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Students' Perceptions of Workplace Robots in the Republic of Serbia

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Abstract:

Research Question: The key research question is what the key positive and negative perceptions of students from the Republic of Serbia regarding workplace robots are. **Motivation:** Academics, practitioners, and decision-makers are more and more interested in the impact of new technological solutions in the field of robotics on organizations and their functioning. Ongoing technological advancements have accelerated the adoption and use of robots in the workplace. As a result, organizations that plan to introduce robots should consider all effects on employees, both positive and negative. **Idea:** The main idea is to examine and analyse the perceptions and attitudes of students from the Republic of Serbia regarding robots at the workplace. The results of this study regarding students' perceptions and attitudes towards robots in the workplace are crucial for the future of work and job design. **Data:** Data were collected via online questionnaire consisting of five profile questions and 13 statements organized in two five-point Likert scales. From January to March 2023, the questionnaire was completed by 164 students from the Republic of Serbia. **Tools:** The collected answers were analysed using the Statistical Package for Social Sciences – SPSS, version 21.0. (Armonk, NY: IBM Corporation). The Cronbach's Alpha coefficient, Kolmogorov-Smirnov test, descriptive statistics, student t-test and one-way ANOVA test was used for data analysis. **Findings:** Research results showed that most respondents believe that robots can do dangerous jobs that humans cannot, that robots can free humans from routine and monotonous jobs, and that humans will have more time for creative tasks. Robots in the workplace, on the other hand, will have some negative consequences. Many respondents agree that working with robots without people would make them feel lonely; robots would not know how to react in some unexpected circumstances; and they are not as flexible and mobile as humans. **Contribution:** The findings of this study could make a significant contribution to a better understanding of students' attitudes towards robots in the workplace and they may help decision makers, employers, leaders, and managers on how to increase workplace acceptance of robots.

Keywords: students, employment, workplace, robots, study, Republic of Serbia

JEL Classification: O15, O30

1. Introduction

With every new technology, new forms, and methods of interaction between machines and humans emerge, providing a direct impact on the nature of work (Kadir & Broberg, 2021). Organizations may benefit from robots only if employees are motivated and engaged in accepting this technological change (Turja & Oksanen, 2019). Robots acceptance at work is necessary and critical considering the new Industry 5.0 trend, which requires active collaboration of robots and humans. The core philosophy of Industry 5.0 is that humans should work closely with machines and robots to exploit each other's strengths while eliminating or reducing their weaknesses (Noble et al., 2022). In that way the best of both worlds is combined – the speed and accuracy of robots with cognitive skills and critical thinking of humans (Grabowska, Saniuk, & Gajdzik, 2022). In the contemporary workplace, it is becoming more and more necessary for people and robots to coexist peacefully respecting each other's knowledge, abilities, and skills (Doyle Kent & Kopacek, 2020; Nahavandi, 2019). Organizations that plan to introduce robots in the workplace should consider all potential

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effects on employees, both positive and negative (Yam et al., 2023), because the implementation of novel technological solutions necessitates significant changes in human resource management and organizational behaviour (Hajal & Rowson, 2020). Bearing in mind that one of the most significant obstacles to implementing robots is exhibited through employees' negative attitudes and perceptions, organizations must be prepared to provide adequate support to employees (Lukic Nikolic & Labus, 2024). Consequently, organizations must be properly prepared for future generations of employees, including their attitudes and perceptions of innovative technological solutions in the workplace. According to the resource-based approach, employees are considered the most important asset of any organization since they are valuable, rare, imperfectly imitable, and non-substitutable (Barney, 2001). Furthermore, employees are affected by a variety of organizational and individual phenomena within organizations (Daft, 1983; Barney, 1991), including contemporary robots in the workplace. While the topic's importance and significance are widely acknowledged, only few research works have examined students' attitudes and perceptions regarding workplace robots (Ivkov et al., 2020; Leoste et al., 2022; Seyitoglu et al., 2022; Beletic & Vretenar, 2023; Yam et al., 2023). This research gap was the primary motivation for this paper.

The aim of this paper is to examine and analyze the perceptions and attitudes of students regarding workplace robots in the Republic of Serbia. The significance of this research stems from the fact that the opinions and attitudes of future candidates on the labour market are crucial for employers who have robots in their workplaces or intend to introduce them. Similarly, employees are becoming more demanding when it comes to employment and employer selection, which is why employers must prepare and design an appealing employee value proposition in order to attract and retain employees in the long run, as well as achieve optimal results and effects in the employee-robot interaction.

The paper is structured as follows. The theoretical part of the paper is focused on defining robots, their key characteristics, potentials, benefits, as well as potential disadvantages. The empirical part of the paper is focused on research methodology, research results and discussion of research findings. Givwn in the conclusion section are the key summary of the paper, theoretical and practical implications, as well as limitations and propositions for future research.

2. Theoretical Background

Robots are intelligent physical systems equipped with sensors, actuators, and a certain level of artificial intelligence, and programmed by computer algorithms to perform various tasks in place of or alongside humans (Carrozza, 2019; Smids, Nyholm, & Berkers, 2020). They represent the type of "information technology in a physical embodiment, providing customized services by performing physical as well as nonphysical tasks with a high degree of autonomy" (Jorling, Bohm, & Paluch, 2019, p. 405). The first type of robots was the industrial robot, designed as a reprogrammable, adaptive manipulator with a body, arm, and wrist assembly whose main aim was to move material, parts, and tools. In the last two decades, robots have become more virtual (simulated robots, soft robots) and applied in various complex tasks and activities (Groover et al., 2012). The following types of robots can be distinguished: pre-programmed robots which carry out specific tasks in a defined add controlled environment (engaged in the process of serial production in factory); human-controlled robots (operations robots, submarine robots, drones) which require human assistance, control, and monitoring; autonomous robots which can interpret their surroundings and take appropriate actions (robots in hospitals that deliver medicines to patients); robots connected or integrated with the human body (robotic legs or arms) that can assist employees in carrying heavy equipment (Smids, Nyholm, & Berkers, 2020). A special type of robot - collaborative robot, or co-bot, is designed to work and interact closely with humans (Castillo et al., 2021). This type of robot has human-like characteristics that allow collaboration with humans as well as with other robots. Robots, like any other technology (personal computers, Internet, smartphones, etc.), are expected to become common not only in organizations, but also in everyday life (Bartneck et al., 2020).

The benefits of using robots in the workplace can be observed from various perspectives. Employees may be replaced by robots in dangerous jobs (mines, chemicals, construction, explosives), and humans will no longer have to do physically demanding, monotonous, routine, and boring jobs. New robots have the potential to make workplaces more inclusive and safer for employees (Kwanya, 2023). Furthermore, mobile robots and exoskeletons make some tasks easier and less physically demanding, allowing women to work in previously male-dominated jobs (Breque, De Nul, & Petridis, 2021). Packing, palletizing, picking, placing, injecting, pouring, polishing, screwing, dosing, welding, and glueing are the main tasks in which robots are traditionally used extensively (Doyle Kent & Kopacek, 2020). Humanoid robots are already employed in positions in tourism and hospitality services, retail, and education industries. When interacting with individu-

als, they can convey themselves through gestures and facial expressions (Stock-Homburg & Merkle, 2021). It is anticipated that collaborative and management robots would eliminate many white-collar jobs, to a larger extent than industrial robots have done with blue-collar jobs (Chugh, Macht, & Hossain, 2022). Human resources, finance, accounting, insurance, telecommunication, information technology systems, education, banking, supply chain management, legal services, real estate management, and logistics are among the areas where robots are increasingly being used (Lievano-Martinez et al., 2022; Siderska, 2020), while jobs involving providing customer service, such as bank tellers, cashiers, travel agents, and receptionists, have a high likelihood of disappearing in the future (Fantina, Storozhuk, & Goyal, 2022). However, some jobs are unsuitable for automation such as: research and development, home nursing care, art, entertainment, and other service-related industries such as elementary education, psychotherapy, and yoga (Berg, Buffie, & Zanna, 2018). Furthermore, robots cannot form emotional bonds with co-workers or customers (Stock-Homburg & Merkle, 2021).

From an organizational standpoint, the benefits of robots are numerous. Robots are less expensive than humans, they make fewer mistakes during work, and they never complain about working conditions (Nakitare et al., 2020). Robots and automation systems are able to improve the quality and variety of products and services (Ing, Grossman, & Christian, 2022). One of the most significant advantages for businesses is that robots are highly efficient and productive. Apart from the benefits, some of the identified disadvantages of robots include a lack of creativity, a lower level of interaction, and the inability to react adequately in some unstructured, sudden, and unexpected circumstances (Ivanov, 2019).

3. Research Questions and Methodology

People's attitudes and perceptions are important predictors of the outcomes of any organizational change (Albrecht, Connaughton & Leiter, 2022). The acceptance of new technology is determined by people's personal attitudes towards technology (Del Giudice et al., 2023). In the workplace, robots are getting closer to humans (Kaur, Kim & Kim, 2021; Kwanya, 2023). Consequently, it is important to emphasize the main positive and negative perceptions regarding workplace robots among students in the Republic of Serbia. The aim of this paper is to answer the following research questions (RQ):
RQ 1: What are the key positive perceptions of students from the Republic of Serbia regarding workplace robots?
RQ 2: What are the key negative perceptions of students from the Republic of Serbia regarding workplace robots?

A questionnaire technique was used for data collection in this research. The questionnaire consisted of two sections. The first section encompassed five profile questions regarding gender, age, field of education, employment status, and work-related experience with robots. The second section of the questionnaire was based on the statements to which respondents gave scores on five-point Likert scale ranging from 1 to 5 based on how much they agreed with the statements. Score 1 indicated that respondents disagreed completely with the statement, while score 5 indicated that respondents completely agreed with the statement. The first scale "Positive perceptions of robots in the workplace" contained seven statements, whereas the second, "Negative perceptions of robots in the workplace", contained six statements. The scales were developed using statements derived from a review of the literature on the positive and negative effects of workplace robots. The pilot research that encompassed 30 respondents showed a high degree of reliability of statements (Cronbach's Alpha coefficient was above 0.70 for both measurement scales).

The questionnaire was distributed online to bachelor and master students of one faculty in Belgrade, Republic of Serbia. The questionnaire was completely anonymous and distributed using the Microsoft Teams platform, where 480 students had active accounts. In the period from January to March 2023, the questionnaire was placed on the platform three times with a cordial request to students to contribute to science and it took an average of 13 minutes to complete the questionnaire. A total of 211 students answered the questionnaire, which makes a response rate of 43.96%, which is considered satisfactory in the field of social science, having in mind that acceptable response rate ranges from 30 to 70% (De Vaus, 2013). During the initial phase of data analysis, many questionnaires were only partially completed, hence they were excluded from further research. After removing partially completed questionnaires, 164 valid responses remained for further processing and analysis (valid response rate: 34.17%). The collected answers were processed and analysed using the Statistical Package for Social Sciences – SPSS, version 21.0. (Armonk, NY: IBM Corporation). The significance level was set at $p<0.05$. The Cronbach's Alpha coefficient was calculated for both scales. Based on the results presented in Table 1, values of this coefficient are higher than 0.7, which demonstrates a high degree of reliability (DeVellis, 2003).

Table 1: Cronbach's Alpha coefficient for measurement scales

Scale	N	Cronbach's Alpha
Positive perceptions regarding robots in the workplace	7	0.866
Negative perceptions regarding robots in the workplace	6	0.733

The normality of data distribution was tested with Kolmogorov-Smirnov test, as well as by reviewing histograms, skewness, kurtosis, normal probability curve, and boxplot. Based on the results of the Kolmogorov-Smirnov test, the values of Sig. for each of the measurement scales are higher than 0.05 (Sig.=0.200 for the scale for Positive perceptions regarding robots in the workplace; Sig.=0.100 for the scale for Negative perceptions regarding robots in the workplace), which indicates that the assumption of normality of data distribution is satisfied and that parametric statistical techniques may be applied. T-test test was used to examine the differences in two groups, while one-way ANOVA test was used to examine the differences in three or more groups. The confidence interval was set at 95%. In all the tests comparing differences between groups, the Levene's test for equality of variances was applied. In all cases, the homogeneity of variance assumption was met ($p > 0.05$).

4. Research Results

Table 2 presents the basic characteristics of respondents that participated in this research. All 164 respondents attend a faculty from the Republic of Serbia in the field of economy. The majority of respondents (113, i.e., 68.9%) are female. More than two-thirds of those surveyed (119, i.e., 72.6%) are under the age of 25. Regarding employment status, more than a half of respondents (85, i.e., 51.8%) are employed. All respondents have no work-related experience with robots and their answers are based on their perceptions and attitudes regarding workplace robots.

Table 2: Basic characteristics of respondents that participated in the research

	Number	%
Gender		
Male	51	31.1
Female	113	68.9
Age of respondents		
Less than 25	119	72.6
Between 25 and 35	24	14.6
Between 36 and 50	21	12.8
Employment status		
Employed	85	51.8
Not employed	79	48.2
Previous experience with robots in the workplace		
Yes	0	0
No	164	100%

Table 3 presents the frequencies, percentages, means (M) and standard deviations (SD) of responses to the statements in the scale "Positive perceptions of robots in the workplace".

Table 3: Statistical results for statements in the scale "Positive perceptions of robots in the workplace"

Statements	Answers	N	%	M	SD
I believe robots can do dangerous jobs that humans could not.	Disagree	35	21.3	3.63	1.392
	Neutral attitude	34	20.7		
	Agree	95	57.9		
I believe that robots can be more productive than humans.	Disagree	57	34.7	3.07	1.412
	Neutral attitude	39	23.8		
	Agree	68	41.4		
I believe that robots make fewer mistakes during work than humans.	Disagree	55	33.5	3.07	1.271
	Neutral attitude	47	28.7		
	Agree	62	37.8		
I believe that robots could perform more complex tasks.	Disagree	53	32.3	3.16	1.317
	Neutral attitude	42	25.6		
	Agree	69	42.1		
I believe that robots would free me from routine and monotonous jobs.	Disagree	55	27.4	3.38	1.380
	Neutral attitude	37	22.6		
	Agree	82	50.0		
I believe that with robots I would have enough time to dedicate myself to creative tasks.	Disagree	45	27.4	3.26	1.310
	Neutral attitude	47	28.7		
	Agree	72	43.6		
I can imagine myself working alongside a robot.	Disagree	91	55.4	2.57	1.487
	Neutral attitude	25	15.2		
	Agree	48	29.3		

M – Mean; SD – Standard Deviation

Almost 60% of the respondents believe robots can perform dangerous tasks that humans cannot. Only 21.3% of the respondents disagree with this statement, while 20.7% have a neutral attitude. Furthermore, 41.4% of the respondents believe robots can be more productive than humans, while approximately one-third (34.7%) disagree with this statement. In terms of mistakes, 37.8% of the respondents believe that robots make fewer mistakes than humans during work, while 33.5% disagree. A sizable proportion of the respondents (28.7%) have a neutral attitude. It is interesting to point out that the majority of the respondents (42.1%) believe that robots could perform more complex tasks, while half (50%) believe that robots would free them from routine and monotonous tasks. 43.6% of the respondents believe that the impact of robots will result in more time for employees to devote themselves to creative tasks. It is important to mention that more than half of the respondents (55.4%) cannot imagine themselves working alongside a robot, while 29.3% can.

The highest arithmetic mean is given to the statement that robots can do dangerous jobs that humans cannot (3.63), while the second and third positions are given to the statements that robots would free the respondents from routine and monotonous jobs (3.38), and that respondents would have enough time for creative tasks (3.26). The arithmetic mean lower than 3 (2.57) is given to the statement that the respondents can imagine themselves working alongside a robot.

The t-test revealed no statistically significant differences in the following characteristics: gender of respondents $t_{162}=1.316$; $p=0.190$ ($M_{male}=3.25$; $SD_{male}=0.91$; $M_{female}=3.05$; $SD_{female}=0.92$); and employment status of respondents $t_{162}=-0.788$, $p=0.432$ ($M_{employed}=3.06$; $SD_{employed}=0.83$; $M_{unemployed}=3.17$; $SD_{unemployed}=0.99$). The one-way ANOVA test revealed no statistically significant differences in the respondents' ages $F_{161}=1.024$; $p=0.361$ ($M_{less\ than\ 25}=3.14$; $SD_{less\ than\ 25}=0.92$; $M_{25\text{-}35}=2.88$; $SD_{25\text{-}35}=0.85$; $M_{36\text{-}50}=3.23$; $SD_{36\text{-}50}=0.91$).
The conducted statistical analysis showed that there are no statistically significant differences in answers regarding gender, employment status, and age of the respondents. They all have similar perceptions and attitudes regarding robots in the workplace.

Table 4 presents the frequencies, percentages, means (M) and standard deviations (SD) of responses to statements in the scale "Negative perceptions of robots in the workplace".

Table 4: Statistical results for statements in the "Negative perceptions of robots in the workplace" scale

Statements	Answers	N	%	M	SD
I believe that robots are not as flexible and mobile as humans.	Disagree	29	17.7	3.76	1.268
	Neutral attitude	36	22.0		
	Agree	99	60.3		
I believe that robots would not know how to react in some sudden circumstances.	Disagree	24	14.6	3.90	1.204
	Neutral attitude	28	17.1		
	Agree	112	68.3		
I believe that a robot could replace me in the workplace.	Disagree	110	67.1	2.15	1.235
	Neutral attitude	27	16.5		
	Agree	27	16.5		
It would be uncomfortable for me to work alongside robots.	Disagree	67	40.8	3.01	1.482
	Neutral attitude	37	22.6		
	Agree	60	36.6		
I would not feel safe working next to a robot.	Disagree	67	40.9	2.98	1.403
	Neutral attitude	38	23.2		
	Agree	59	35.9		
I would feel lonely if I only worked with robots, without people.	Disagree	21	12.8	4.08	1.253
	Neutral attitude	20	12.2		
	Agree	123	75.0		

M – Mean; SD – Standard Deviation

The majority of the respondents, 60.3%, do not believe robots are as flexible and mobile as humans. Only 17.7% of the respondents disagree with this statement, with the remaining 22% of the respondents having a neutral attitude. More than two thirds (68.3%) of the respondents believe that robots would not be able to react properly in some sudden circumstances. Only 14.6% of the respondents disagree with this statement, while 17.1% of them have a neutral attitude. More than two-thirds (67.1%) of the respondents do not believe robots will be able to replace them in the workplace, while 16.5% of them are neutral. In addition, 16.5% of the respondents believe that robots will eventually replace them in the workplace. Approximately one-third of the respondents stated that working alongside robots would be uncomfortable for them, while 40.8% disagreed. There are also 22.6% of the respondents who are neutral. Furthermore, 35.9% of the respondents would not feel safe working alongside robots, and 75% would feel lonely if they only worked with robots, without people.

The statement that the respondents would feel lonely if they only worked with robots instead of people receives the highest arithmetic mean (4.08). According to the arithmetic mean value, on the second position is a statement that robots would not know how to react in some unexpected circumstances (3.90), while on the third position is a statement that robots are not as flexible and mobile as humans (3.76).

The t-test revealed no statistically significant differences in the following characteristics: gender of respondents t_{162}=-0.385; p=0.701 (M_{male}=3.27; SD_{male}=0.91; M_{female}=3.33; SD_{female}=0.84); and employment status of respondents t_{162}=-1.854; p=0.066 ($M_{employed}$=3.19; $SD_{employed}$=0.84; $M_{unemployed}$=3.44; $SD_{unemployed}$=0.86).
The one-way ANOVA test revealed no statistically significant differences in respondents' ages F_{161}=2.117; p=0.124 ($M_{less\ than\ 25}$=3.40; $SD_{less\ than\ 25}$=0.87; $M_{25\text{-}35}$=3.15; $SD_{25\text{-}35}$=0.90; $M_{36\text{-}50}$=3.31; $SD_{36\text{-}50}$=0.86).
The conducted statistical analysis showed that there are no statistically significant differences in answers regarding gender, employment status, and age of respondents. They all have similar perceptions and attitudes regarding robots in the workplace.

5. Discussion of Research Findings and Recommendations

Ongoing technological advancements have accelerated the adoption and use of robots in the workplace (Kim, 2022; Turja & Oksanen, 2019). This study of students' perceptions and attitudes towards robots in the workplace is crucial for the future of work and job design. According to the findings presented in this paper, the key positive perceptions of students regarding robots in the workplace are as follows: robots can do dangerous jobs that humans cannot, robots can free humans from routine and monotonous jobs, and humans will have enough time to devote themselves to creative tasks. In general, most respondents are positive about the benefits of workplace robots.

Other studies on robots in the workplace also discovered that the majority of respondents are open to the use of robots in the workplace, as well as at the home (Kwanya, 2023). In general, robots are mostly used for physically demanding tasks (Gihleb et al., 2022). The key benefits of robots are assisting employees with routine tasks, providing ongoing services, taking on jobs considered unhealthy or dangerous for humans, and providing consistent quality of services (Kwanya, 2023). Results from an online survey conducted in 2020 among 263 students at the University of Novi Sad (Serbia), Department of Geography, Tourism, and Hotel Management, revealed that students have positive perceptions of the implementation of service robots in their future jobs due to the expected business outcomes (cost reduction, increased efficiency, revenue, market share, as well as fast, accurate, and consistent service) (Ivkov et al., 2020). Similarly to the findings presented in this paper, this research did not show positive sentiments towards constructs related to empathy and social influence of workplace robots (Ivkov et al., 2020). In another research, which took place between 2020 and 2021 and included 234 students from the University of Rijeka (Croatia) from technical, natural, and social sciences, results showed that the majority of students (156 of them) completely agree that it is more comfortable to have human relationships rather than relationships with robots. Likewise, 84 students believe that robots would perform less essential and significant tasks, while humans will perform more important and significant ones (Beletic & Vretenar, 2023). Similar results regarding students' perceptions as to workplace robots are obtained in studies conducted in other countries. For example, in the research conducted using semi-structured interviews in Turkey during 2021, 30 tourism students participated and expressed their attitudes toward working with service robots. The findings revealed that the majority of students are willing to work with or implement robots. They stated that the key advantages of workplace robots include doing repetitive, dirty, dull, and dangerous tasks, eliminating human issues (late for work, not fulfilling responsibilities), eliminating conflicts and problems between humans, being always available and fast, and eliminating the gap in communicating with guests in other languages (Seyitoglu et al., 2022).

Besides all reported benefits of workplace robots, more than half of the respondents (55.4%) that participated in this research cannot imagine themselves working alongside a robot. Furthermore, they reported some of the negative perceptions of robots in the workplace such as: feeling lonely when working with robots without people, robots not knowing how to react in some unexpected circumstances, and robots are not as flexible and mobile as humans. Humans can feel empathy and become attached to robots, but other studies have also shown that there are negative reactions to robots, such as intense feelings of oddity and a lack of social interaction (Savela et al., 2021). Furthermore, some respondents in other studies reported high levels of robot anxiety and negative attitudes toward robots, indicating a low willingness to accept and collaborate with robots (Bartneck et al., 2020). There are employees who distrust robots, viewing them as volatile, uncertain, complicated, and ambiguous (Kopp, Baumgartner, & Kinkel, 2021; Maddahi et al., 2021).

The percentage of the respondents who took a neutral attitude in this research on the statements regarding robots (both positive and negative) is also not insignificant. This percentage ranges from 12.2% to 37% of the respondents. That means the respondents are not well informed about robots and their characteristics, and that they did not form any opinion regarding this topic. The level of knowledge and understanding regarding workplace robots and all the impacts of working with them is significant for the formation of student attitudes. This was also proven by the research named "My Future Colleague Robot" conducted among interdisciplinary bachelor and master level higher education students (16 students participated, 9 males, 7 females, average age was 33). After a two-day workshop with robots, students demonstrated a better comprehension as well as a more welcoming and open attitude toward robots (Leoste et al., 2022). Similar findings were reported in an Italian study on the social representation of robots that included 422 young adults, 354 of whom were students. The results of the study showed that respondents who regard robots as constructed and integrated objects have positive attitudes and perceptions toward them and a higher level of acceptance of robots (Brondi et al., 2021).

The positive perceptions towards robots in the workplace can be explained by the fact that young people with advanced digital and technical skills are excited about and willing to accept change (Queiroz & Wamba, 2023). Both humans and robots have unique strengths and must collaborate as colleagues. Their collaboration is critical for the successful functioning of any organization (Sadangharn, 2022). Due to that, employers have a significant role in the acceptance of robots in the workplace. They are responsible for designing jobs so that robots can perform tasks that are dangerous to humans as well as routine and monotonous tasks. Furthermore, it is critical that employees understand all benefits of using robots, as well as their key characteristics, specifics, and capabilities, in order to feel safe and secure when surrounded by them. Employees who are primarily surrounded by robots at work should be provided with team building activities and socialization programs with other employees so that they do not feel lonely or isolated. Similarly, it is critical to raise awareness among employees that robots do not pose a threat to their jobs, but rather are there for assistance and support.

Conclusion

According to the findings of a survey conducted in the Republic of Serbia from January to March 2023 among 164 students from the economic field, most respondents believe that robots can do dangerous jobs that humans cannot, that robots can free humans from routine and monotonous jobs, and that humans will have more time for creative tasks. Robots in the workplace, on the other hand, will have some negative consequences. The majority of respondents agree that working with robots without people would make them feel lonely; robots would not know how to react in some unexpected circumstances; and they are not as flexible and mobile as humans.

This paper has several theoretical and practical implications. Theoretical implications include the fact that this is one among only few research works in the Republic of Serbia which addresses students' perceptions and attitudes regarding workplace robots and their possible effects. From the theoretical perspective, organizational behaviour and human resource management as scientific and applied disciplines may benefit from this research due to the key message that introducing advanced workplace robots exposes employees to a new situation that necessitates a better understanding and adjustment of the entire organization. The research findings and conclusions presented in this paper could enlarge the existing knowledge and make a significant contribution to a better understanding of students' attitudes towards robots. Furthermore, this research used a questionnaire, which was validated and proved as reliable, and which represents a sound basis for future research on this topic. In addirion to theoretical, there are several practical implications of this research. The research results emphasized both positive and negative perceptions, providing a valuable source of information for employers, decision makers, leaders, and managers on how to increase workplace acceptance of robots. As a result, the presented findings may be useful to organizations that plan to implement robotic systems. Managers and employers should focus on activities that promote Industry 5.0 and create a work environment in which robots are a natural phenomenon. Furthermore, human resource managers face a challenge because they must: identify jobs that will be performed by robots, integrate robots into the organization, and strategically plan and organize training in order to change potentially negative perceptions of employees and reduce their fear of losing jobs. The manager's concern is to motivate employees to continuously improve their skills and encourage their creativity and innovation in accordance with job requirements. Additionally, the acquisition of practical knowledge in the field of modern technology is crucial for the successful implementation of robotics systems in the modern workplace. Understanding how students perceive workplace robots may assist educators and policy makers to prepare them adequately for changing working conditions. Educational institutions may adapt and reinvent their curriculum in order to provide students with the knowledge and abilities required to effectively work with robots. Furthermore, this research's findings can help policy makers and regulators establish policies and regulations governing the integration of robotics in the workplace. Understanding students' concerns can help ensure the proper and ethical use of robotic technologies.

There are some limitations of this research. First, the questionnaire technique was used in the study, with respondents answering a series of closed questions and statements. As a result, there was no way to go deeper into personal impressions and perceptions of the use of robots in the workplace. Another limitation of the conducted research is that participants' responses were based on their perceptions and beliefs rather than actual experience. Respondents are still students with no real work experience with robots as colleagues in the workplace. Furthermore, the research was conducted in one country (Republic of Serbia), and that is why the results cannot be generalized to other countries due to country differences, as well as the overall level of technological and economic development.

Future studies should include more respondents from a larger number of countries and attempt to identify other factors that are important for working with robots in the workplace. One of the recommendations for future research on this topic is to enlarge the questionnaire by adding new questions and/or conducting interviews. Another suggestion is to observe and analyze the behaviour of employees in companies where they already work and collaborate with robots.

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