DOI:10.17951/h.2025.59.2.7-22

A N N A L E S
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA
LUBLIN – POLONIA

VOL. LIX, 2 SECTIO H 2025

JACEK ADAMEK

jacek.adamek@ue.wroc.pl
Wroclaw University of Economics and Business. Faculty of Economics and Finance
ul. Komandorska 118/120, 53-345 Wrocław, Poland
ORCID ID: https://orcid.org/0000-0003-2427-5052

MAŁGORZATA SOLARZ

malgorzata.solarz@ue.wroc.pl
Wroclaw University of Economics and Business. Faculty of Economics and Finance
ul. Komandorska 118/120, 53-345 Wrocław, Poland
ORCID ID: https://orcid.org/0000-0001-9538-0541

Readiness to Use Artificial Intelligence Technology among HR and Payroll Staff in Poland

Keywords: technology readiness; artificial intelligence; HR and payroll services; innovation; technology acceptance

JEL: O33; J24; M54

How to quote this paper: Adamek, J., & Solarz, M. (2025). Readiness to Use Artificial Intelligence Technology among HR and Payroll Staff in Poland. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, *59*(2), 7–22.

Abstract

Theoretical background: Contemporary organisations are increasingly turning to modern digital technologies to improve their operations. Artificial intelligence (AI) is becoming an important tool to optimise HR and payroll processes, enabling automation, data analysis and effective human resource management. However, its adoption faces barriers, such as concerns about the technology or a lack of necessary employee competencies. To assess the motivators and inhibitors affecting the acceptance of modern technology, researchers use Parasuraman's Technology Readiness Index (TRI). A review of the literature on the subject shows that no research using the TRI

has been conducted in Poland to date, which would reveal the technological readiness of HR and payroll service employees to adopt AI. This prompts us to undertake research in this area, the results of which will allow us to formulate implications regarding the implementation of AI technology, leading to improvement in work efficiency.
Purpose of the article: The article aims to (a) examine the technological readiness of HR and payroll professionals, (b) assess the impact of this readiness on perceived work efficiency using AI technology and (c) identify areas where AI has the greatest potential for application in HR and payroll processes.
Research methods: The methods used in this paper are critical analysis of the literature on the subject, descriptive and comparative analysis, diagnostic survey and statistical methods, i.e. structure analysis, logistic regression and TRI analysis. The survey was conducted in May 2024 on a sample of 200 people, 105 of whom had HR and payroll services as part of their job responsibilities.
Main findings: The technological readiness of the respondents was moderately positive (TRI = 3.80). The analysis demonstrates that the TRI has a significant impact on employees' perceived job performance, which in turn indicates the key role of motivators – namely optimism (5.00) and innovation (4.71) – in the adoption of new technologies. In addition, payroll processing and monitoring changes in labour law were identified as areas in HR and payroll processes where AI has the greatest potential for application.

Introduction

Today's organisations are increasingly turning to modern technology to improve their operations. Artificial intelligence (AI) technologies are becoming a key tool for automating repetitive tasks, optimising processes and increasing work efficiency. According to a report by McKinsey & Company (2024), up to 72% of companies worldwide are using AI technologies, and 67% of organisations plan to invest in AI-based tools in the next three years.

The implementation of AI in HR and payroll management brings numerous benefits, such as the automation of payroll processes, precise monitoring and analysis of employee data and improved recruitment and selection processes (Tabor-Błażewicz, 2023). McKinsey & Company (2024) report that 37% of the companies they surveyed indicated that their use of analytical AI had reduced HR management costs, with 8% of them noting a reduction of more than 20%. The most important advantages of AI identified by Polish HR professionals were its ability to analyse large data sets (90%) and improve operational speed (72%), which can streamline routine tasks in HR (Tabor-Błażewicz, 2023).

Despite the growing potential of new technologies, employee acceptance and use of AI may face barriers. Data from PwC's (2022) *Global Workforce Hopes and Fears Survey 2022* shows that around 30% of employees expressed a fear of losing their job due to AI in the next three years. This fear is one dimension of the "AI anxiety" described in the literature, i.e. excessive anxiety about AI causing changes in personal and professional life (Wang & Wang, 2022). According to 72% of the employees surveyed by EY (2023), AI will harm their careers because they will be paid less, while 67% of them believe they will miss out on opportunities for promotion due to their lack of AI skills. In addition, another EY (2024) survey reported that 80% of respondents were concerned about the technology being used to carry out cyberattacks. More than half (53%) were concerned that their organisation will become a target for hackers, and one

third (34%) worried that they could put their employer at risk with their actions. For this reason, a key element of businesses successfully implementing AI is to properly prepare employees and to understand their readiness to adopt new technologies.

One tool to assess the readiness to adopt new technologies, including AI, is the Technology Readiness Index (TRI) developed by Parasuraman. This index measures various aspects of technology readiness, namely innovation, optimism, insecurity and discomfort, which influence employees' decisions to implement new technological solutions in their everyday work (Parasuraman, 2000; Parasuraman & Colby, 2015). Technological readiness is an important determinant of successful AI implementation in HR and payroll, and understanding it allows for better planning of digital transformation processes in the organisation (Blut & Wang, 2020).

In the context of Poland, there is a lack of detailed empirical research on the readiness of HR and payroll professionals to use AI. This article aims to fill the perceived gap by assessing the technological readiness of HR and payroll professionals and examining the impact of this readiness on the perceived effectiveness of work using AI technologies, as well as identifying areas where AI has the greatest potential for application in HR and payroll processes.

Literature review of the concept and application of the TRI

The TRI is a widely recognised framework used to assess the propensity of individuals to adopt and use new technologies in both their personal and professional lives. It was developed by Parasuraman (2000) and is widely used to understand technology adoption behaviour in a variety of contexts. The TRI is a two-dimensional construct comprising motivators and inhibitors (Blut & Wang, 2020). The first dimension includes optimism and innovation, while the second comprises discomfort and insecurity (Table 1).

Table 1. Dimensions of the TRI

Dimension	Description
Optimism	Reflects a positive view of technology and the belief that it provides greater control, flexibility and efficiency in work and daily life; is considered a motivator for technology adoption because it encourages users to see technology as beneficial
Innovation	Measures the propensity of individuals to be pioneers in adopting new technologies and indicates a proactive approach to technology use, in which individuals are willing to experiment with new technological solutions and use them to accomplish everyday tasks; is a motivator, driving early adoption and experimentation with new technologies
Discomfort	Reflects the degree of perceived difficulty and sense of lack of control over the technology; it is an inhibitor to its adoption, as people who feel uncomfortable may feel overwhelmed or intimidated by new technologies, leading to resistance or even reluctance to use them
Insecurity	Reflects concerns about the reliability and security of the technology; is an inhibitor because people who feel insecure may worry about privacy, data breaches or the possibility of technology malfunctioning, which consequently discourages them from adopting new technologies

Source: Authors' own study based on (Blut & Wang, 2020; Parasuraman, 2000; Parasuraman & Colby, 2015).

The first TRI concept consisted of 36 belief statements, each of which was rated by the respondents on a five-point scale (from 1 – *strongly disagree* to 5 – *strongly agree*). Of these statements, 10 measured optimism, 7 measured innovation, 10 measured discomfort and 9 measured insecurity. In 2015, a modified concept of the TRI, sometimes referred to in the literature as TRI 2.0, was proposed by Parasuraman and Colby (2015). They based this index on a 16-item scale to measure individuals' readiness to adopt new technologies. Their article also demonstrates the relevance and usefulness of TRI 2.0 as a customer segmentation tool to improve the practical applications of technology adoption and use. The groups they identified were sceptics, pioneers, explorers, avoiders and undecideds.

The TRI, as seen in a review of the literature on the topic, is applicable to innovative solutions in various sectors, such as education (Kaushik & Agrawal, 2021), finance (Andra & d'Angelo, 2020; Rahardja et al., 2023), tourism (Begum et al., 2023; Hassan et al., 2024; Jarrar et al., 2020), enterprise resource planning (ERP) systems (Afiana et al., 2022; Wijaya et al., 2023) or accounting (Shuhidan et al., 2023; Taib et al., 2022).

Research on the TRI in various sectors clearly indicates its key role in assessing and supporting the implementation of new technologies. For example, Kaushik and Agrawal (2021) showed that technology readiness is an important factor that influences the adoption of e-learning, highlighting the need for users to understand the technology in order to ensure the effectiveness of online learning. Rahardja et al. (2023) demonstrated that technology readiness has a direct impact on the use of mobile payment systems such as Go-Pay, where high levels of technology readiness lead to greater user acceptance of these solutions. Andra and d'Angelo (2020), on the other hand, noted a relationship between the TRI and the quality of digital services offered by Brazilian financial institutions, highlighting the fact that technological readiness can affect the perceived quality of services. A study by Hassan et al. (2024) found that optimism and innovation significantly influenced the perceptions of technology readiness among customers of five-star hotels, which is important for a hotel industry seeking to digitise services. In contrast, a study by Jarrar et al. (2020), which examined the impact of technology readiness on the adoption of the InduBai mobile travel app by potential tourists to Dubai, showed that the presence of inhibitors (discomfort and insecurity) can clearly reduce the likelihood of technology adoption. Afiana et al. (2022) demonstrated that innovation significantly influenced user readiness. While the other dimensions of optimism, discomfort and insecurity did not show a significant effect individually, they collectively influenced the readiness to implement an ERP system in a company's marketing department. Another dimension of the TRI was found to be the most significant by Shuhidan et al. (2023), who indicated a significant positive relationship between optimism and digitisation in the accounting profession, while innovation, discomfort and insecurity were not statistically significant in explaining the technology readiness of future accountants in Malaysia. Despite optimism about technology, the respondents also expressed discomfort towards it.

The use of TRI as a tool for assessing technology readiness in different areas demonstrates its universality. However, the relative impact of each dimension may vary depending on the specific technology and user context. A number of studies have indicated that discomfort and insecurity have less impact on readiness compared to optimism and innovation, suggesting that motivators outweigh inhibitors and indicating a greater openness to adopt new technologies (Blut & Wang, 2020).

One of the outcomes of TRI research is the validation of this measure in different cultural contexts. Meng et al. (2009) verified the cross-cultural relevance of the TRI, proving its robustness in measuring technology readiness among different populations, such as US and Chinese consumers. Similar conclusions were reached by Günaltay et al. (2023), who adapted the TRI to Turkish culture in order to assess people's readiness to interact with technology in the healthcare sector.

The TRI model is often integrated with other models or measures. For example, research by Dolmark et al. (2022) focussed on the relationship between dimensions of technology readiness and individual absorptive capacity towards learning behaviour in Australian universities. The authors demonstrated that optimism and innovation as motivators and insecurity and discomfort as inhibitors influenced not only technology adoption, but also learning outcomes. Furthermore, to provide a more comprehensive understanding of technology adoption, the TRI is sometimes used in conjunction with the Technology Acceptance Model (TAM) to form a component of the Technology Readiness and Acceptance Model (TRAM) (Lin et al., 2007). For example, Lin et al. (2023) found that both the TAM and the TRI significantly influenced VR acceptance among school principals. The TAM dimensions, which include perceived usefulness and perceived ease of use, play an important role in shaping attitudes towards the use of this technology in an educational institution. Of the TRI dimensions, optimism about the potential benefits for student engagement and learning outcomes is also important, while principals' concerns relate to discomfort and insecurity, particularly regarding student safety and privacy. Similar conclusions were reached by Amron et al. (2022) and Rahim et al. (2022).

The research using the TRI as an indicator can be viewed from the perspective of the areas and industries of new technology use, the territorial scope of the research, the methodology of the indicator itself and the types of new technology being analysed. This includes the internet of things (IoT; technologies related to smart devices), mobile applications, digital payments, blockchain technologies, virtual and augmented reality (VR/AR), automation and robotics or AI, among others (cf. Bessadok et al., 2018; Gandhi Maniam et al., 2023; Lin et al., 2023; Rahardja et al., 2023).

AI is a transformative field of computer science that deals with creating systems capable of performing tasks which typically require human intelligence. These tasks include learning, reasoning, analysing, perception and decision-making. AI applications span many industries, increasing productivity, accuracy and decision-making processes (Suryawanshi & Singh, 2024). The term "artificial intelligence" was offi-

cially used by John McCarthy in 1956 at the Dartmouth Conference, who defined it as the science and engineering of creating intelligent machines (McCarthy et al., 2006).

AI has also found a number of applications in the field of finance and accounting. Chatbots and virtual assistants based on the technology are increasingly being used in financial services to improve customer interactions. These tools aim to mimic human behaviour, improving the user experience and operational efficiency (Priya & Sharma, 2023). Robo-advisors are gaining popularity, providing automated investment advice and strategy implementation. The systems aim to support customer decision-making by offering personalised finance recommendations based on AI analysis (Piotrowski &Orzeszko, 2023). Flavián et al. (2022) used the TRI to identify the factors which influence customers' decisions to use robo-advisor applications. They surveyed 404 English-speaking consumers in the USA between the ages of 20 and 85, and they concluded that younger customers are more likely to adopt robo-advisors due to the factors of optimism and innovation, while older customers may face barriers with technological discomfort and insecurity.

AI is widely used to automate repetitive and simple tasks in accounting, such as data entry and transaction processing. This automation reduces human error and allows accountants to focus on more strategic activities (Eisikovits et al., 2024; Peng et al., 2023). However, the adoption of AI in accounting requires a transformation of accounting skills. Although the technology is not perceived as a threat in the labour market, there is a need to adapt accounting skills to be able to use AI-based solutions effectively (Banta et al., 2022). Damerji and Salimi (2021), in a study conducted on accounting students at two universities in the United States, demonstrated that technological readiness significantly influenced the adoption of AI in accounting. Thus, the study provides valuable information for universities and accounting students on the factors which influence AI adoption. The competencies of young people can be shaped so as to improve technological readiness, thus, providing a competitive advantage in academia and the accounting industry.

Research methods

Based on the review of the literature on the subject, it was noted that despite the growing number of studies on the implementation of AI technologies in various sectors of the economy, there is a lack of detailed analysis and empirical data on the readiness of HR and payroll service employees in Poland to use AI, especially using the Technology Readiness Index. There is no data on how the factors of innovation, optimism, discomfort and distrust of new technologies influence the readiness of these employees to accept and use AI-based solutions. The perceived gap points to the need for empirical research among HR and payroll professionals in Poland that could provide new insights into the barriers and motivations they face.

The main objective of the article is therefore to assess the technological readiness of HR and payroll professionals and to analyse the impact of this readiness on the perceived effectiveness of work using AI technologies, as well as to identify areas where AI has the greatest potential for application in HR and payroll processes. The specific objectives are as follows:

– to determine the technology readiness of HR and payroll professional respondents;

– to investigate the impact of technology readiness on HR employees' perception of the work performed using AI technologies;

– to identify areas related to HR and payroll processing where employees believe AI has the greatest potential for application.

The research hypothesis is that the readiness to use AI among HR and payroll service employees in Poland is low, and that the value for the TRI positively influences their perceived effectiveness of the work carried out with the use of AI technology. The research methods used to verify the validity of the hypothesis were critical analysis of the literature on the subject, descriptive and comparative analysis, diagnostic survey and statistical methods, i.e. structure analysis, logistic regression and analysis of the TRI. The survey was conducted in May 2024 by Market and Opinion Research Agency SW Research using the CAWI (computer-assisted web interview) method. It concerned use of AI tools by employees and owners of accounting offices. The survey sample comprised 200 practitioners, 105 of whom declared that their job responsibilities included HR and payroll services. The respondents were divided according to various demographic characteristics, such as gender, age and education. Table 2 provides a detailed breakdown of the survey sample (n = 105).

Table 2. Distribution of the research sample (n = 105)

Category		Number (n)	Share (%)
Gender	Women	53	50.48
	Men	52	49.52
Age (years)	27 and under	25	23.81
	28–36	33	31.43
	37–43	23	21.90
	44–59	21	20.00
	60 and over	3	2.86
Education	Primary/secondary/vocational	2	1.91
	Secondary (economics)	9	8.57
	Secondary (other than economics)	22	20.95
	Higher (economics)	38	36.19
	Higher (other than economics)	34	32.38

Source: Authors' own study.

The survey sample was balanced in terms of gender, with a slight prevalence of women, of whom 53 completed the questionnaire, while there were 52 men. The respondents were divided into five different age groups, the largest of which was

28–36 years, representing over 31% of the sample. Almost one in four respondents was 27 years old or younger (23.81%), with only three respondents declaring that they were over the age of 60. The vast majority of respondents had a tertiary education, either in economics (36.19%) or not (32.38%). A secondary education was indicated by 31 respondents, a majority of whom did not focus on economics (20.95% of the total respondents). It should be concluded that the survey sample was well balanced in terms of gender and represented a wide range of ages and educational levels.

Results

The TRI, whose methodology was originally developed by Parasuraman (2000) and later modified by Parasuraman and Colby (2015), was used to assess the technological readiness of the respondents. It is based on 16 variables within four categories. When proceeding to calculate the TRI values, a reliability analysis should be carried out for each construct (optimism, innovation, discomfort and insecurity) using Cronbach's alpha. All of the listed constructs achieved a coefficient with a value above 0.8, indicating very good consistency (Table 3). The questions in the survey were properly formulated and understood by the respondents, and the respective variables accurately reflected the same aspect of technological readiness.

Table 3. Constructs of the TRI for the research sample

Construct	To what extent do you agree with the following statements?		Average rating	Cronbach's α
Optimism	OPT_1	New technologies contribute to a better quality of life	5.029	0.87
	OPT_2	New technologies increase my mobility/freedom of movement	5.076	
	OPT_3	New technologies give people more control over their daily lives	4.943	
	OPT_4	New technologies make me more productive in my personal life	4.857	
Innovation	INN_1	Others turn to me for advice on new technologies	4.619	0.83
	INN_2	Generally speaking, I am one of the first people in my circle of acquaintances to make use of a new technology after its emergence	4.610	
	INN_3	I can usually understand the operation of new high-tech products/services without the help of others	4.800	
	INN_4	I keep up to date with the latest technological developments in my area of interest	4.790	
Discomfort	DYS_1	When I receive technical assistance from the manufacturer of a high-tech product or service, I feel uncomfortable with a person who knows more than me	3.848	0.84
	DYS_2	Support services are not helpful, as they do not explain the reported problems in a way I can understand	3.762	
	DYS_3	I sometimes think that new technologies are not designed for use by ordinary people	4.105	
	DYS_4	There is no such thing as a manual written in plain, understandable language for a high-tech product or service	3.990	

Construct	To what extent do you agree with the following statements?		Average rating	Cronbach's α
Insecurity	INS_1	People are too dependent on the technologies they use	4.600	0.81
	INS_2	Excessive technology distracts people to the point where it becomes harmful	4.638	
	INS_3	Technology degrades the quality of human relationships by reducing personal interactions	4.895	
	INS_4	I do not feel confident doing my business in a place that can only be reached online	4.105	

Source: Authors' own study based on: (Damerji & Salimi, 2021; Davies, 1989; Godoe & Johansen, 2012; Parasuraman, 2000).

The data summarised in Table 3 shows that the respondents largely agreed with the individual statements about new technologies. An average score above 4.5 on a seven-point Likert scale indicates *rather yes* as a response. The respondents gave the highest ratings to statements relating to optimism, which suggests that they are positive about the impact of innovative technologies on their lives. This is also supported by the relatively high ratings for statements relating to innovation, ranging from 4.610 to 4.800. In contrast, an analysis of the responses used to create the constructs of discomfort and insecurity – referred to as inhibitors or barriers – indicates that the survey population had some concerns and difficulties associated with adopting new technologies. They felt that "technology degrades the quality of interpersonal relationships by reducing personal interactions" (mean score of 4.895). They felt some discomfort and had concerns about security and over-dependence on technology. These feelings represent the negative aspects of technology readiness.

The TRI for the entire study group was 3.80 (Table 4), indicating a neutral or moderately positive technological readiness. However, the calculated standard deviation (0.76) indicates considerable diversity in the responses, meaning that the respondents included both very enthusiastic individuals and those who are more sceptical about technology.

Table 4. TRI values

The TRI and its components	Value	Standard deviation	Minimum	Maximum
TRI total score	3.80	0.76	2.25	6.00
TRI_Optimism	5.00	1.41	1.00	7.00
TRI_Innovation	4.71	1.23	1.00	7.00
TRI_Discomfort	3.93	1.29	1.00	7.00
TRI_Insecurity	4.56	1.27	1.50	7.00

Source: Authors' own study.

The histogram in Figure 1 shows the distribution of responses for the overall TRI in the study group. The largest group of respondents (64) scored a TRI value close to 3.5, which demonstrates that the majority of respondents had a neutral attitude towards technology. The distribution of results is fairly symmetrical around

the mean, which may suggest that the research group was homogeneous in terms of technology readiness.

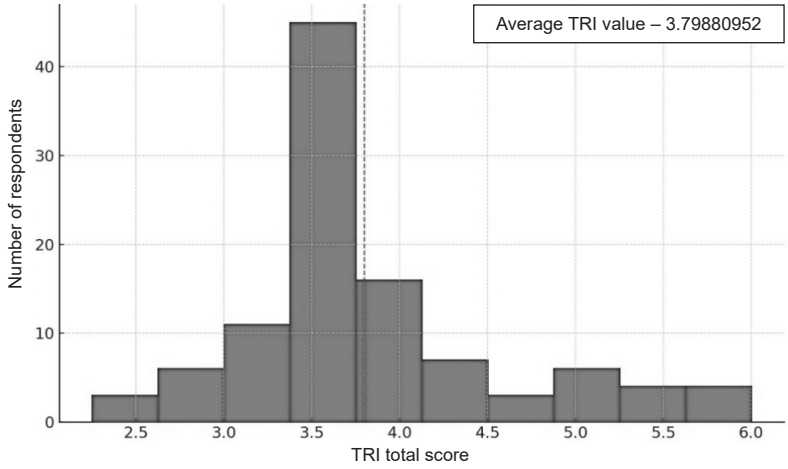

Figure 1. TRI values

Source: Authors' own study.

When analysing the TRI values by the respondents' gender, it seems that the women had a slightly higher technological readiness than the men (3.93 and 3.66, respectively). In terms of age groups, the most positive attitudes towards technology were held by those aged 37 to 43 (TRI = 4.02), while the least positive attitudes were held by the youngest respondents, i.e. those under 27 (TRI = 3.69). A clear differentiation in attitudes towards technology is evident in the education level of the respondents. Here, the TRI ranged from 3.56 to 4.01, and the highest values were for those with a secondary education focussing on economics; the lowest were for those with a primary/high school/vocational education, who take a more sceptical approach to technology.

According to the taxonomy of users developed by Parasurman and Colby (2001), based on the arrangement of the different dimensions of technological readiness, the survey group was dominated by pioneers, comprising 33 respondents (31.43% of the total). These are individuals characterised by high levels of both the activators (optimism and innovation) and the inhibitors (discomfort and insecurity). Pioneers are enthusiastic about new technology and eager to embrace it, but at the same time feel some anxiety and insecurity about it. This ambivalence makes them cautious, but at the same time ready to use the new technology. They see the benefits of it, but are aware of the potential risks and problems. The statistical profile of the average pioneer is a woman between 44 and 59 years old with a university degree in economics.

Importantly for the research objective of this article, the regression analysis allowed for an assessment of the impact of the TRI on HR employees' perception of the effectiveness of work performed using AI technologies. The construct "Perceived Effectiveness" is formed by three variables, representing the following statements assessed by the respondents:

– using AI technology in my work would make it easier to do my job (average score 4.20);

– using AI technology in my work would allow me to complete my tasks faster (average score 4.46);

– using AI technology in my work would increase my efficiency (average score 4.39).

The average ratings for these three statements indicate that the respondents had a moderately positive attitude towards the impact of AI on their work. On a seven-point Likert scale, they ranked between 4 and 5, i.e. between *rather agree* and *agree* with the statement in question. The highest rating was given to the statement about completing tasks faster (4.46), suggesting that the respondents saw the greatest potential for AI to speed up the execution of their duties, leading to increased efficiency in their work. The Cronbach's alpha coefficient for Perceived Effectiveness was 0.996, demonstrating very high internal consistency of the variables that make up this construct, and confirming that it was appropriately created.

The results of the regression analysis indicate that technology readiness, as measured by the TRI, has a positive, statistically significant effect on the perceived effectiveness of HR work performed using AI technologies (Table 5). A one-point increase in the TRI is associated with a 0.453-unit increase in Perceived Effectiveness.

Table 5. Results of regression analysis

Variable	β coefficient	Standard error	*t*-value	*p*-value	95% Confidence interval
Constant (const)	2.630	0.693	3.796	0.000	[1.256, 4.004]
TRI	0.453	0.179	2.530	0.013	[0.098, 0.807]

Source: Authors' own study.

A *p*-value of 0.013 suggests that this effect is statistically significant ($p < 0.05$), meaning that there is statistical support for the thesis that the TRI positively affects Perceived Effectiveness. The confidence interval does not include zero, further confirming the significance of this effect.

The R-square value of 0.058 indicates that the model explains only 5.8% of the variation in Perceived Effectiveness. This is a relatively low result, which suggests the need to include additional variables in the analysis, and thus sets the stage for further research in this area. Nevertheless, the statistically significant, positive relationship between HR employees' willingness to use technology and perceived effectiveness should be read positively. Individuals who are more open to modern technologies perceive these technologies as more useful at work, making them more likely to use them and, in turn, increasing the efficiency of their work tasks.

The responses to one of the questions in the survey identified key areas related to HR and payroll processing in which employees believed AI has the greatest potential for application (Table 6).

Table 6. Mean scores on perceptions of the extent to which AI can be used to perform various HR and payroll tasks

Task	Score
Employee data management	4.50
Documentation administration	4.58
Processing and time management	4.77
Payroll preparation and processing	4.79
Employee benefits management	4.64
Monitoring of changes in labour and employment legislation	4.79
Internal communication and support to employees on employment issues	4.62
Supporting staff professional development, mentoring	4.50
Communication with management – interpretation of HR and payroll data analysis	4.61
Organisation of recruitment processes	4.57

Source: Authors' own study.

The average ratings for HR and payroll tasks were similar, oscillating between 4.5 and 4.8 on a seven-point scale. The highest ratings were given to preparing and processing payroll and monitoring changes in labour and employment legislation (4.79 each), which may indicate that the respondents saw the greatest potential of using AI in automating processes. In contrast, the lowest scores for the tasks of managing employee data and supporting employee professional development and mentoring (4.5 each) suggest a more complex approach to their implementation that requires more human involvement.

Discussion and conclusions

This paper assesses the technological readiness of HR and payroll service employees in Poland and its impact on perceived work efficiency in the context of using AI technologies. The study revealed an average TRI value of 3.80 on a seven-point scale, indicating a moderately positive readiness for the adoption of AI technologies among the respondents. The highest TRI values were recorded for optimism (5.00), while the lowest values were for discomfort (3.93), indicating some fear of new technologies. The results confirm that the motivators of optimism and innovativeness are crucial to the adoption of new technologies, which is in line with the findings of other researchers cited in this research paper (cf. Afiana et al., 2022; Blut & Wang, 2020; Hassan et al., 2024; Lin et al., 2023; Rahardja et al., 2023; Shuhidan et al., 2023). This observation is also supported by the results of research into the use of digital financial services, which indicate that personal innovation – in

conjunction with expressed trust – significantly influences users' decisions to adopt new technologies (Solarz & Adamek, 2023). The survey indicates that AI has great potential in automating HR and payroll processes, especially in areas such as payroll preparation, employee data management or monitoring changes in legislation. In contrast, the tasks related to mentoring and supporting employees' professional development were rated lowest by the respondents (4.50), which may suggest that these processes require a more complex approach, in which technology cannot fully replace human interaction.

The respondents expressed moderately positive attitudes towards the implementation of AI-based solutions, especially in the context of increasing work efficiency (4.39). Nevertheless, the analysis demonstrates that the TRI has a significant impact on employees' perceived work performance, which in turn indicates the key role of positive attitudes and innovation in the adaptation of new technologies. This observation leads to the theoretical implication that it is worthwhile for future research to incorporate the TRI conceptual framework into models of job performance, as a high TRI score may be a predictor of improved job performance. For example, the TRI can be incorporated into the Technostress Model developed by Tarafdar et al. (2007), which examines the impact of technology on employee stress and performance. Technological readiness may play a role in reducing technostress, as employees who are more confident and innovative with technology will be less stressed by new tools, positively affecting their productivity.

The results of the study indicate practical implications, addressed mainly to companies introducing AI-based solutions for HR and payroll tasks. AI tools are valued for their cost-effectiveness and efficiency, which they achieve mainly by reducing administrative burdens or streamlining many processes. However, their implementation requires new skills as well as changes in employees' attitudes towards their use in daily work. This entails investment in staff training to better understand the nature of the innovations being implemented and the skills associated with AI technologies. The lack of comfort and insecurity mentioned in the article can be reduced by employers' efforts to develop a clear vision for their company's implementation of AI. Change management strategies should address employee concerns and foster a culture of acceptance, which can significantly increase the readiness to adopt the new technology. It is equally important to involve employees in the AI adoption process, for example, by including them in discussions and decision-making. Engaged employees are more likely to embrace new technologies, thereby improving overall productivity and job satisfaction. This approach increases readiness as well as confidence in using AI technologies.

The implications of the research may also impact educational institutions, including universities involved in the training of future employees in accounting and payroll services. In light of the rapid changes brought about by the Fourth Industrial Revolution, there is a need to modify curricula and training programmes so as to prepare future employees to use AI tools sensibly and ethically.

References

Afiana, F., Septiana, L.N., & Khotimah, K. (2022). Technology Readiness Index (TRI) for measurement of user readiness in ERP implementation in the marketing department. *Jurnal Sistem Informasi Dan Ilmu Komputer Prima (JUSIKOM PRIMA)*, *6*(1), 35–42. **https://doi.org/10.34012/jurnalsisteminformasidanilmukomputer.v6i1.2624**

Amron, M.T., Noh, N.H.M., & Mohamad, M.A. (2022). Predicting the acceptance of cloud computing in higher education institutions by extending the technology readiness theory. *Asian Journal of University Education*, *18*(3), 767–779. https://files.eric.ed.gov/fulltext/EJ1348450.pdf

Andra, C.G., & d'Angelo, M.J. (2020). The relationship between the Technology Readiness Index (TRI) and the quality of digital services of Brazilian financial institutions. *Management and Business Research Quarterly, 15*, 1–10. **https://doi.org/10.32038/mbrq.2020.15.01**

Banța, V.C., Rîndașu, S.M., Tănasie, A., & Cojocaru, D. (2022). Artificial intelligence in the accounting of international businesses: A perception-based approach. *Sustainability*, *14*(11), 6632. **https://doi.org/10.3390/su14116632**

Begum, N., Rana, N.P., & Kumar, K. (2023). Technological readiness in the hospitality and tourism literature – a meta-analysis review. In *International Working Conference on Transfer and Diffusion of IT* (pp. 215–224). **https://doi.org/10.1007/978-3-031-50204-0_18**

Bessadok, A., Lassaad, S., Almotairi, K.H.A., & Hatem, A. (2018). Internet of Things users classification according to their Technology Readiness Index. *International Journal of Internet of Things*, *7*(2), 37–44. **https://doi.org/10.5923/j.ijit.20180702.03**

Blut, M., & Wang, C. (2020). Technology readiness: A meta-analysis of conceptualizations of the construct and its impact on technology usage. *Journal of the Academy of Marketing Science*, *48*, 649–669. **https://doi.org/10.1007/s11747-019-00680-8**

Damerji, H., & Salimi, A. (2021). Mediating effect of use perceptions on technology readiness and adoption of artificial intelligence in accounting. *Accounting Education*, *30*(2), 107–130. **https://doi.org/10.1080/09639284.2021.1872035**

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS*, *13*(3), 319–340. **https://doi.org/10.2307/249008**

Dolmark, T., Sohaib, O., Beydoun, G., Wu, K., & Taghikhah, F. (2022). The effect of technology readiness on individual absorptive capacity toward learning behavior in Australian universities. *Journal of Global Information Management*, *30*(1), 1–21. **https://doi.org/10.4018/jgim.306245**

Eisikovits, N., Johnson, W.C., & Markelevich, A. (2024). Should accountants be afraid of AI? Risks and opportunities of incorporating artificial intelligence into accounting and auditing. *Accounting Horizons*, 1–7. **https://doi.org/10.2308/horizons-2023-042**

EY. (2023). *New EY research reveals the majority of US employees feel AI anxiety amid explosive adoption*. https://www.ey.com/en_us/newsroom/2023/12/ey-research-shows-most-us-employees-feel-ai-anxiety

EY. (2024). *Nowe technologie, nowe obawy. AI nasila niepokoje dotyczące cyberbezpieczeństwa.* https://www.ey.com/pl_pl/news/2024/07/nowe-technologie-nowe-obawy-ai-fy25

Flavián, C., Pérez-Rueda, A., Belanche, D., & Casaló, L.V. (2022). Intention to use analytical artificial intelligence (AI) in services – the effect of technology readiness and awareness. *Journal of Service Management*, *33*(2), 293–320. **https://doi.org/10.1108/JOSM-10-2020-0378**

Gandhi Maniam, P., Prentice, C., Sassenberg, A.-M., & Soar, J. (2023). Identifying an optimal model for blockchain technology adoption in the agricultural sector. *Logistics*, *7*(3), 59. **https://doi.org/10.3390/logistics7030059**

Godoe, P., & Johansen, S.T. (2012). Understanding adoption of new technologies: Technology readiness and technology acceptance as an integrated concept. *Journal of European Psychology Students*, *3*(1), 38–53. **https://doi.org/10.5334/jeps.aq**

Günaltay, M.M., Önder, Ö.R., & Özgür, E.G. (2024). Measuring Technology Readiness Index level: Scale adaption study. *Journal of Mehmet Akif Ersoy University Economics and Administrative Sciences Faculty*, *11*(1), 51–65. **https://doi.org/10.30798/makuiibf.1097662**

Hassan, H.G., Nassar, M., & Abdien, M.K. (2024). The influence of optimism and innovativeness on customers' perceptions of technological readiness in five-star hotels. *Pharos International Journal of Tourism and Hospitality*, *3*(1), 70–80. **https://doi.org/10.21608/pijth.2024.265141.1010**

Jarrar, Y., Awobamise, A., & Sellos, P. (2020). Technological Readiness Index (TRI) and the intention to use smartphone apps for tourism: A focus on in Dubai mobile tourism app. *International Journal of Data and Network Science*, *4*(3), 297–304. **https://doi.org/10.5267/j.ijdns.2020.6.003**

Kaushik, M.K., & Agrawal, D. (2021). Influence of technology readiness in adoption of e-learning. *International Journal of Educational Management*, *35*(2), 483–495. **https://doi.org/10.1108/IJEM-04-2020-0216**

Lin, C.H., Shih, H.Y., & Sher, P.J. (2007). Integrating technology readiness into technology acceptance: The TRAM model. *Psychology & Marketing*, *24*(7), 641–657. **https://doi.org/10.1002/mar.20177**

Lin, X., Li, B., Zhang, M., & Yang, Z. (2023). Exploring the intersections of TAM and TRI models in middle school VR technology acceptance. *Frontiers in Education*, *8*, 1308509. **https://doi.org/10.3389/feduc.2023.1308509**

McCarthy, J., Minsky, M.L., Rochester, N., & Shannon, C.E. (2006). A proposal for the Dartmouth summer research project on artificial intelligence. *AI Magazine*, *27*(4), 12–14. **https://doi.org/10.1609/aimag.v27i4.1904**

McKinsey & Company. (2024). *The state of AI in early 2024: Gen AI adoption spikes and starts to generate value*. https://www.mckinsey.com/~/media/mckinsey/business%20functions/quantumblack/our%20insights/the%20state%20of%20ai/2024/the-state-of-ai-in-early-2024-final.pdf?shouldIndex=false

Meng, G., Elliott, K., & Hall, M.C. (2009). Technology Readiness Index (TRI): Assessing Cross-Cultural Validity. *Journal of International Consumer Marketing*, *22*(1), 19–31. **https://doi.org/10.1080/08961530902844915**

Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, *2*(4), 307–320. **https://doi.org/10.1177/109467050024001**

Parasuraman, A., & Colby, C.L. (2001). *Techno-Ready Marketing: How and Why Your Customers Adopt Technology*. The Free Press.

Parasuraman, A., & Colby, C.L. (2015). An updated and streamlined Technology Readiness Index TRI 2.0. *Journal of Service Research*, *18*(1), 59–74. **https://doi.org/10.1177/1094670514539730**

Peng, Y., Ahmad, S.F., Ahmad, A.Y.B., Al Shaikh, M.S., Daoud, M.K., & Alhamdi, F.M.H. (2023). Riding the waves of artificial intelligence in advancing accounting and its implications for sustainable development goals. *Sustainability*, *15*(19), 14165. **https://doi.org/10.3390/su151914165**

Piotrowski, D., & Orzeszko, W. (2023). Artificial intelligence and customers' intention to use robo-advisory in banking services. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *18*(4), 967–1007. **https://doi.org/10.24136/eq.2023.031**

Priya, B., & Sharma, V. (2023). Exploring users' adoption intentions of intelligent virtual assistants in financial services: An anthropomorphic perspectives and socio-psychological perspectives. *Computers in Human Behavior*, *148*, 107912. **https://doi.org/10.1016/j.chb.2023.107912**

PwC. (2022). *Global Workforce Hopes and Fears Survey 2022*. https://www.pwc.com/gx/en/issues/workforce/hopes-and-fears-2022.html

Rahardja, U., Hapsari, I.D., Putra, P.H., & Hidayanto, A.N. (2023). Technological readiness and its impact on mobile payment usage: A case study of go-pay. *Cogent Engineering*, *10*(1), 2171566. **https://doi.org/10.1080/23311916.2023.2171566**

Rahim, N.N.A., Humaidi, N., Aziz, S.R.A., & Zain, N.H.M. (2022). Moderating effect of technology readiness towards Open and Distance Learning (ODL) technology acceptance during COVID-19 pandemic. *Asian Journal of University Education*, *18*(2), 406–421.**https://doi.org/10.24191/ajue.v18i2.17995**

Shuhidan, S.M., Awang, Y., Taib, A., Rashid, N., & Hasan, M.S. (2023). Technology readiness among future accountants towards digitalization of accounting profession. *Indonesian Journal of Sustainability Accounting and Management*, *7*(S1), 1–12. **https://doi.org/10.28992/ijsam.v7s1.878**

Solarz, M., & Adamek, J. (2023). Trust and personal innovativeness as the prerequisites for using digital lending services offered by fintech lenders. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, *57*(1), 197–218. **http://doi.org/10.17951/h.2023.57.1.197-218**

Suryawanshi, R., & Singh, S. (2024). Artificial intelligence and its applications. *International Journal of Advanced Research in Science, Communication and Technology*, *4*(3), 654–660. **https://doi.org/10.48175/ijarsct-18975**

Tabor-Błażewicz, J. (2023). Artificial intelligence adoption in human resources management. *Game Changers in Management*, 30–43. **https://doi.org/10.15611/2023.10.9.02**

Taib, A., Awang, Y., Shuhidan, S.M., Rashid, N., & Hasan, M.S. (2022). Digitalization in accounting: Technology knowledge and readiness of future accountants. *Universal Journal of Accounting and Finance*, *10*(1), 348–357. **https://doi.org/10.13189/ujaf.2022.100135**

Tarafdar, M., Tu, Q., Ragu-Nathan, B.S., & Ragu-Nathan, T.S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, *24*(1), 301–328. **https://doi.org/10.2753/MIS0742-1222240109**

Wang, Y.Y., & Wang, Y.S. (2022). Development and validation of an artificial intelligence anxiety scale: An initial application in predicting motivated learning behavior. *Interactive Learning Environments*, *30*(4), 619–634. **https://doi.org/10.1080/10494820.2019.1674887**

Wijaya, S.F., Wiratama, J., & Egeten, A.E.J. (2023). Modeling the readiness measurement for enterprise resource planning system implementation success. *Jurnal Nasional Teknik Elektro Dan Teknologi Informasi*, *12*(3), 159–166. **https://doi.org/10.22146/jnteti.v12i3.7699**