

The Impact of Artificial Intelligence on Behavior of People in the Labor Market

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Abstract--- The article examined the nature of the influence of artificial intelligence (AI) on behavior of people in the labor market in Russian regions. The group of authors analyzed the positive and negative impact of AI on behavior of people in the labor market by assessing the effectiveness of human potential use, human learning and competitiveness, increase (reduction) in unemployment, social inequality, impact on the human psyche and its safety. The study found that AI improves human efficiency and competitiveness. At the same time, there is an increase in competition and not everyone can find decent jobs in the labor market. This will boost unemployment. Social status is in the risk zone. Many people are confident that AI serves and will serve the purposes and desires of a small group of rich people, worsening the well-being of the majority of the population and increasing social inequality. Information security and the human psyche have found themselves in the negative sector. The article first considered the social aspect of the impact of artificial intelligence (AI) on behavior of people in the labor market. The main advantage of the article is a systematic approach to assessing the nature of AI's impact on behavior of people in the labor market. The received results can become a basis for the further researches about character of influence of AI on a society, and also decisions on finding of balance between the person and AI on the labor market.

Keywords--- Artificial Intelligence, Behavior of People, Labor Market, Risks, Human Potential, Social Inequality.

I. Introduction

The development and penetration of innovative technologies in all spheres of human life has a peculiar effect on his opportunities, mental condition, and place in society. The changes taking place have a significant impact on the labor market. Its structure is constantly changing and it is becoming increasingly difficult to meet the demands of employers. More and more attention is paid to modern technologies for the effective use of human potential. (Sochneva et al, 2018; Buley et al, 2016). Investments in human capital are considered profitable and promising (Blossfeld, &Huinink, 1991; Belousova et al, 2016; Veretekhina, 2018).

There is increasing pressure on employers to work. There are tough systems of staff motivation. Some of them are based on delays in wages or bonuses to create prospects and longer development within one organization (Fujimura, 2019). In such cases, trade unions sometimes come to the rescue (Vinichenko et al, 2019; Vinichenko, et al, 2018).

Talented employees and administrative staff enjoy a steady demand in the labor market. Formed in the 20th century by scientists Chambers G.E., Foulon M., Handfield-Jones H., Hankin M.S., Michaels G.E. (Chambers et al, 1998) the foundations of talent management technology are actively used by theorists and practitioners in many countries around the world (Sears, 2003, Schweyer, 2004, Smilansky, 2005, Efron & Orth, 2014; Abassi & Boukhris, 2018). Attracting talented employees often makes the process of increasing the competitiveness of an organization cheaper and more cost-effective (Ingram, 2016). However, attracting talented youth from the labor market, according to some scholars, can be costly (Kirk et al, 2013). Therefore, it is important to use the most optimal technologies that allow, at minimal cost, to achieve high loyalty of new employees (Chulanova et al 2018). It is useful to create a personnel reserve, to form a high-quality domestic labor market (Chulanova & Mokryanskaya, 2017), favorable working conditions (Rogach et al, 2016), and develop a motivation system (Karácsony et al 2018).

Young people are the hardest hit on the labor market There is a very high competition in the youth labor market. It is difficult for graduates to find a decent job (Demchenko et al, 2017).

Recently, AI is increasingly being introduced into business processes. This affects the labor market. This is manifested both in a change in the position of workers and employers, and in the technologies used in the search, selection and evaluation of candidates for jobs.

The introduction of AI in the production processes of goods and (or) services leads to a reduction in the need for labor (Shi, Y., 2019) and to an increase in unemployment. Increased competition in terms of using AI affects the human psyche in different ways (Kalmady et al, 2019) and leads to the disclosure of both positive and negative qualities of a person (Burrell, 2019; Cha et al, 2020). Studies are based on AI on predicting human behavior, the growth and updating of knowledge in the course of modern teaching technologies (Abubakar et al, 2019; Tong et al, 2020).

In the field of personnel management, special systems are increasingly being used based on AI elements (Ossmy, Gilmore & Adolph, 2019; Pomato, 2019; TextRecruit, 2019; Unilever, 2019). They help to make it more technologically advanced and reduce the speed and number of processes (procedures) by tens, hundreds of times, increasing the efficiency of the entire personnel management system or business personnel selection processes. Along with the positive effect, AI brings problems in the HR sphere, creating a danger to humans (Zimenkova, Paramonova & Lobacheva, 2018). Their decision cannot wait.

An analysis of the literature showed that much attention was paid to the issue of developing the labor market in the digital economy. However, there is still no work revealing the nature of the influence of artificial intelligence on behavior of people in the labor market. The high relevance and lack of systemic work on this issue became the basis for the study.

II. Methodology

A study to identify the nature of the impact of artificial intelligence on behavior of people in the labor market was conducted in organizations of four constituent entities of the Russian Federation: Moscow, Moscow Region, Krasnoyarsk Territory and the Khanty-Mansi Autonomous Area in November 2019 - February 2020. The total population was 24,753,350 people (Moscow - 12,615,882 people, Moscow Region - 7,599,647 people, Krasnoyarsk Territory - 2,874,026 people, Khanty-Mansiysk Autonomous Okrug - 1,663,795 people). The sample size was $n = 527$, the sampling error was 4.75%, and the confidence level was 95%.

The application of the quota sample made it possible to identify such characteristics of respondents as the sphere of activity, education, gender and age. Despite a wide range of spheres of activity, representatives of management, state and municipal management, personnel management, technical specialties and economists took part in the sociological survey. Among them, 38% - with higher education, 47% - with incomplete higher education, 13% - with secondary (specialized secondary) and 2% - have something another. The gender picture was in favor of women: 69% of women and 31% of men. The majority of respondents are young people aged 18–25 years - 74%; then go 26-35 years - 15%; 36-45 years old - 7%, 46-55 years old - 2% and older than 56 years old - 2%.

The purpose of the study was to reveal the nature of the impact of artificial intelligence on the labor market. To achieve the purpose of the study, general scientific and sociological methods were used. The basis of empirical methods was a questionnaire survey using the online service Google Form. The results were discussed at the focus group, which included both Russian and foreign experts.

III. Results and Discussion

The study found that the impact of AI on behavior of people in the labor market is controversial. On the one hand, AI has a positive effect on the development of the labor market, increases the efficiency of the use of human potential, and develops human competitiveness (Figure 1).

In today's understanding of the population, AI is meant to help a person in his development, to facilitate the fulfillment of labor functions. Therefore, the bulk of the answers are in the positive sector. Most of the respondents completely agree (30-45%) and partially agree (14-36%) that artificial intelligence will make better use of human potential, increase the effectiveness of training and human competitiveness. This correlates with studies by Burrell L. (2019). Improving human competitiveness is seen through the prism of mastering the most active and talented employees of advanced technologies based on AI (Vinichenko et al, 2019).

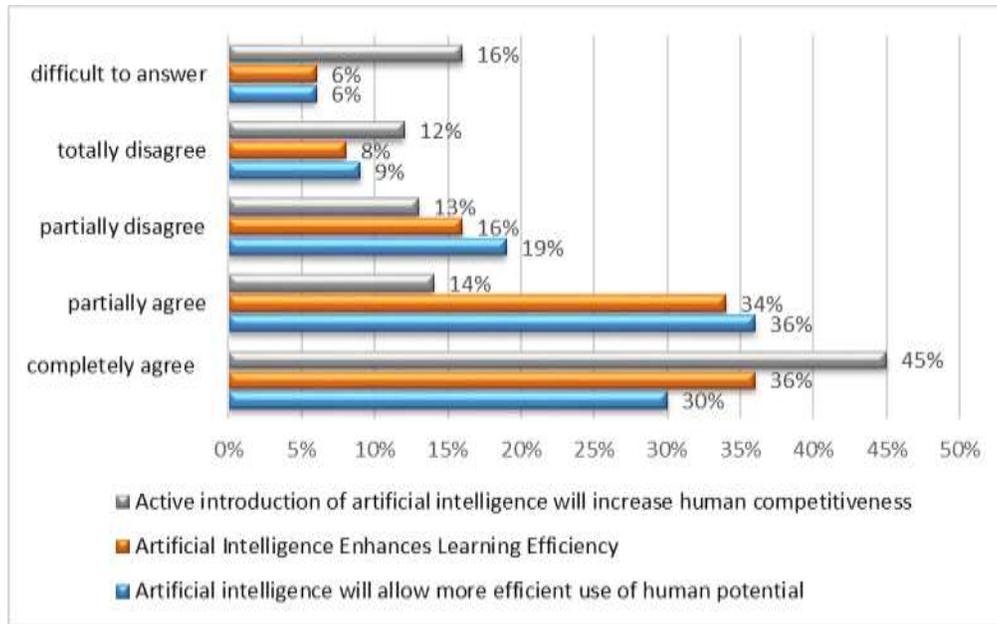


Fig. 1: The Positive Impact of AI on the Labor Market

Source: own research, 2020.

There were few dissenters - only 8-12%. This is a small part of employees who categorically do not want to develop, learn, and clearly understand the threat of lagging behind advanced colleagues. Opponents of the introduction of AI should include those employees who fear job cuts from the digitalization of business processes, the work of government agencies. This correlates with the data obtained by Shi Y. (2019). The importance of continuous and modern training was noted by the majority of respondents (70%).

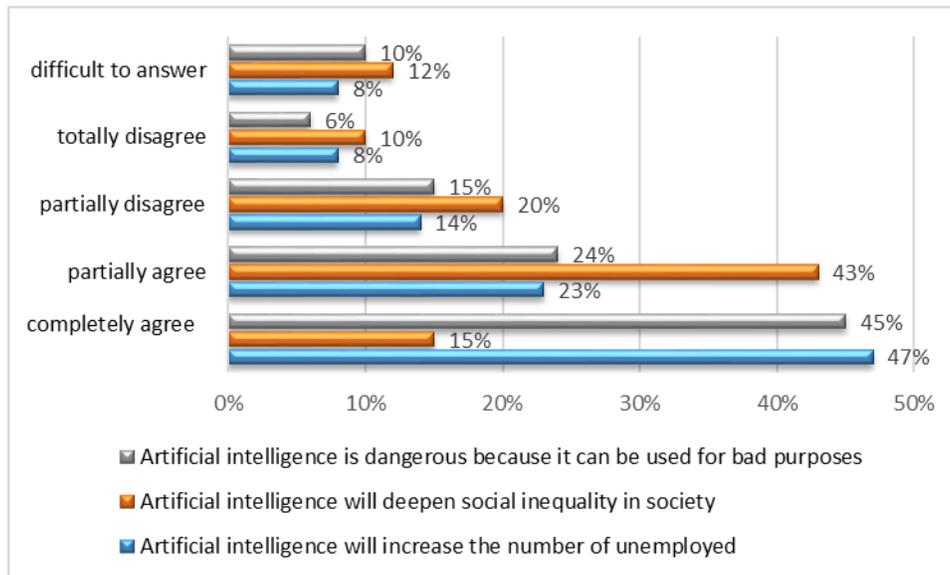


Fig. 2: The Negative Impact of AI on the Labor Market

Source: own research, 2020.

The dynamics of changes in all areas of production are so high that they require constant improvement of the acquired knowledge and skills, as well as the acquisition of such competencies that are now in demand on the labor market, which the employer urgently needs (Matraeva et al, 2020). The development of human potential begins with the stage of identifying abilities, talent in a person. In this issue, various methods and technologies are actively used

that make it possible to timely identify a person’s potential and determine a multivariate scenario for its use and future development (Kirillov et al, 2017).

Along with positive, AI also has a negative impact on behavior of people in the labor market (Figure 2).

More than half of surveyed people believe that AI will increase the number of unemployed (70%). These concerns are based on job cuts due to the introduction of advanced technologies based on digitalization of processes, the introduction of AI (Bronnikova et al, 2018). There is a quick withering away of the "old" professions and the emergence of new ones. Not all participants in the labor market, especially hired workers, are ready for such changes. Only 8% were fully prepared for innovative changes in the labor market based on the introduction of AI. This amount is generally consistent with the situation in the labor market (Catacutan et al, 2020). There are quite a lot of people who are looking for a good, well-paid job, but who do not have relevant competencies, ready for continuous training and constant changes (Frolova et al, 2019; Frolova, et al, 2016). In this regard, there is a hunt for talented employees. The employer is willing to pay a lot of money for them. However, there are very few of them in the labor market, therefore, technologies for identifying and developing the talents of their organizations are becoming popular (Thunnissen, 2016).

Deepening social inequality with the introduction of AI scares the workers. This issue is affected by the uncertainty associated with the participation of man and AI in the labor processes of various sectors of the economy. 15% were absolutely confident in the decline in their social status. These people associate their fears with their financial capabilities. A situation has developed in Russian society when a small group of people has enormous resources that open the doors for them to a brighter future. Labor market participants believe that AI serves and will serve the goals and desires of only this bunch of people, worsening the well-being of the bulk of the population and increasing social inequality (Sochneva et al, 2017). The majority of respondents (43%) are concerned about the active implementation of AI in human life. But they have not fully understood the social dangers that this poses. It is not clear to them whether employees will be able to maintain or improve their social status with the further use of AI in conditions of social and ethnic tension (Oseev et al, 2018). This becomes relevant in the context of changing social status of various professions in society (Ilina et al, 2018).

A small proportion of respondents (10%) are not afraid of changes. They are actively exploring the capabilities of AI, striving to use its capabilities to increase their effectiveness and competitiveness in the labor market. This category in the matter of preserving and improving its social status is based on its talent, intellect and communication skills. Active collection of personal data about participants in the labor process alarms employees. The study showed that more than half of respondents believe that AI is a danger to society. The society does not yet have a clear understanding and delineation of the usefulness and risks associated with the use of AI (Ossmy, Gilmore & Adolph, 2019; Zimenkova, Paramonova & Lobacheva, 2018). Unfair employers, unfair competitors, terrorists, enemies of mankind can take advantage of them. The creation of a single database of employees, the maintenance of digital documentation, the evaluation of the employer in its system and the posting of characteristics and feedback in open access facilitate the work of personnel services. Along with this, it makes the employee more dependent on the current employer. An employer can give a negative characteristic to an employee who is actively fighting for his rights or wants to move to a more promising, profitable employer. This addiction brings workers back into slavery, but already digital. For highly qualified, well-paid personnel, the openness of personal data, professional information can become the subject of blackmail, extortion. In addition, there are threats related to cyber security (International Conference, 2019).

An analysis of the data in Table 1 indicates that AI mainly affects the human psyche.

Table 1: The Nature of the Impact of AI on the Human Psyche

Response option	Positively	Not so good	Partially worsens	Significantly worsens	I do not care	Difficult to answer
Share of respondents	11,1%	25,7%	25,1%	11,4%	11,6%	15,1%
Rating	6	1	2	5	4	3

The positive characteristic was in the last place in the rating. This is no accident. Current stressful situations arising in the course of working life, but especially when looking for a job, impose the risk of job cuts through the introduction of AI and optimization of business processes. This makes people worry even more, fear for their future.

IV. Conclusions

The rapid introduction of advanced technologies in the business and public sector requires a timely and adequate response from the labor market. Employers strive to increase their competitiveness by attracting talented employees, creative managers. Employees of companies, as well as free agents of the labor market, are peculiarly responsive to the innovations introduced. A special place in their assessment is the implementation of AI. The study identified both positive aspects and a negative assessment of the use of AI in human labor.

In the positive sector, there were assessments such as the promotion of AI in making fuller use of human potential, improving learning outcomes and enhancing human competitiveness. At the same time, part of the respondents, opponents of development and training, in such conditions see threats of lagging behind advanced colleagues, job cuts. The objectivity of the increase in the number of unemployed was revealed in the negative assessments of the respondents. AI will gradually displace people from traditional areas, there will be a reduction in jobs, even entire professions. In the new conditions, not everyone will be able to find decent jobs on the labor market. At risk were social status and human security. AI poses a danger to humans because unscrupulous employers, unfair competitors, terrorists, and enemies of humanity can use it. A strong opinion has been revealed that AI serves will serve a narrow circle of wealthy individuals, their goals and desires, worsening the well-being of the bulk of the population and increasing social inequality.

In general, AI penetrates our lives more and more deeply and affects on behavior of people in the labor market. In some cases, it contradicts the desire of employers to increase the efficiency of companies and the desire of workers to maintain their social, economic status, and high demand in the labor market. The advantages and disadvantages of using AI must be studied in a timely manner in order to prevent the irreversibility of a situation where AI will systematically harm a person.

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