

## **Technological unemployment in the scientific discourse in 2009-2020**

### **Abstract of the doctoral thesis**

The presented doctoral dissertation is devoted to the problem of technological unemployment. Posed as part of the so-called “Fourth Industrial Revolution”, the phenomenon consists of the use of autonomous means of production (machines, robots, software) within the existing and new processes of production and processing of resources, as a result of which the activities and professions are taken away from human workers. The main objective of the work was to deepen and systematize knowledge on technological unemployment in a multi-criteria manner - under various concepts, models and contexts. The methodological tools used in the doctoral thesis were Critical Discourse Analysis (CDA) and Secondary Data Analysis. Constructivist Grounded Theory has also been utilized. The scope of the conducted research was limited to the years 2009-2020. The restraints of this timeframe were defined by the financial crisis of 2007-2008 and the crisis caused by the COVID-19 pandemic, which began in 2020.

Thirteen research questions were posed in the course of the analysis. They concern the functions performed by the discourse, categorization and description of technological unemployment in the discourse, the effects of the described phenomenon that have been highlighted by the authors, groups perceived in the discourse, possible social stratification, the issue of power fluctuations, possible social policy arrangements, axiological aspects of the description of the phenomenon, the type of language used in the discourse as well as issues hidden and unspoken throughout the discourse.

The dissertation consists of ten chapters. The first chapter justifies the choice of the subject of the work as well as the time range and context of the analysis. The broader context of changes in the labour market (related to, inter alia, precarization and uberization processes and the development of the gig economy) and the background of modern technological changes (including the development of solutions based on artificial intelligence and machine learning) were signaled. The concept of "technological unemployment" was operationalized, the related proposals for social and political solutions were signaled, and the phenomenon was placed within the framework of the theoretical concepts of neo-corporatism, good governance and globalism. In the end, the methodological approach used in the work has

been presented and justified in detail. The results of the pilot discourse research were also presented, and research questions were posed and developed.

The second chapter is devoted to the review of the existing data on technological unemployment. The phenomenon was recognized as a process characterized by phases. The focus was also set on changes in the processing of resources in enterprises and their impact on the formation of the described phenomenon. Three models of technological unemployment formation have been distinguished (based on replacing skills, routine activities and entire occupations). Finally, the various effects of technological unemployment and possible responses have been addressed.

The third chapter of the dissertation concerns the characteristics of technological unemployment in the scientific discourse. It draws attention to the purposefulness of the analyzed statements and the described features of the phenomenon in the context of various types of groups and their social position. The problems caused by technological unemployment in the context of the possibilities of their prevention and mitigation were also pointed out. Finally, the issues of the semantics of the analyzed discourse have been developed.

The issue of the impact of technology on employment is discussed in the fourth chapter of the work - technological unemployment has been presented as a cyclical process, starting and ending in the position of the so-called "normal situation" (but qualitatively different each time) and going through different stages - the introduction of technological changes and subsequent reductions in working time and earnings, deepening inequality and anxiety, and also the introduction of solutions mitigating the effects of the phenomenon, preceded by the occurrence of social resistance. The rest of the chapter discusses anticipations related to the described phenomenon and changes consisting in expanding the capacity of the concept of work.

The fifth chapter addresses issues related to the impact of technology and the unemployment it causes on the human condition. In the course of the research, the threats perceived in the discourse were linked with specific, accepted models of the emergence of the phenomenon. Two scenarios of human and machine coexistence were presented - partnership cooperation and a scenario of humans dominated by robots. In the end, positive, mixed and negative predictions of the impact of robotization on the mental condition of people were distinguished.

The sixth chapter of the dissertation is devoted to deepening the issue of social inequalities. It presents the variety of possible effects of technological unemployment,

affecting the deepening of inequalities (in particular economic ones), related to, among others, increasing the power of owners of digital means of production. Later in the chapter, the economic, political and social aspects of inequality have been detailed and the question of different points has resurfaced.

The seventh chapter was devoted to the local perspectives of research on technological unemployment - the focus was set on research concerning Latin America, the United States, Africa, Europe and Asian countries. Due to the relatively novel nature of this type of research, the obtained results were supplemented with publications from outside the originally selected range of scientific discourse. Among other things, the demonstrated features of these pieces were: the lack of methodological consensus between the studies, the impact of the global discourse and theoretical framework on the shape of local research, the differences in the descriptions of different regions, the lack of a close relationship between research and development expenditure and the unemployment rate, and finally the relatively limited and conservative prescriptive aspects of the discussed studies.

The eighth chapter focuses on social and political solutions to mitigate the effects of technological unemployment, which are put forward in the scientific discourse. Several functions performed by such solutions have been pointed out. Among them, there were: the improvement of the accessibility and quality of education, the introduction of a basic income, the implementation of a full employment policy, the reduction of people's working time, the implementation of employment quotas, changes in the ownership structure of enterprises, taxation of digital means of production, the use of the sharing economy and others.

The penultimate chapter of the dissertation is devoted to long-term anticipations of the social impact of technological change, which are expressed in the analyzed discourse. The study takes into account various types of artificial intelligence development models and forecasts regarding the further impact of automation processes on work, consumption and issues of the political, social and economic systems. The question of control over artificial intelligence has also developed, in particular in the context of the declining role of man versus machine and arising privacy concerns.

The final, tenth chapter of the work is devoted to supplementing and summarizing the research. Technological unemployment is presented as a historical problem. Also, its place and context in the Polish-language discourse are shown. Finally, a summary and answers to the research questions posed in the first chapter are presented. In the summary, a noticeable, growing impact of technology on changes in the labour market was noted, along with the structural nature of technological unemployment, the processual and model nature of the

phenomenon, and its problematic nature (demanding the implementation of appropriate social innovations). The chapter also presents the changing nature of the concept of work, the significant impact of technological unemployment on the human psyche and condition, the global nature of the described phenomenon and its importance in the context of the anticipated future. In response to the posed research questions, several issues were taken into account: the multiplicity of functions performed by the discourse (informative, anticipatory, prescriptive, analytical and historical ones), the complexity of the description of technological unemployment and the contexts related to it, as well as the diversity and range of the observed effects of the phenomenon (both positive and such as freeing people from tedious tasks, as well as negative ones, such as the risk of excessive accumulation of capital by owners of autonomous means of production and marginalization of the role of people). It was pointed out that issues related to the stratification of society, the formation of elites and changes in power relations, and the importance of proposed social and political solutions (which are mainly aimed at preventing and mitigating such changes) are important in the discourse. Other highlighted aspects of the discourse were: axiological references (in particular, the reference to the importance of freedom, social justice and equality), prognostic issues (related to the concepts of development of the so-called "general artificial intelligence") and the use of the semantics (indicating that the language used in the discourse is related to the assessment of the described phenomena). Finally, the threat related to the noticeable hegemonic impact of the discourse of the global North was raised. The risk of legitimizing the phenomenon of technological unemployment in the discourse has been signaled. The discourse was evaluated as progressive, innovative, global and complex in its internal disputes and discussions conducted within it.