

A MODEL FOR USING CHATGPT IN ATTRACTING AND SELECTING HUMAN RESOURCES

Miroslava Peicheva¹
e-mail: mpeicheva@unwe.bg

Abstract

Technologies are critical to professional success, regardless of our attitude toward them. Digital agility is becoming a leading competency of HR professionals. Expertise in conducting interviews in Microsoft Teams and/or organizing online team meetings is no longer enough. One of the study's main results is that the use of ChatGPT increases the efficiency of the attraction and selection process. The conducted experiment proves that ChatGPT is useful only when the one who uses it has fundamental knowledge of the issues sought in ChatGPT.

Keywords: chatGPT, artificial intelligence, attracting and selecting, risk

JEL: M50, O33

Introduction

The attitude towards artificial intelligence is at both extremes – optimistic and pessimistic. The truth is probably somewhere between them. Since November 2022, when ChatGPT was launched, there have been discussions „for“ and „against“ its use. There are views that „Artificial Super Intelligence (ASI) will surpass human intelligence in all aspects – from creativity, to general wisdom, to problem-solving. Machines will be capable of exhibiting intelligence that we haven't seen in the brightest amongst us.“ (Jajal, 2018). Elon Musk warns that „artificial intelligence is our biggest existential threat“ (The Guardian, 2014). Similar is the attitude of Stephen Hawking (Cellan-Jones, 2014), who believes that an intelligence that surpasses the human can lead to the extinction of the human race.

Another risk associated with the use of artificial intelligence is that „It learns on the basis of human biases, which implies elements of discrimination.“ (Ivanova, Antonova, 2021, p. 381).

The results of various studies show that men have a more positive attitude towards artificial intelligence. People with higher education and younger people also have a positive attitude towards artificial intelligence (Bergdahl, et al., 2023, p. 2).

¹ Prof., PhD, Department of Human Resources and Social Protection, Faculty of General Economics, University of National and World Economy, Bulgaria

Despite differing opinions, artificial intelligence continues to change our daily lives. Its use is already a fact in the activity of human resources, internal audit, accounting, financial audit, data analysis and others.

For example, CaseWare uses AI for data testing, Microsoft PowerBI has built-in AI for data processing, and MindBridge AI Auditor is a platform that uses AI for risk analysis (Philipova, 2021, p. 8, 9).

The use of artificial intelligence undoubtedly has its advantages. In the activity of attracting and selecting human resources (and not only there), artificial intelligence processes big data with great speed. Speed is also essential when making predictions based on data analysis. Artificial intelligence also reduces the burden on HR experts by performing their routine duties.

The use of artificial intelligence has its advantages, but also brings risks. „One of the most difficult tasks is the risk that is associated with the technology of artificial intelligence in the process of recruitment and selection of employees“ (Gayathri, Majini Jes Bella, p. 43).

„Incorrect or not completely correct data, as well as a wrong and inappropriate algorithm can lead to incorrect and misleading decisions or forecasts.“ (Boyanov, 2021, p. 139). To manage this risk in the scientific literature, we also find a „Model Program/Questionnaire with sample focuses for auditing Artificial Intelligence“ (Dineva, 2022, p. 115).

The data showing that „Eighty percent (80%) of the organizations do not actively monitor their production models for justice and ethics“ (Dineva, 2023, p. 338) are also worrying.

In this article, a model for using ChatGPT in the process of attracting and selecting human resources is proposed. An analysis of the risks of using ChatGPT in the model was also done.

Research methodology

Review of literature

For the effective use of ChatGPT in the attraction and selection of human resources, its essence must be known. The creators of ChatGPT OpenAI define it as an artificial intelligence chatbot.

Given the definition of the creators of ChatGPT as well as for the purposes of the study, it is appropriate to define the concepts of chatbot and artificial intelligence.

„Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.“ (IBM, n.d.).

Chatbots are computer programs that maintain a conversation with the user. They understand the user's intentions and answer questions asked by the user.

Traditional chatbots follow a predetermined set of responses and directions. Traditional chatbots use a decision tree framework to interact directly with the user. When the user asks a question, the chatbot first goes through the rules repository to find the correct answer. These repositories contain frequently asked questions and defined answers to them, which are searchable through keywords. It relies on predefined defined answers and keywords.

Chatbots that are powered by artificial intelligence rely on machine learning models. What is characteristic of it is that this type of chatbot learns from interaction with users. The more questions it is asked, the better it gets because he improves every time. AI Chatboots rely on NLP and Machine learning.

„ChatGPT is an artificial intelligence (AI) chatbot that uses natural language processing to create humanlike conversational dialogue. The language model can respond to questions and compose various written content, including articles, social media posts, essays, code and emails“ (Hetler, 2023).

In relation to the use of ChatGPT, some studies state that „ChatGPT can collect and analyse data to form text responses to online messages, using ChatGPT to engage with candidates and reply to messages in real time“ (Zang, 2023, p. 41).

Various companies have started offering smart software. „The chatbot offers the opportunity to conduct digital interviews, using AI to assess candidates' word choices, speech patterns and facial expressions to assess their suitability for the role and even the organization and its culture.“ (Peicheva, 2021, p. 8).

Applicant tracking systems (Peicheva, 2022, p. 8) also introduced the use of artificial intelligence in the attracting and selection process, and data analysis of this process.

Recommendations related to the use of artificial intelligence in recruitment and selection most often relate to the creation of job descriptions and the formulation of questions to candidates. This is useful for selection experts. I believe that a systematic approach that shows how artificial intelligence can be used from the beginning to the end of the process and what risks it poses would be more useful for the recruiters.

Methods

The main goal of the research is to develop a model for using ChatGPT in the process of attracting and selecting human resources.

The model will help recruiters use the logical sequence of the traditional recruitment model, rather than randomly ask individual ChatGPT questions related to the process. The model adds value to the recruitment and selection process, not only by shortening the process time, but also by providing information from

various sources, some of which may not be known to the recruiter. For example, surveys, research related to compensation analysis that recruiters do not have and/or do not think they can use.

The tasks to achieve the goal are: to use the method of analogy with the traditional process for attracting and selecting human resources; to test the developed model in the ChatGPT platform; to analyze some risks of using ChatGPT in the process of attracting and selecting human resources and to draw basic conclusions.

The object of the study is the process of attraction and selection in ChatGPT. The subject of the study is the relationship between the traditional process of attracting and selecting human resources and ChatGPT.

To create the model for using ChatGPT in recruitment and selection, the method of analogy with the traditional process of recruitment and selection was applied. For traditional stages in the process of attraction and selection, the following are accepted: analysis of the vacant position, analysis of the external international labor market, analysis of the national labor market, analysis of the internal labor market, definition of the budget for the position, defining the budget for the process, determination of application documents for the vacant position (or using a company form), advertising the vacancy, evaluating the documents of the applicants, writing letters to the unsuccessful candidates, choosing a selection method for selecting the candidates, preparing interview questions, evaluating the candidates, making a final decision, informing the unsuccessful candidates, writing a proposal to the candidate. (Stefanov, Peicheva, 2018, pp. 153-162, 169-174).

Limitations of the study. The study did not analyze the internal labor market. The ChatGPT user is assumed to have selected the foreign labor market. Not all responses of ChatGPT will be analyzed. The proposed model does not intend to advertise ChatGPT to make candidate selection decisions based on ChatGPT's decision. The model shows the possibilities of matching an independent opinion (ChatGPT's opinion) with the opinion of the expert.

In the present article, part of the results obtained from the conducted research will be presented.

Results

The traditional recruitment and selection process involves several actors involved in different stages of the process. In the conventional method, the time of attraction and selection takes hours, or days (different, depending on the rules and procedures of the organizations).

Often, in the traditional process, analysis is limited to the organization, which poses risks to its competitiveness. Benchmarking is rarely used in the traditional

process because it is expensive and/or time-consuming, but it is essential to the process.

The author's proposed model, which includes the use of ChatGPT in the recruitment and selection process of human resources, allows one human resources expert or expert in recruitment and selection to manage the process from start to finish. This makes it particularly attractive for small and medium-sized businesses. ChatGPT can make a connection between the results of the questions asked and the follow-up questions. The advantages of the model are that it shortens the time and at the same time provides an opportunity for benchmarking, because for questions related to remuneration analysis, for example, ChatGPT provides information from different sources in a short time.

Table 1 presents the model for using ChatGPT in the process of attracting and selecting human resources.

Table 1. Model for using ChatGPT in the process of attracting and selecting human resources

Stages of attraction and selection	Using ChatGPT
1	2
Vacancy analysis	Using ChatGPT to create an up-to-date job description
Analysis of the external (national) labor market	Using ChatGPT to analyze the national labor market, including supported by numbers for a specific vacancy (demand and supply) for Bulgaria
Analysis of the external (international) labor market	Using ChatGPT to analyze international labor markets, including supported by numbers for specific vacancy figures (demand and supply) for all parts of the world
Analysis of the internal labor market	Using ChatGPT to analyze the internal labor market
Preparation of advertisement for the vacant position	Create an ad with ChatGPT for the vacancy
Defining the budget for the process	Using ChatGPT to provide information about possible costs in the process
Defining the budget for the vacancy	Using ChatGPT to provide market price information for the position

Continued

1	2
Determination of documents that will be required from applicants for the vacant position	Using ChatGPT to specify the necessary documents to apply for the vacant position
Publishing job advertising	Using ChatGPT for the places where the vacancy can be posted
Evaluation of candidates by documents	Using ChatGPT to evaluate applicants on documents (providing information to ChatGPT about job requirements and providing ChatGPT applicants' resumes is required.)
Writing letters to failed candidates and to those who have to appear for an interview	Using ChatGPT to write letters to unsuccessful applicants and those due to appear for an interview
Choosing a selection method for selecting candidates	Using ChatGPT to propose one or more selection methods
Sample interview questions	Using ChatGPT to create sample interview questions
Evaluation of candidates	Using ChatGPT to assess applicants on documents (providing ChatGPT information for applicant responses is required)
Making a final decision	Using ChatGPT to assess applicants on documents (providing ChatGPT with information for applicant responses is required)
Writing letters to failed candidates	Using ChatGPT to write letters to failed candidates
Writing a letter to the selected candidate	Using ChatGPT to write a letter to the selected candidate

Source: Author's model

The model was implemented in the ChatGPT platform. The free version ChatGPT 3 model was used. ChatGPT had no difficulty with any of the tasks at hand. For the purposes of approbation of the model, the vacant position „expert attraction and selection of human resources“ was accepted. ChatGPT produced a job description that contained the basic requirements, but omitted the code from the National classifier of occupations and position, which is specific to Bulgaria. ChatGPT has done a thorough analysis of the external national and international market for the position.

He was asked for additional information with figures regarding the supply and demand for this position, specifically for Bulgaria. The time it takes to prepare the job description was 1 minute. ChatGPT provided information that on average there are about 700 active job postings for recruitment specialists every month according to data from „Jobs.bg”. At the same time, according to data from LinkedIn, about 7,000 recruitment specialists in Bulgaria are actively looking for new opportunities. Despite ChatGPT’s initial desire to convince us that there was a good balance between supply and demand for recruitment and recruitment experts, the data presented suggested otherwise. Subsequently, when asked additional questions, ChatGPT corrected itself and deduced the reasons why there is a huge supply of recruitment experts, but limited demand.

ChatGPT provided data on the average level of remuneration for the position between BGN 2,000 and BGN 4,000.

According to ChatGPT, the approximate budget for searching for a candidate for the vacant position of „selection expert“ is between BGN 2,000 – 10,000. For Bulgaria between 4000 – 8000 BGN. In the expenses, ChatGPT includes Advertisement, Advertising, Recruitment Agency, Search Platforms, Internal expenses, which are variable and depend on salaries and resources. ChatGPT correctly insures that these are indicative values. According to ChatGPT, a more detailed study is needed.

The ad that ChatGPT prepared for us was no different from standard job vacancies and was unlikely to attract the attention of applicants.

ChatGPT recommended us to publish the vacancy announcement on Jobs.bg; Rabota.bg; LinkedIn; Facebook groups for HR professionals; The site of the Bulgarian Association for Human Resource Management (BAHR), universities and others.

ChatGPT suggested us to require a wide range of documents from applicants: resume, cover letter, references, diplomas, certificates, document certifying the internship, portfolio of completed projects , contacts of previous employers, LinkedIn profile.

ChatGPT also recommended suitable interview questions for us. Some of the questions contained two or three questions in one, which is a violation of the rules for asking questions. ChatGPT has demonstrated that it adheres to ethical standards and did not offer us a discriminatory question.

The time to receive responses from ChatGPT on all elements of the model was approximately 1.5 hours (with data entry for 3 candidates for the vacancy). Most of the time was spent on submitting candidate data (CVs, references, certificates) and additional company requirements to ChatGPT to evaluate the candidates.

With software that uses artificial intelligence, this time will be much less, given the fact that applicants apply online and their documents are automatically entered into the system (ATS).

Risks of using ChatGPT in the recruitment and selection process

There are a number of risks involved in the recruitment and selection process, whether using the traditional approach or the proposed model with ChatGPT. Some of the risks associated with the use of ChatGPT in the selection process are:

Allowing discrimination. While we had hoped that AI would bring more objectivity, at this point, the more we learn about AI, we realize that it is only as objective as the algorithm behind it. This means that ChatGPT (as well as any specialized software that uses artificial intelligence) can enable recruitment and selection discrimination without HR expert user knowing.

Misinterpretation of human language. ChatGPT cannot yet interpret the nuances of human language, which can lead to misinterpretations of responses of the candidates. This can lead to risk for the organization when making candidate selection decisions. It can also lead to a risk for the applicant to be rejected for reasons that are not objective.

Incorrectly asked questions to candidates for a vacant position. In the experiment done, ChatGPT asks three questions in one. A mistake that some selection experts also make. This makes it difficult for candidates and usually, the interviewer only gets an answer to one of the questions.

Absence of an opportunity to indicate false information presented by the candidates. There is a risk that applicants may submit false information in their resumes that ChatGPT cannot identify. This can happen with both the traditional approach and this using ChatGPT. In both cases, the professional competence of the selection expert related to fraud prevention in the field of human resources is essential.

Discussion

The developed model is open. It can be supplemented and further developed.

Several main conclusions can be drawn from the application of the model in the ChatGPT platform.

In the first place. The user of ChatGPT who uses it for the process of attraction and selection should be very familiar with the fundamentals of this process. Otherwise, it will be difficult what questions to ask ChatGPT. If not theoretically prepared, the ChatGPT user will have difficulty interpreting the responses. Also will experience the difficulty of distinguishing the correct from the nonsensical answers.

In the second place. As a result of the application of the model, some risks were identified. For example, when preparing a job description, there is a risk that mandatory elements will be omitted from it (for example, for Bulgaria, the requirement for a code under the National classifier of occupations and position) to appear in the job description. Another risk is the credibility of the data that ChatGPT provides. Another risk is the risk of asking job candidates incorrect interview questions.

In the third place. Given some specific requirements in the documents, regardless of the adequate answers that ChatGPT provides, it is appropriate to check the answers to supplement missing information, according to the requirements of national legislation.

In the fourth place. ChatGPT cannot match the candidate with the specifics of the team because it cannot read emotions very well.

In the fifth place. Although ChatGPT can evaluate applicants and make a final decision, at this point I feel it's still better to have a human make those decisions.

In the sixth place. The question remains, when we get everything ready from ChatGPT what happens to our judgment capabilities? What is happening to our knowledge and skills for collecting and analyzing information?

In the seventh place. I believe that despite the many positive aspects of ChatGPT, its role should be supportive, and not primary in the process of attraction and selection.

In the eighth place. There is a risk that ChatGPT will try to manipulate the user. Not trendily, but because at the moment these are his capabilities. As in the presented experiment.

In the ninth place. The vacancy ad offered by ChatGPT is trivial and unattractive. This gives us reason to conclude that the creative possibilities of ChatGPT are currently limited.

Conclusion

The presented model can be supplemented and further developed. The pattern is easily implemented in ChatGPT. Its main advantage is that it respects the logical sequence that exists in the traditional model. Using the proposed model in ChatGPT shortens the time of the whole process. At the same time, there are a number of risks. The risks of: admitting discrimination, misinterpretation of human language, incorrectly asked questions to candidates for a vacant position, and absence of an opportunity to indicate incorrect information presented by the candidates.

A well-constructed and operational process control system is a good option for risk prevention. The availability of adequate professional competence of selection experts is also an opportunity to prevent risks.

And in addition to the risks associated with the recruitment and selection process, there are other risks associated with ChatGPT, which open up a wide discussion. For example, is there a risk that we become so used to ChatGPT that independent thinking is threatened? Is there a risk that a disruption to ChatGPT and everything else we use with artificial intelligence could jeopardize our chances of survival?

We will see a lot more research in the future. As well as the present study, it will be repeated and a comparative analysis of the results will be presented.

I'm sure there's a lot of work to be done, extensive discussions, and possibly the development of standards for the use of ChatGPT in the recruitment and selection process and beyond. I am convinced that there is a place for the use of ChatGPT in the recruitment and selection process, as well as in the overall human resources activity. And the use of ChatGPT in our training processes for human resources specialists, including recruitment, is already a fact.

Acknowledgments

The present research was done in connection with the implementation of the project „Impact of digitalization on innovative approaches in human resources management“ is implemented by the University of Economics – Varna, in the period 2022 – 2025. The author expresses gratitude to the Fund „Scientific Research“ for the support provided during the implementation of the project „Impact of digitalization on innovative approaches in human resources management“, contract No. KP-06-H-65/4 – 2022.

Thank you very much to the reviewers for their time and constructive comments!

References

- Боянов, Л. (2021). Дигиталният свят – промяната. Глобалната дигитална трансформация – обогатяване или обедняване на човечеството, Авангард Прима. (Boyanov, L., 2021, Digitalnyat svyat – promyanata. Globalnata transformatsia – obogatyavane ili obednyavane na chovechestvoto, Avangard Prima).
- Динева, В. (2022). Съвременни аспекти на вътрешния одит, Издателски комплекс – УНСС, София. (Dineva, V., 2022, Savremenni aspekti na vatreshniya odit, Izdatelski kompleks – UNWE, Sofia).
- Динева, В. (2023). Актуални приоритети на вътрешния одит в областта на човешките ресурси, Научна конференция Трудът и социалната защита в условията на глобални обществени, икономически и социални промени, Издателски комплекс – УНСС, София. (Dineva, V., 2023, Aktualni prioriteti

- na vytyreshnya odit v oblastta na choveshkite resursi, Nauchna konferentsia Trudyt I sotsialnata zashtita v usloviyata na globalni I obshtestveni, ikonomicheski I sotsialni promeni, Izdatelski kompleks – UNWE, Sofia).
- Иванова, П., Антонова, К. (2021). Бъдещето на работните места: ползи и рискове от използването на изкуствен интелект, Известия, списание на Икономически университет – Варна, том 65 №4, (Ivanova, P., Antonova, K., 2021, Badeshteto na rabotnite mesta: polzi I riskove ot izpolzvaneto na izkustven intelekt, Izvestia, spisanie na Ikononicheski universitet – Varna, tom 65 №4), available at: extension://efaidnbmnnnibpcajpcgclefindmkaj/https://journal.ue-varna.bg/uploads/20220209112843_569165236203a56b65d53.pdf (accessed 10 May 2024)
- Стефанов, Л., Пейчева, М. (2018). Управление на човешките ресурси, Издателски комплекс – УНСС, София. (Stefanov, L., Peicheva, M., 2018, Upravlenie na choveshkite resursi, Izdatelski kompleks – UNWE, Sofia).
- Филипова, Ф. (2021). Развитие и перспективи пред независимия финансов одит в България, Институт на дипломираните експерт-счетоводители в България, Извънреден брой, (Philipova, Ph., 2021, Razvitie I perspektivi pred nezavisimia finansov odit v Bulgaria, Institut na diplomiranite ekspert-schetovoditeli v Bulgaria, Izvanreden broj, <https://www.ides.bg/e-journal/2021/issue/07-ib-2021-f-filipova> (accessed 15 January 2024)
- Bergdahl, J., Latikka, R., Celuch, M., Savolainen, I., Mantere, E., Savela, N., Oksanen, A. (2023). Self-determination and attitudes toward artificial intelligence: Cross-national and longitudinal perspectives, Telematics and Informatics 82 (2023) 102013, available at <https://www.sciencedirect.com/science/article/pii/S0736585323000771> (accessed 25 May 2024)
- Cellan-Jones, R. (2014). Stephen Hawking warns artificial intelligence could end mankind, BBC News, available at: <https://www.bbc.com/news/technology-30290540> (accessed 15 January 2024)
- Gayathri, K., Majini Jes Bella, Dr. K. (2023). Role of artificial intelligence technology and its impact on transformation of human resources management, Research in Multidisciplinary Subjects (Volume-12), available at: https://www.researchgate.net/publication/376580780_ROLE_OF_ARTIFICIAL_INTELLIGENCE_TECHNOLOGY_AND_ITS_IMPACT_ON_TRANSFORMATION_OF_HUMAN_RESOURCES_MANAGEMENT (accessed 15 May 2024)
- Hetler, A. (2023). ChatGPT, available at: <https://www.techtarget.com/whatis/definition/ChatGPT> (accessed 25 February 2024)
- Jajal, T. (2018). Distinguishing between Narrow AI, General AI and Super AI, available at: <https://medium.com/mapping-out-2050/distinguishing-between-narrow-ai-general-ai-and-super-ai-a4bc44172e22> (accessed 10 January 2024)

- IBM. (n.d.). What is AI? available at: <https://www.ibm.com/topics/artificial-intelligence> (accessed 10 August 2024)
- Peicheva, M. (2021). Artificial Intelligence in Human Resource Functions – Nature and Practical application, „Човешки ресурси & Технологии = HR & Technologies”, Creative Space Association, Issue 1/2021, available at: <chrome-extension://efaidnbmnnnibpcajpcgglefindmkaj/https://journal.cspace-ngo.com/arb/Issues/2021/1/1-Peicheva.pdf>, (accessed 07 January 2024)
- Peicheva, M. (2022). Data analysis from the applicant tracking system, „Човешки ресурси & Технологии = HR & Technologies”, Creative Space Association, Issue 2/2022, available at: <chrome-extension://efaidnbmnnnibpcajpcgglefindmkaj/https://journal.cspace-ngo.com/arb/Issues/2022/2/1-Peicheva.pdf> (accessed 15 February 2024)
- The Guardian. (2014). Elon Musk: artificial intelligence is our biggest existential threat, available at: <https://www.theguardian.com/technology/2014/oct/27/elon-musk-artificial-intelligence-ai-biggest-existential-threat> (accessed 10 April 2024)
- Zang, Y, (2023). The Impact of ChatGPT on HR Recruitment, Journal of Education, Humanities and Social Sciences, Volume 19, available at: https://www.researchgate.net/publication/373765050_The_Impact_of_ChatGPT_on_HR_Recruitment (accessed 17 March 2024)