emergence and Development of the Technology Acceptance Model (TAM). *Marketing From Information to Decision* 149–160. <https://www.scribd.com/document/895294033/The-Emergence-and-Development-of-the-Technology-Acceptance-Model-TAM>
- Laurim, V. et al. 2021. Computer, Whom Should I Hire? – Acceptance Criteria for Artificial Intelligence in the Recruitment Process. Presented at the Hawaii International Conference on System Sciences. <https://doi.org/10.24251/HICSS.2021.668>
- Lengnick-Hall, M.L., & Moritz, S. 2003. The impact of e-HR on the human resource management function. *J Labor Res.*, 24, 365-379. <https://doi.org/10.1007/s12122-003-1001-6>
- Li, L. et al. 2021. Algorithmic Hiring in Practice: Recruiter and HR Professional's Perspectives on AI Use in Hiring. Presented at the AIES 2021 - Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society, pp. 166–176 ISBN: 978-1-4503-8473-5. <https://doi.org/10.1145/3461702.3462531>

- Ma, W. 2023. Exploring the transformation effects of digitalization on traditional human resources management. *PJMS*, 28, 182-202. <https://doi.org/10.17512/pjms.2023.28.2.11>
- Marangunić, N., & Granić, A. 2015. Technology acceptance model: a literature review from 1986 to 2013. *Univ Access Inf Soc Vol.* 14, 81-95. <https://doi.org/10.1007/s10209-014-0348-1>
- McKnight, M. et al. 2015. Organizational Hiring Preferences: Comparison of Traditional and Non-traditional Hiring and Recruitment Practices. *International Journal of Human Resource Studies*, 5, 52. <https://doi.org/10.5296/ijhrs.v5i2.7529>
- Mohammed, A., Goitia, D., Ahmad, S. A., & Ramlal, C. 2025. Revealing resilience: AI anomaly detection driven design considerations for Cyber Physical Systems supporting critical infrastructures in Small Island Developing States. *Insights into Regional Development*, 7(3), 148-169. <https://doi.org/10.70132/p6489444663>
- Morin, S. L. 2024. AI Discrimination in Hiring, in: Innovations, Securities, and Case Studies Across Healthcare, Business, and Technology. IGI Global Scientific Publishing., pp. 64-74. <https://doi.org/10.4018/979-8-3693-1906-2.ch004>
- Mugunzva, F. I., & Manchidi, N. H. 2024. Re-envisioning the artificial intelligence-entrepreneurship nexus: a pioneering synthesis and future pathways. *Insights into Regional Development*, 6(3), 71-84. <https://doi.org/10.70132/k5546584395>
- Pechová, J., Volfová, H., & Jírová, A. 2024. From interaction to integration: leveraging AI in enhancing team communication and task efficiency. *Entrepreneurship and Sustainability Issues*, 11(4), 276-292. [https://doi.org/10.9770/jesi.2024.11.4\(17\)](https://doi.org/10.9770/jesi.2024.11.4(17))
- Rane, N. et al. 2024. Acceptance of artificial intelligence: key factors, challenges, and implementation strategies. *Journal of Applied Artificial Intelligence*, 5, 50-70. <https://doi.org/10.48185/jaai.v5i2.1017>
- Rao, S., & Zhao, T. 2025. Ethical AI in HR: A Case Study of Tech Hiring. *Journal of Computer Information Systems*, 0, 1-18. <https://doi.org/10.1080/08874417.2024.2446954>
- Rondan-Cataluña, F. J. et al. 2015. A comparison of the different versions of popular technology acceptance models: A non-linear perspective. *Kybernetes*, 44, 788-805. <https://doi.org/10.1108/K-09-2014-0184>
- Štaffenová, N. et al. 2025. Using of human capital management in small andrr medium-sized enterprises in context of Industry 4.0. *PLOS ONE*, 20, e0320568. <https://doi.org/10.1371/journal.pone.0320568>
- Stefanova, I. 2025. Using AI ≠ Using It Well: What Research of 3,200 Regional SMEs Revealed. TheRecursive.com. <https://therecursive.com/ai-chamber-report-cee-ai-adoption-smes/>
- Sunyaev, A. et al. 2025. High-Risk Artificial Intelligence. *Bus Inf Syst Eng*. <https://doi.org/10.1007/s12599-025-00942-6>
- Thakur, A. et al. 2023. Use of Artificial Intelligence (AI) in Recruitment and Selection. Presented at the International Conference on Applications of Machine Intelligence and Data Analytics (ICAMIDA 2022), Atlantis Press., pp. 632-640. https://doi.org/10.2991/978-94-6463-136-4_54
- Upadhyay, A. K., & Khandelwal, K. 2018. Applying artificial intelligence: implications for recruitment. *Strategic HR Review*, 17, 255-258. <https://doi.org/10.1108/SHR-07-2018-0051>
- van Esch, P. et al. 2019. Marketing AI recruitment: The next phase in job application and selection. *Computers in Human Behavior*, 90, 215-222. <https://doi.org/10.1016/j.chb.2018.09.009>
- Yanamala, K. K. R. 2023. Transparency, Privacy, and Accountability in AI-Enhanced HR Processes. *Journal of Advanced Computing Systems*, 3, 10-18. <https://doi.org/10.69987/JACS.2023.30302>
- Yanamala, K. K. R. 2021. Integration of AI with Traditional Recruitment Methods. *Journal of Advanced Computing Systems*, 1, 1-7. <https://doi.org/10.69987/JACS.2021.10101>
- Yang, H., & Yoo, Y. 2004. It's all about attitude: revisiting the technology acceptance model. *Decision Support Systems*, 38, 19-31. [https://doi.org/10.1016/S0167-9236\(03\)00062-9](https://doi.org/10.1016/S0167-9236(03)00062-9)
- Zavvalova, E. et al. 2022. The Digitalization of Human Resource Management: Present and Future. *Foresight and STI Governance*, 16, 42-51. <https://doi.org/10.17323/2500-2597.2022.2.42.51>

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