

THE USE OF ARTIFICIAL INTELLIGENCE IN CORPORATE DISTANCE LEARNING ATTITUDES OF THE UPCOMING WORKFORCE GENERATION

[1]Branka Zolak Poljašević, [2]Simona Šarotar Žižek

[1] Faculty of Economics, University of Banja Luka, [2] Faculty of Economics and Business,
University of Maribor

Abstract — Every new generation brings changes in the general characteristics of the workforce, reflected in different values, insights, expectations, and technological skills. The upcoming generations of the workforce are growing up in a digital environment, and information technology significantly determines their primary model of interpersonal communication, learning, and work values. They are also growing up in a time of increased application of artificial intelligence. Artificial intelligence is certainly changing the labour market, too, and its application is present in almost all processes of human resources management, including the training and development of employees. The main purpose of this research is to explore the attitudes of the upcoming generation of the workforce regarding distance learning and the use of artificial intelligence in the training and development of employees. A total of 238 respondents from Slovenia and Bosnia and Herzegovina participated in the research. Their attitudes were collected using a questionnaire created for this research, and hypotheses were tested by descriptive statistics, T-test, and ANOVA. The research results confirm the positive attitudes of Generation Z members toward contemporary training models. There is no statistically significant difference in the attitudes of the respondents from the observed countries, but there is a statistically significant difference in their expectations regarding the use of artificial intelligence in their future work. This paper contributes to the human resource management literature because it brings new knowledge about the attitudes and expectations of the next generation of the workforce, which employers can use as a guide for designing new and adapting existing employee training and development programs.

Index Terms — Artificial intelligence, distance learning, training and development, workforce generation

I. INTRODUCTION

Technology and the development of artificial intelligence bring new rules for organisations, and change organisational goals and business processes, including processes in human resource management. In general, the use of information and communication technologies reduces costs associated with human resources management activities [1, 2] reduces the administrative burden of this business function, and increases its efficiency and contributes to strategic management [1]. Especially significant changes are occurring in the field of employee training and development, which can be expressed in several ways. First of all, changes in technology lead to the rapid obsolescence of applicable knowledge. Therefore, continuous training of employees and the acquisition of new knowledge and values become an objective necessity. Another form of technology's impact is manifested through changes in the way employee training and development

programs are implemented in practice. In this context, it is worth noting the increasing prevalence of various forms of distance learning, as well as the growing influence of artificial intelligence on these processes. Artificial intelligence is a field of computer science that deals with the developing of intelligent systems and machines, which are capable to simulate or imitate intelligent behaviours, specifically human cognitive functions such as language understanding, learning, reasoning, problem-solving, planning, pattern recognition, and many other human abilities [3, 4]. Like any other technology, artificial intelligence has a huge potential to reshape work processes, including the training and development of employees. However, to be successful, training programs must be adapted to the age and qualification structure of employees who need training and to the values, knowledge, and skills that employees need to acquire. In this context, it is justified to explore the attitudes of different generational cohorts towards trends in employee training and development.

Contemporary business conditions are characterized by significant workforce diversification. Currently, several generations are considered in the work context, those are Baby Boomers, X, Y, and Z generations. The significance of each generation varies, according to their representation in the labour force. Generation Z is not still fully integrated into the labour market and is considered the upcoming generation of the workforce. This generation is a "product" of globalization and the new technological revolution. Although members of Generation Z share many characteristics with the Y or millennial generation, they also exhibit some entirely new behaviour patterns and a different attitude towards work. For example, they strive for greater autonomy, flexibility, diversity, community support in the workplace [5, 6], opportunities for career advancement, and alignment with the company's values and culture [7]. For young professionals, technology is an integral part of their lives, and accordingly, they expect technology to be an integral part of their work [8].

The main purpose of this paper is to examine the attitudes of the upcoming generation of the workforce regarding artificial intelligence and distance learning programs in the context of two countries. For this purpose, research was conducted on a sample of 135 students from Bosnia and Herzegovina and 103 students from Slovenia. The aim of the conducted empirical research is to acquire new empirical insights in this field and to provide an answer to the question of whether members of the upcoming workforce have a positive attitude towards distance learning and using artificial intelligence in corporate training and development programs, regardless of the country of origin. Data were collected in January 2024. In addition to descriptive statistics, T-tests and ANOVA were used to test hypotheses. As expected, the data analysis confirmed the positive attitudes of Generation Z towards the concept of distance learning and the application of artificial intelligence in modern forms of employee training and development. It is interesting to highlight that there is no statistically significant difference in the attitudes of respondents from different countries. This means that respondents, regardless of their country of origin, perceive the importance of modern technologies in the training and development processes in the same way. On the other hand, a statistically significant difference was found in the expectations of

respondents regarding the application of artificial intelligence in their future work, depending on the country they come from.

In addition to the introduction, the structure of this paper also includes a chapter that provides the theoretical background of the research, describing the option for employee distance learning and the impact of artificial intelligence on these processes. The following parts of the paper give insight into the research methodology, sample, and results of hypotheses testing. Finally, in the last segment of the paper discussion of the research results and conclusions are presented.

Theoretical Background

Learning or education is a process through which a person develops new knowledge, skills, and abilities which results in a permanent change in behaviour or personal transformation [9]. In organisations, the process of learning or educating employees takes place with different purposes. For example, through specific learning programs, employees are trained for their current job or some other related jobs. Also, training helps employees to expand their knowledge and thus adapt to possible changes in the job. There are also development programs, which include values and expanding the knowledge of employees to perform some more complex jobs in the future and adapting employees to future organisational needs. The development of technology has significantly changed the approach to employee learning programs [10]. Among other things, a greater application of various forms of distance learning is enabled [11].

Distance learning can be most simply defined as the use of information and communication technology in the learning process, which implies indirect interaction between participants in the training process. Distance learning is most often discussed in the context of the formal education system [12, 13, 14, 15], although the quantity of research focused on corporate distance learning programs is also increasing [16, 17]. Corporate distance learning programs are often considered in the context of the COVID-19 pandemic [18, 19].

Distance learning is a contemporary approach to the training and development of employees [20], and it can be encountered in different forms, which depend on the desired learning outcomes (specific values, knowledge, skills, or behaviour of employees). For example, there is increasing interest in the use of Massive Open Online Courses (MOOC), which has become a very popular approach for skill development, especially among the youth [21, 22]. Massive Open Online Courses (MOOCs) make a type of training intended for many participants because it is free of charge and accessible to everyone via the Internet. The low costs, accessibility, and wide range of topics make open online courses a very attractive method of employee training [23]. Online courses enable interaction among participants, as well as interaction between participants and instructors. Training is typically delivered through a combination of short lectures and the application of acquired knowledge through case studies, project tasks, role-playing, and similar activities. However, this type of training has certain disadvantages. For example, employees must have certain technological knowledge and skills that are needed to access open online courses, watch videos, and participate in online discussions. Previous experiences with open online courses

show that the interest of participants usually decreases after two weeks of following the courses [24, 25, 26, 27].

Social media are used in everyday life for interactive communication, creation, and exchange of digital content. Many organisations use social media for recruitment purposes [28, 29]. Furthermore, the potential of social media is increasingly used for formal and informal learning of employees, exchange of knowledge, networking of trainees before, during, and after training, and directing trainees to useful content on the Internet, such as webinars, educational videos, or useful blogs. Social media provide employees with the opportunity of self-learning through communication and establishing cooperation with other users of said media [30, 31, 32].

Mobile training is another variation of distance learning. This refers to training conducted using mobile devices such as smartphones, netbooks, laptops, or iPads, which allows training to take place anywhere and at any time. Mobile training can include both formal and informal learning [33]. Examples of formal learning include online courses, podcasts, or educational videos tailored for mobile devices. Informal learning refers to communication and exchanging messages with other employees or experts through social platforms and mobile devices. Mobile training is suitable for employees who perform the majority of their work outside the primary workplace [34], and for individuals who, due to the pace of life and work, do not have time to attend traditional forms of training. Mobile training can take place during the working day or at home, depending on personal preferences, possibilities, and capabilities. Additionally, employees can connect with learning communities and have the opportunity to learn at their own pace. This form of training is supported by numerous applications specifically designed for mobile devices. However, it is estimated that educational content of this type should not last longer than 10 minutes, as users most likely do not have long periods of learning. Additionally, the small screens on mobile devices limit attention to very short time intervals.

Gamification is the next form of distance learning. It involves the use of entertaining and motivational aspects of computer games to enable employees to acquire relevant knowledge and skills. One type of such game is branching stories that lead training participants into a virtual business world. To progress through the game, participants must take certain actions or make decisions [35, 36, 37]. The end of the game depends on the decisions made by the participants, allowing them to see the consequences of their decisions in an artificial environment without any actual risk. Contemporary technology also enables learning through virtual or augmented reality. Virtual reality is a computer technology that provides learners with a multi-dimensional learning experience. Such training methods have several positive aspects. For example, simulations and games are designed with a clear training objective, at the same time they are enjoyable for participants. This increases employees' willingness to learn and practice, encourages their active participation, improves skills, and enhances knowledge transfer. Gamification in the workplace increases motivation, and engagement, and improves work performance [38].

In general, distance learning has several advantages, both for the organisation and for employees. For example, employees can choose the type of media they want to use in training (video, audio

lectures, printed materials, etc.). Through the use of avatars, virtual reality, and simulations, the learning environment can resemble and sound like a real working environment. Employees gain control over training, as they can determine when and where they access the training. On the other hand, training administration (enrolment, testing, and evaluation) can be done automatically, saving a significant amount of time. Also, online training can reach a larger audience compared to traditional training programs.

The fourth and fifth industrial revolutions brought increased use of new technologies, which can be categorized under the field of artificial intelligence. Regarding human resource management artificial intelligence is most often implemented within existing human resource management systems, such as information systems, databases, decision support systems, internet applications, and so on [39, 40, 41].

Artificial intelligence additionally improves the previously described employee training methods. Among the main benefits of AI in corporate training, a particularly notable aspect is the personalized approach to learning. Artificial intelligence enables the personalization of training based on the needs, learning styles, and preferences of employees, as well as the individual knowledge, abilities, and performance of each participant [42, 43]. Additionally, artificial intelligence systems and tools can quickly adapt training programs to changes in the industry and adjust them to reflect the latest knowledge and skills required for successful job performance. It can also be emphasized that artificial intelligence accelerates the learning process, and makes learning more interactive [44] and engaging for participants, while automatic training evaluation and real-time feedback save time for managers. Generally, artificial intelligence contributes to the efficiency, personalization, and adaptability of training programs [45, 46].

Although modern technologies, including artificial intelligence and distance learning programs, have numerous advantages and offer a very new experience for participants, they do not offer a magical solution to all challenges that arise in the process of employee training and development. For example, human interaction and manager support in employees' motivation for learning cannot be replaced by advanced technologic. Additionally, distance learning programs and artificial intelligence tools are not equally accepted by all generations of employees [17]. Previous research shows that these types of training are most acceptable to generations Y and Z [47].

Generation Z is the "product" of globalization and the current technological revolution. It consists of young individuals born after 1995, who are currently becoming the active workforce. Although Generation Z shares many characteristics with the millennial generation, it also brings new behaviour patterns. This generation can be associated with the rapid advancement of information and communication technology, which is transforming organisations and the labour market. The members of this generation grow up in a digital environment. Consequently, information technology significantly determines their primary model of interpersonal communication, work, and life values. For them, virtual socializing without personal contact is common. As a result, there is an observed decrease in verbal communication skills, although they are highly skilled in communicating in the virtual world. Also, they seek employers whose working

conditions align with their values and lifestyle [7, 48, 49]. Given that members of Generation Z significantly differ from other generations, it is a major challenge for human resources managers to integrate this generation into the existing organisational systems. Therefore, it is justified to conduct empirical research aimed at gaining new insights into attitudes and job expectations of the upcoming workforce generation. More information about generation Z is there in Table 1.

Table 1: Characteristics of Generation Z

Characteristics	Generation Z (1996-2010); current age 14-28 years
Formative experiences	Economic recession; Global warming and focus; Mobile devices; Energy crisis; Arab Spring; Production of own media; Cloud computing; Wiki leaks; Parents glorify them
A typical product	Google Glass; 3D printing; Nano-computing, Driverless cars
General characteristics	Educated, globally aware, pragmatic, realistic, competitive, connected, socially responsible, self-reliant, determined, and open-minded
Appreciate	Security and stability and brands
Attitude towards technology	"Technoholics" - addicted to information technology; Limited understanding of alternatives; Digital natives; Tech savvy
Attitude towards career and work	Multitaskers - no problem to move between organisations and "pop-up" businesses; Job security; Pay raise
A medium of communication	Hand-held communication devices
Communication advantages	Quick information retrieval and facetime; Poor verbal, especially personal communication; »Communaholic«; Master of social media
Focused on	Turning a hobby into a business; Entrepreneurship and entertainment
It motivates them	Digitally connected 24/7, flexibility, flourish in a diverse workplace, express themselves with their own style
Work environment and management style	Foreseeing: a flexible working environment, the flexibility of jobs, and types of employment
Deficiencies	Less focused, short-term concentration, short-term memory, virtual life addiction
Qualities	Fiscally frugal, confident, resourceful, entrepreneurial, diverse, health-conscious, open-mind, international, ambitious, analytical, independent, internet experts

Source: [50, 51, 52,53, 54, 55, 56].

Methodology and Sample

Data about the attitudes of the upcoming generation of the workforce were collected using a questionnaire created for this research. Data were collected in January 2024. The questionnaire consists of three sections. The first section of the questionnaire refers to the sociodemographic characteristics of the respondents. The second section is designed to examine how familiar the respondents are with the concepts of distance learning and artificial intelligence. Finally, the third segment in the questionnaire investigates respondents' attitudes regarding their application of artificial intelligence in employee training and development. The questionnaire includes a combination of closed-ended questions and five-point scale items.

The questionnaire was filled out by students, i.e. young individuals that, according to their age, belong to Generation Z, and that will be fully integrated into the labour market in a few years. The research was simultaneously conducted in two countries, Slovenia and Bosnia and Herzegovina, which share a common socialist heritage but differ significantly in the degree of overall societal digitalization. The total number of respondents is 238, with 135 respondents from Bosnia and Herzegovina and 103 from Slovenia. The structure of the sample is shown in the Table 1.

Table 1. Structure of the sample in accordance with sociodemographic characteristics

Sample Characteristics	Bosnia and Herzegovina		Slovenia		Total	
	Freq	Percent	Freq	Percent	Freq	Percent
Sample size	135	56,72%	103	43,28%	238	100%
Gender structure						
Male	33	24,44%	35	33,98%	68	28,57%
Female	102	75,56%	68	66,02%	170	71,43%
Study Field						
Social Sc.	107	79,26%	74	71,84%	181	76,05%
Engineer. Sc.	13	9,36%	13	12,62%	26	10,92%
Natural Sc.	15	11,11%	16	15,54%	31	13,03%
Employment Status						
Employed	28	20,74%	52	50,49%	80	33,61%
Unemployed	107	79,26%	51	49,51%	158	66,39%

Source: Authors

The Table 1 shows a significantly higher representation of female respondents in the sample from both observed countries. Overall, female respondents participate in the sample with 71.43%. Regarding the field of study, there is a higher representation of respondents who study in the field of social and humanistic sciences. Taking into account both observed countries, this category of students constitutes 76.05% of the sample, while the rest are students studying in the field of natural and engineering sciences. In terms of employment, the structure of the sample differs

between the observed countries. For example, students without permanent, temporary, or occasional employment participate in the Bosnia and Hercegovina sample with 79.26%. On the other hand, in Slovenia, students with and without permanent, temporary, or occasional employment, are equally represented in the sample structure. Overall, students without permanent, temporary, or occasional employment participated in the sample with 66.39%.

The research was based on the assumptions expressed in the following hypotheses.

H1. Generation Z considers typical characteristics of distance learning as significant for the process of employee training and development.

H2. Generation Z has positive attitudes regarding the use of artificial intelligence in employee training and development.

H3. Generation Z attitudes regarding distance learning and the use of artificial intelligence in employee training and development do not differ among the observed countries.

H4. Generation Z's expectations regarding the use of artificial intelligence in their future work do not differ among the observed countries.

To test the hypotheses, descriptive statistics (mean and standard deviation), T-test, and ANOVA were applied. The data were processed using the statistical software SPSS.

Results

Distance learning is a concept that members of Generation Z know quite well. In the observed research sample, even 97.06% of respondents believe that they are familiar with the concept of distance learning, or that they have experienced a certain form of distance learning. The assessment of the significance of certain characteristics of distance learning (for example "Educational contents should be available via mobile devices, so participants can access them at any time and in any place") was conducted using a five-point scale items. The scale contains eight characteristic items, which were defined based on a literature review. The respondents expressed their attitudes using a five-level response scale, ranging from "not important at all" to "extremely important". The Table 2 shows the average-rated level of significance for typical characteristics of distance learning.

Table 2. Descriptive statistics regarding the significance of distance learning characteristic

	N	Mean	Std.Deviation
DL_Carachteristic_1	238	4.05	0.807
DL_Carachteristic_2	238	3.79	0.875
DL_Carachteristic_3	238	4.14	0.873
DL_Carachteristic_4	238	3.88	1.054
DL_Carachteristic_5	238	3.78	1.028
DL_Carachteristic_6	238	4.32	0.816
DL_Carachteristic_7	238	4.15	0.923

DL_Carachteristic_8	238	2.52	1.957
Valid N (listwise)	238		

Source: Authors

It can be observed that respondents, on average, consider most of the distance learning characteristics as significant, because their mean values are above the neutral midpoint. The distance learning characteristic with the highest level of significance (Mean value: 4.32) is the "possibility of communication between students and instructors via email, online discussions, forums, chats, or video calls". When considering the average-rated significance of all eight distance learning characteristics, analysis of variance has shown that there is no statistically significant difference among respondents of different gender (T-test: $F=1.391$, $p=0.239$, $p>0.05$), study field (ANOVA: $F=0.369$, $p=0.692$, $p>0.05$), or employment status (T-test: $F=2.708$, $p=0.101$, $p>0.05$). The results presented so far indicate confirmation of the first hypothesis.

For the assessment of the level of understanding of artificial intelligence, five-point item was also used. Respondents from Bosnia and Herzegovina assessed a lower level of understanding of the concept of artificial intelligence (2.98) compared to respondents from Slovenia (3.15). Still, this difference is not statistically significant (T-test: $F=0.077$, $p=0.782$, $p>0.05$). Overall, less than half of the respondents (45.38%) had the opportunity to learn how to use artificial intelligence. At the same time, a large percentage of respondents (86.97%) believe that all students, regardless of their field of study, should learn about artificial intelligence.

Even though less than half of the respondents (43.28%) are familiar with the possibilities of applying artificial intelligence in the process of employees training and development, in the further phase of the data analysis we tested whether the respondents have positive attitudes regarding the application of artificial intelligence in employees training and development. Attitudes of respondents were examined with two five-point scales. The first scale, consisting of 9 items, was created to assess the significance of various possibilities for the application of artificial intelligence in training and development programs. The respondents expressed their attitudes using a five-level response scale, ranging from "not important at all" to "extremely important". The second scale contains 10 statements regarding the usage of artificial intelligence tools in the process of training and development of employees. Seven items are positive (for example "AI has the potential to make revolutionary progress in the process of training and development of employees"), while three statements are negative (for example "AI costs too much and delivers little to the process of employee training and development"). The respondents expressed their attitudes using a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree". Before statistical data processing, positive and negative statements were reconciled. See Table 3.

Table 3. Descriptive statistics regarding the significance of possible application of AI in the training and development programs

	N	Mean	Std.Deviation
AI_ApplicationAspect_1	238	3.80	0.885

AI_ApplicationAspect_2	238	4.05	0.845
AI_ApplicationAspect_3	238	4.14	0.933
AI_ApplicationAspect_4	238	4.15	0.882
AI_ApplicationAspect_5	238	3.74	0.998
AI_ApplicationAspect_6	238	3.74	0.926
AI_ApplicationAspect_7	238	3.87	0.935
AI_ApplicationAspect_8	238	3.94	0.893
AI_ApplicationAspect_9	238	3.89	0.960
Valid N (listwise)	238		

Source: Authors

It can be observed that respondents, on average, consider all items as significant, because their mean values are above the neutral midpoint. Items with the highest degree of significance (Mean values 4.14 and 4.15) are the following: "AI-powered chat-bots and virtual assistants can provide employees with 24/7 support and guidance" and "AI can be used to translate training materials and other learning resources into different languages and forms".

When considering the average-rated significance of all nine items, analysis of variance has shown that there is no statistically significant difference among respondents of different gender (T-test: $F=0.906$, $p=0.342$, $p>0.05$), neither among respondents with different employment statuses (T-test: $F=1.981$, $p=0.161$, $p>0.05$). Also, there is no statistically significant difference in the attitudes of respondents who are familiar with the possibility of applying artificial intelligence in the process of training and development of employees, compared to respondents who are not familiar with such possibilities of artificial intelligence (T-test: $F=3.404$, $p=0.066$, $p>0.05$). See Table 4.

Table 4. Descriptive statistics regarding the use of AI in the training and development programs

	N	Mean	Std.Deviation
AI_in_training_Attitudes_1	238	3.79	0.907
AI_in_training_Attitudes_2	238	3.72	0.927
AI_in_training_Attitudes_3	238	3.69	0.921
AI_in_training_Attitudes_4	238	3.87	0.993
AI_in_training_Attitudes_5	238	3.20	1.067
AI_in_training_Attitudes_6	238	3.52	0.949
AI_in_training_Attitudes_7	238	2.63	1.062
AI_in_training_Attitudes_8	238	3.70	1.072
AI_in_training_Attitudes_9	238	2.61	1.335
AI_in_training_Attitudes_10	238	3.12	1.326
Valid N (listwise)	238		

Source: Authors

On average, the level of agreement of respondents with the statements has a higher value than the neutral mean. As the negative statements were previously reconciled with the positive statements, these results indicate a positive attitude of the respondents regarding the application of artificial intelligence in employee training and development.

When considering the average-rated agreement with all ten statements about the application of artificial intelligence in employee training and development, analysis of variance has shown that there is no statistically significant difference among respondents of different gender (T-test: $F=0.302$, $p=0.583$, $p>0.05$), study field (ANOVA: $F=0.738$, $p=0.479$, $p>0.05$), or employment status (T-test: $F=0.467$, $p=0.495$, $p>0.05$). Also, there is no statistically significant difference in the attitudes of respondents who are familiar with the possibility of applying artificial intelligence in the process of training and development of employees, compared to respondents who are not familiar with such possibilities of artificial intelligence (T-test: $F=3.601$, $p=0.059$, $p>0.05$). The results presented above indicate confirmation of the second hypothesis.

In the third phase of the analysis, the difference in attitudes of students from the two observed countries was examined. To test this hypothesis, a T-test was applied. The results are presented in Table 5.

Table 5. Distance learning and AI attitudes - differences between observed countries

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
DL_Characteristic_Average	Equal variances assumed	1.365	0.244	7.273	236
	Equal variances not assumed			7.428	232.965
AI_Applicat Aspect_Average	Equal variances assumed	1.569	0.212	1.870	236
	Equal variances not assumed			1.939	235.999
AI_in_Training_Attitudes_Average	Equal variances assumed	2.501	0.115	0.375	236
	Equal variances not assumed			0.383	233.113

Source: Authors

Since students from two countries participated in the study, the T-test is a suitable statistical tool to determine if there is a significant difference in the attitudes between these two groups of respondents. The difference in responses was tested in three groups of data: (1) Average-rated significance of eight distance learning characteristics, (2) Average-rated significance of nine

possible applications of AI in the training and development programs, and (3) Average-rated agreement with ten statements about application of artificial intelligence in training and development programs. Results of the analysis show that there is no statistically significant difference in the attitudes of respondents from different countries. These results confirm the third hypothesis.

In the last segment of the analysis, the expectations of the students regarding the use of artificial intelligence in their future work were examined. Some descriptive data and results of the T-test are shown in the Tables 6 and 7.

Table 6. Descriptive data regarding student expectation

	Bosnia and Herzegovina	Slovenia
Percentage of respondents who expect to use certain AI tools in training and development processes in their future job	74,07%	84,46
Percentage of respondents who consider the application of AI tools in the process of training and development as a factor of employer attractiveness	52,59%	67,96%
Percentage of respondents who are willing to change jobs if another employer offers them training programs guided by modern technology and the possibility of career development	72,59%	61,16%
Percentage of respondents who are ready to use AI tools for learning and development to increase their value in the labour market	83,70%	74,76%

Source: Authors

Table 7. Student expectation - differences between observed countries

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
AI_Expecta- tion	Equal variances assumed	12.196	0.001	-1.687	236
	Equal variances not assumed			-1.726	233.568
AI_Factor Attrac	Equal variances assumed	17.217	0.000	-2.480	236
	Equal variances not assumed			-2.501	225.781

AI_Change Job	Equal variances assumed	10.671	0.001	1.744	236
	Equal variances not assumed			1.725	209.936
AI_Learn After Employ	Equal variances assumed	13.762	0.000	1.866	236
	Equal variances not assumed			1.821	196.694

Source: Authors

Results of descriptive analysis indicate a difference in the expectations of respondents among the observed countries, and the results of the T-test indicate that these observed differences are statistically significant ($p < 0.05$). The percentage of students who expect to use certain artificial intelligence tools in training and development processes in their future jobs and who consider this as a factor of employer attractiveness is significantly higher in Slovenia compared to Bosnia and Herzegovina. On the other hand, the percentage of students willing to use artificial intelligence tools for learning and development to increase their value in the labour market is significantly higher in Bosnia and Herzegovina. Also in this country, students are more ready to change jobs if another employer offers them training programs guided by modern technology and the possibility of career development. The analysis results are not sufficient to confirm the fourth hypothesis.

Discussion and Conclusions

Training and development of employees offers the most significant activities of human resource management. Their importance can be justified in the context of changes, which represent the only certain constant in contemporary business [57]. Especially significant are technological changes that lead to the faster obsolescence of applicable knowledge and a shift in the required skills of employees. Educational systems often cannot keep up with these changes, transferring the burden of employee training onto employers [58]. In such business conditions, many organisations recognize that continuous training and development of employees are very important to their survival and growth. Knowledge has become the most crucial factor that makes a difference between successful and unsuccessful organisations [59]. So are values – accepting or refusing novelties, etc. When it comes to the labour market, the training and development of employees play a key role in attracting and retaining talent [60]. In contemporary business, employee training and development programs become an effective instrument for employer branding, that is aimed at creating a positive image of the organisation as an excellent place for work and career development.

The development of technology affects all human resource management activities, including employee training and development. For example, the development of information and communication technology has enabled a greater presence of various forms of distance learning. In recent years, artificial intelligence has taken a large part in theoretical considerations, but also in contemporary business practice. Artificial intelligence has the potential to significantly change

the current way of performing work processes, including training and development processes. The integration of artificial intelligence into employee training and development processes contributes to the optimization of the learning process [45, 61] and more efficient utilization of available resources. It also contributes to the adaptation of training and development programs according to the individual needs of employees.

In the future, we can expect an increasing level of integration between traditional training and development approaches and new approaches based on artificial intelligence, which may not be equally acceptable for all generations of employees. The results of this research have shown that the upcoming generation of the workforce considers distance learning and artificial intelligence as significant factors in learning processes. Furthermore, they have positive attitudes regarding the use of artificial intelligence in employee training and development. Such results are expected and consistent with the findings of similar studies conducted earlier [62, 63, 64, 65, 66], although these studies are mainly focused on the general learning process rather than employee training and development process.

This research contributes to the human resource management literature by presenting empirical data regarding the attitudes and also expectations of the upcoming workforce regarding the integration of modern technologies into training and development programs. The limitations of this study are reflected in the relatively small research sample and the use of simple statistical techniques to identify differences among the observed countries.

In terms of further research, it would be useful to expand the research sample and conduct a more complex sociological study to get deeper insights into the job perception of the upcoming workforce generation. This kind of empirical research has great value and contributes to solving the problem of attracting and retaining young talents in the organisation, which currently one of the major problems in the practice of human resources management.

REFERENCES

- [1] Dulebohn, J.H. & Johnson, R.D. (2013). Human Resource Metrics and Decision Support: A Classification Framework. *Human Resource Management Review*, 23, 71-83. <https://doi.org/10.1016/j.hrmr.2012.06.005>.
- [2] Strohmeier, S. (2007). Research in e-HRM: Review and Implications. *Human Resource Management Review*, 17, 19-37. <https://doi.org/10.1016/j.hrmr.2006.11.002>.
- [3] Budhwar, P., Malik, A., De Silva, T. & Thevisuthan, P. (2022). Artificial intelligence - Challenges and opportunities for international HRM: A review and research agenda. *The International Journal of Human Resource Management*, 33(6), 1065-1097. <https://doi.org/10.1080/09585192.2022.2035161>.
- [4] Das, S., Dey, A. & Roy, N. (2015). Applications of Artificial Intelligence in Machine Learning: Review and Prospect. *International Journal of Computer Applications*, 115(9), 975-987. <https://doi.org/10.5120/20182-2402>.

- [5] Pichler, S., Kohli, C. & Granitz, N. (2021). DITTO for Gen Z: A framework for leveraging the uniqueness of the new generation. *Business Horizons*, 64(5), 599-610. <https://doi.org/10.1016/J.BUSHOR.2021.02.021>.
- [6] Pandita, D. (2022). Innovation in talent management practices: creating an innovative employer branding strategy to attract generation Z. *International Journal of Innovation Science*, 14(3/4), 556-569. <https://doi.org/10.1108/IJIS-10-2020-0217>.
- [7] Gabriellova, K. & Buchko, A.A. (2021). Here comes Generation Z: Millennials as managers. *Business Horizons*, 64(4), 489-499. <https://doi.org/10.1016/j.bushor.2021.02.013>.
- [8] Honkatukia, P. & Lähde, M. (2020). Navigating towards sustainable working life - young people imagining the technologised future of work. *Journal of Youth Studies*, 24, 1199-1214. <https://doi.org/10.1080/13676261.2020.1820971>.
- [9] Mezirow, J. (1977). Personal transformation. *Studies in Adult Education*, 9(2), 153-64.
- [10] Rahmani, A., Ehsani, A., Mohammadi, M., Mohammed, A., Karim, S. & Hosseinzadeh, M. (2021). A new model for analyzing the role of new ICT-based technologies on the success of employees' learning programs. *Kybernetes*, 51, 2156-2171. <https://doi.org/10.1108/k-02-2021-0164>.
- [11] Bagshaw, M. & Bagshaw, C. (2002). Radical self-development – a bottom up perspective. *Industrial and Commercial Training*, 34, 194-199. <https://doi.org/10.1108/00197850210437120>.
- [12] Seo, K., Tang, J., Roll, I., Fels, S. & Yoon, D. (2012). The impact of artificial intelligence on learner–instructor interaction in online learning. *International Journal of Educational Technology in Higher Education*, 18(54). <https://doi.org/10.1186/s41239-021-00292-9>
- [13] Foo, C., Cheung, B. & Chu, K. (2012). A comparative study regarding distance learning and the conventional face-to-face approach conducted problem-based learning tutorial during the COVID-19 pandemic. *BMC Med Educ*, 21, 141. <https://doi.org/10.1186/s12909-021-02575-1>.
- [14] Morgan, H. (2020). Best Practices for Implementing Remote Learning during a Pandemic. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 93(3), 134-140. <https://doi.org/10.1080/00098655.2020.175148>.
- [15] Lee, K. (2020). Who opens online distance education, to whom, and for what? *Distance Education*, 41(2), 186-200. <https://doi.org/10.1080/01587919.2020.1757404>.
- [16] Alfaqiri, A., Noor, S. & Sahari, N. (2022). Framework for Gamification of Online Training Platforms for Employee Engagement Enhancement. *International Journal of Interactive Mobile Technologies*, 16(6), 159-175. <https://doi.org/10.3991/ijim.v16i06.28485>.
- [17] Polushkina, A. (2021). Information technologies in corporate training: trends and approaches. *RUDN Journal of Informatization in Education*. 18(3), 238-247. <https://doi.org/10.22363/2312-8631-2021-18-3-238-247>.
- [18] Shahriar, S.H.B., Arafat, S., Islam, I., Nur, J.M.E.H., Rahman, S., Khan, S.I. and Alam, M.S. (2023a). The emergence of e-learning and online-based training during the COVID-19

- crisis: An exploratory investigation from Bangladesh. *Management Matters*, 20(1), 1-15. <https://doi.org/10.1108/MANM-01-2022-0007>.
- [19] Bondar, I., Gumenyuk, T., Horban, Y., Karakoz, O. & Chaikovska, O. (2021). Distance e-learning in the system of professional development of corporation managers: Challenges of Covid-19. *Journal of Education and E-Learning Research*, 7(4), 456-463. <https://doi.org/10.20448/JOURNAL.509.2020.74.456.463>.
- [20] Ananchenkova, P., Goryainov, A. & Tonkonog, V. (2019). Distance learning as the professional development tool of employees under the company staff policy. *eLearning and Software for Education*. <https://doi.org/10.12753/2066-026x-19-117>
- [21] Ong, D. & Jambulingam, M. (2016). Reducing employee learning and development costs: the use of massive open online courses (MOOC). *Development and Learning in Organizations*, 30, 18-21. <https://doi.org/10.1108/DLO-08-2015-0066>.
- [22] Shahriar, S.H.B., Akter, S., Sultana, N., Arafat, S. and Khan, M.M.R. (2023b). MOOC-based learning for human resource development in organizations during the post-pandemic and war crisis: A study from a developing country perspective. *Journal of Research in Innovative Teaching & Learning*, 16(1), 37-52. <https://doi.org/10.1108/JRIT-09-2022-0054>.
- [23] Yan, Z. (2022). Construction and Application of Vocational Training Platform for Enterprise Employees. *Mobile Information Systems*. <https://doi.org/10.1155/2022/4091808>.
- [24] Hamori, M. (2019). MOOCs at work: what induces employer support for them? *The International Journal of Human Resource Management*, 32(1), 4190-4214. <https://doi.org/10.1080/09585192.2019.1616593>.
- [25] Park, S., Jeong, S. & Ju, B. (2018). Employee learning and development in virtual HRD: focusing on MOOCs in the workplace. *Industrial and Commercial Training*, 50(5), 261-271. <https://doi.org/10.1108/ICT-03-2018-0030>.
- [26] Baturay, M.H. (2015). An overview of the world of MOOCs. *Procedia - Social and Behavioral Sciences*, 174, pp. 427-433. <https://doi.org/10.1016/j.sbspro.2015.01.685>.
- [27] Dodson, M.N., Kitburi, K. & Berge, Z.L. (2015). Possibilities for MOOCs in Corporate Training and Development. *Performance Improvement*, 54(10), 14-21. <https://doi.org/10.1002/pfi.21532>.
- [28] Rehman, S., Ullah, A., Naseem, K., Elahi, A. & Erum, H. (2022). Talent acquisition and technology: A step towards sustainable development. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.979991>.
- [29] Hosain, S. (2023). Integration of social media into HRM practices: a bibliometric overview. *PSU Research Review*, 7(1), 51-72. <https://doi.org/10.1108/PRR-12-2020-0039>.
- [30] Roberts, G. & Sambrook, S. (2014). Social networking and HRD. *Human Resource Development International*, 17(5), pp. 577-587. <https://doi.org/10.1080/13678868.2014.969504>.
- [31] Li, J. (2013). Web-based technology and the changing landscape of HRD. *Human Resource Development International*, 16(3), 247-250. <https://doi.org/10.1080/13678868.2013.799401>

- [32] Kaplan, A. & Haenlein, M. (2010). Users of the world unite! The challenges and opportunities of social media. *Business Horizons*, 53, 59-68. <https://doi.org/10.1016/j.bushor.2009.09.003>.
- [33] Sharples, M. & Roschelle, J. (2010). Guest Editorial: Special Section on Mobile and Ubiquitous Technologies for Learning. *IEEE Transactions on Learning Technologies*, 3(1), 4-6. <https://doi.org/10.1109/TLT.2010.7>.
- [34] Jahnke, I., Lee, Y., Pham, M., He, H. & Austin, L. (2020). Unpacking the Inherent Design Principles of Mobile Microlearning. *Technology, Knowledge and Learning*, 25, 585–619. <https://doi.org/10.1007/S10758-019-09413-W>.
- [35] Henriksen, T.D. & Børjesen, K. (2016). Can good leadership be learned through business games? *Human Resource Development International*, 19(5), pp. 388-405. <https://doi.org/10.1080/13678868.2016.1203638>.
- [36] Evans, P. (2014). Exploring the relationship between discourse and a practice perspective on HRD in a virtual environment; *Human Resource Development International*, 17(2), 183-202. <https://doi.org/10.1080/13678868.2014.886889>.
- [37] Sitzmann, T. (2011). A meta-analytic examination of the instructional effectiveness of computer-based simulation games. *Personnel Psychology*, 64(2), 489-528. <https://doi.org/10.1111/j.1744-6570.2011.01190.x>
- [38] Larson, K. (2020). Serious Games and Gamification in the Corporate Training Environment: a Literature Review. *TechTrends*, 64, 319-328. <https://doi.org/10.1007/s11528-019-00446-7>.
- [39] Ćormarković, T., Dražeta, L. & Njeguš, A. (2022). The levels of artificial intelligence application in human resource systems. *The European Journal of Applied Economics*, 19(2), pp. 28-42. <https://doi.org/10.5937/ejae19-39535>.
- [40] Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A. & Trichina, E. (2021). Artificial intelligence, robotics, advanced technologies and human resource management: A systematic review. *The International Journal of Human Resource Management*, 33(6), 1237-1266. <https://doi.org/10.1080/09585192.2020.1871398>.
- [41] Luo, X., Tong, S., Fang, Z. & Qu, Z. (2019). Frontiers: Machines vs. humans: The impact of artificial intelligence chatbot disclosure on customer purchases. *Marketing Science*, 38(6), 937-947. <https://doi.org/10.1287/mksc.2019.1192>
- [42] Maity, S. (2019). Identifying opportunities for artificial intelligence in the evolution of training and development practices. *Journal of Management Development*, 38(8), 651-663 <https://doi.org/10.1108/JMD-03-2019-0069>.
- [43] Huang, M. & Rust, R. (2018). Artificial Intelligence in Service. *Journal of Service Research*, 21, 155-172. <https://doi.org/10.1177/1094670517752459>.
- [44] Grönman, J., Saarivirta, M., Aaltonen, T. & Kerminen, T. (2021). Review of Artificial Intelligence Applications in the ROS Ecosystem. 44th International Convention on Information, Communication and Electronic Technology (MIPRO), 1149-1153. <https://doi.org/10.23919/mipro52101.2021.9596787>.

- [45] Guan, Y. (2021). Application of Artificial Intelligence Technology in Social Training. 3rd International Conference on Artificial Intelligence and Advanced Manufacture. October, 2012, p. 1857-1860. <https://doi.org/10.1145/3495018.3495501>.
- [46] Powers, D. (1992). On Learning about Learning. *Intelligence\sigart Bulletin*, 3, 17-19. <https://doi.org/10.1145/130836.1063175>.
- [47] Chaudhuri, S. (2019). The Millennial Mindset: Unraveling Fact from Fiction. *Human Resource Development International*, 22(2), 210-212. <https://doi.org/10.1080/13678868.2018.1487154>.
- [48] Dolot, A. (2018). The characteristics of Generation Z. *E-mentor*, 74(2), 44-50. <https://doi.org/10.15219/em74.1351>.
- [49] Iorgulescu, M.C. (2016). Generation Z and its perception of work. *Cross-Cultural Management Journal*, 18(01), 47-54.
- [50] AARP (2007). Leading a Multigenerational Workforce (2007). In (pp. 7-17). http://assets.aarp.org/www.aarp.org_/articles/money/employers/leading_multigenerational_workforce.pdf
- [51] Goldman, K. D., & Schmalz, K. J. (2006). Builders, boomers, busters, bridgers: Vive la (generational) difference! *Health Promotion Practice*, 7(2), 159-161. doi: 10.1177/1524839906286595.
- [52] Hammill, G. (2005). Mixing and managing four generations of employees. *FDU Magazine online*, 12(2), 5-15.
- [53] Lockwood, N., Cepero, F., & Williams, S. (2009). The multigenerational workforce: opportunity for competitive success. *Society for Hum Resour Manag*, 1, 1-10.
- [54] Morgan, A., & Lynch, C. (2008). Leading & Motivating a Multi-Generational Workforce. http://leadstar.us/pdfs/leading_motivatiing_a_multi.pdf
- [55] Rich, P. (2007). Engaging the Multi-Generational Workforce. http://www.hrmreport.com/article/Engaging-theMulti-generational_Workforce?
- [56] Scheef, D., & Thielfoldt, D. (2004). What you need to know about mentoring the new generations. Article adapted from workshop “Engaging the Generations,
- [57] Downey, L. (2017). To innovate is to survive: Insight from human survival to innovation. *IEEE Engineering Management Review*, 45(2), 37-40. <https://doi.org/10.1109/EMR.2017.2701514>.
- [58] Ilić, G. & Zolak Poljašević, B. (2013). Unapređenje kvaliteta radne snage u funkciji smanjenja strukturne nezaposlenosti u Republici Srpskoj. *Acta Economica*, 11(9), 43-66. <https://doi.org/10.7251/ACE1319043I>.
- [59] Spiro, C.L. (2018). Creating a Learning Organization. In: *From Bench to Boardroom*. Copernicus, Cham. https://doi.org/10.1007/978-3-319-64155-3_8.
- [60] Badrinath, V. (2016). Further Education and Training, Retraining: Skilful India – A Dream or Reality. In: Pilz, M. (eds) *India: Preparation for the World of Work*. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-08502-5_12.

- [61] Zhou, Z. (2019). Abductive learning: towards bridging machine learning and logical reasoning. *Science China Information Sciences*, 62, 7610
- [62] Sabirova, F., Gura, A., Belyanova, E. & Sukhorukih, A. (2022). Distance education in a digital age. *World Journal on Educational Technology: Current Issues*. 14(5), 1415-1427. <https://doi.org/10.18844/wjet.v14i5.8051>.
- [63] Androshchuk, I., Banit, O., Shtepura, A., Rostoka, M. & Cherevychnyi, G. (2022). Modern Information and Educational Environment in the Context of the Theory of Generations. *International Journal of Pedagogy, Innovation and New Technologies*. 9(1), 54-62, <https://doi.org/10.5604/01.3001.0016.2095>.
- [64] Hernández-de-Menéndez, M., Diaz, C., & Morales-Menéndez, R. (2020). Educational experiences with Generation Z. *International Journal on Interactive Design and Manufacturing*, 14, 847-859. <https://doi.org/10.1007/s12008-020-00674-9>.
- [65] Statnickė, G., Savanevičienė, A. & Šakys, I. (2019). The Relationship between Work Engagement of Different Generations and Mobile Learning. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*. 67(6), 1627-1642. <https://doi.org/10.11118/actaun201967061627>.
- [66] Persada, S., Miraja, B. & Nadlifatin, R. (2019). Understanding the Generation Z Behavior on D-Learning: A Unified Theory of Acceptance and Use of Technology (UTAUT) Approach. *International Journal of Emerging Technologies in Learning*, 14(05), 20-33. <https://doi.org/10.3991/IJET.V14I05.9993>.