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**THE IMPACT OF GENDER STEREOTYPES ON THE FORMATION
OF THE LABOR MARKET IN KAZAKHSTAN: THEORY, ASSESSMENT
AND DEVELOPMENT SCENARIOS**

**Dissertation for the degree of Doctor of Philosophy (PhD) in the
specialty 8D04101 – «Economics».**

ANNOTATION

Relevance of the research topic.

In the context of Kazakhstan's transition to a market economy, a wide range of socio-economic challenges has emerged, among which one of the most significant is the problem of employment. The modern labor market requires a new quality of labor relations and adaptation of participants to changing socio-economic conditions. However, a number of unresolved issues remain, such as insufficiently efficient use of labor resources, an increase in unemployment, mass poverty, a high concentration of women in low-wage industries, as well as gender asymmetry, manifested in vertical and horizontal segregation.

The position of women occupies a special place in the structure of employment problems. The current state of female labor in Kazakhstan largely reproduces the patterns characteristic of the world experience of periods of economic transformation. Despite the high demand for female labor, its cost remains underestimated. The specificity of female labor is manifested in the phenomenon of "double employment", which consists in the need to combine professional duties with the performance of family and household functions, as well as in the stable assignment of "traditional" professions to women, perceived as a continuation of the domestic distribution of roles. This situation is closely related to the reproduction of gender stereotypes that determine public attitudes toward female labor at various levels, especially in the mass consciousness, in the management practices of employers and in the attitudes of women themselves. Stereotypes, acting as a factor in the socialization of the individual, are capable of forming stable patterns of behavior, but at the same time are potentially subject to correction through changes in individual attitudes and values. The main task in these conditions is to find effective mechanisms that will simultaneously influence both the motivation of employers and the attitudes of employees, reducing the influence of the "gender effect" in the labor market.

In recent years, strategic documents and regulations aimed at ensuring gender equality and developing labor resources have been adopted and implemented in Kazakhstan. Among them are the Law of the Republic of Kazakhstan "On National Security of the Republic of Kazakhstan" dated January 6, 2012 No. 527-IV, the Law of the Republic of Kazakhstan "On Prevention of Domestic Violence" dated

December 4, 2009 No. 214-IV, the Law of the Republic of Kazakhstan "On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Ensuring Women's Rights and Children's Safety" dated April 15, 2024, the Concept of Family and Gender Policy in the Republic of Kazakhstan until 2030, the Concept of Cultural Policy of the Republic of Kazakhstan for 2023-2029. In addition, in his Address "Kazakhstan in the Era of Artificial Intelligence: Current Tasks and Their Solutions through Digital Transformation" dated September 8, 2025, the President of the Republic of Kazakhstan Kassym-Jomart Tokayev emphasized the need for a comprehensive modernization of the labor market, including forecasting personnel needs, implementing large-scale training and retraining programs, as well as developing new competencies that meet the challenges of the digital era. These areas are of particular importance in the context of overcoming gender limitations, as they open up opportunities for women in the digital economy and high-tech industries, where they are traditionally underrepresented. Thus, issues of studying gender stereotypes in the labor market are becoming especially relevant in the context of modern socio-economic transformation and the tasks set at the highest state level.

Aim and objectives of the study. The aim of the dissertation is the theoretical and methodological substantiation of the influence of gender stereotypes on the formation of the labor market of Kazakhstan, as well as the development of directions and scenarios for its development in the context of ensuring equal employment opportunities.

In accordance with the stated goal, the following main **objectives** are proposed to be solved:

- to assess the current situation in the labor market of Kazakhstan in terms of gender;
- to develop an economic and mathematical model for the analysis of gender stereotypes;
- to analyze the possibilities of regulating gender stereotypes in Kazakhstan;
- to determine the main directions of influence of gender stereotypes in the labor market of Kazakhstan;
- to develop scenarios for the development of gender stereotypes in the labor market of Kazakhstan;
- to propose ways to solve gender stereotypes in the labor market of Kazakhstan.

Subject of the research. Socio-economic conditions and mechanisms of influence of gender stereotypes on the formation and development of the labor market in Kazakhstan.

Object of the research. Women as a socio-economic group in the labor market of Kazakhstan.

Research methods.

The methodological basis of the study is based on a combination of qualitative and quantitative methods, which ensured a comprehensive analysis of gender differences in the labor market of Kazakhstan and the identification of opportunities

for their institutional regulation. The following methods and analytical approaches were used in the work:

- Z-score standardization to ensure comparability of variables;
- Pearson's correlation analysis to identify relationships between employment and unemployment indicators;
- graphical methods (dot plots, interval plots) to visualize differences between male and female employment;
- Pareto analysis to identify professional groups that reinforce gender asymmetry;
- Principal Component Analysis (PCA) to identify hidden factors and periods with similar dynamics;
- Cluster Analysis (Fuzzy C-means and K-means) to build stable configurations of gender stereotypes;
- Classification trees (Decision Tree Classifier) to identify hidden dependencies between the educational environment, self-esteem and the formation of soft skills;
- Scenario Modeling (Scenario Modeling based on PCA and clustering) to assess the trajectories of regulation of gender stereotypes;
- Quadratic Regression Analysis to identify both linear and nonlinear dependencies between female employment, unemployment, job quality and GDP;
- Analysis of Variance (ANOVA) to test the statistical significance of models;
- Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC) and the Durbin–Watson test for assessing the quality of models and checking autocorrelation;
- Flexplot Analysis for diagnosing nonlinearities, threshold effects and data heterogeneity.

The use of an integrated approach made it possible to identify persistent differences in the employment conditions of men and women, determine institutional constraints, and build a model of their influence on the formation and dissemination of gender stereotypes and possible areas of regulation.

The information and empirical base of the study includes official statistics from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, containing indicators of employment, unemployment, wages, professional structure and distribution by type of employment in the gender context. The source also included the results of the author's survey of university students in Kazakhstan, reflecting the influence of the educational environment and family factors on the formation of soft skills and their connection with the reproduction of gender stereotypes

The scientific novelty of the study.

- for the first time a combination of principal component analysis (PCA), cluster analysis and classification trees (Decision Tree Classifier) was used to study gender differences in employment and soft skills, which allowed us to identify hidden dependencies and structure the factors of stereotype reproduction;
- a scenario analysis of the development of gender stereotypes was developed using quadratic regression, ANOVA, information criteria (AIC, BIC) and the

Durbin-Watson test, which ensured the identification of nonlinear dependencies and threshold effects of the influence of female employment on macroeconomic indicators;

- an institutional model of the reproduction of gender behavioral restrictions (“Gendered Pathways Model”) was proposed, adapted to the Kazakhstan context and integrating international concepts (pipeline theory, glass escalator, stereotype inoculation, SAFE model) with the national regulatory framework;

- the areas of influence of gender stereotypes on the labor market have been systematized: education, forms and quality of employment, economic value of labor, which made it possible to reveal the relationship between individual, institutional and macroeconomic consequences; - practical regulation mechanisms have been developed: scenarios (basic, reformist, transformational), introduction of the gender pay gap index, gender wage audits, job evaluation systems, as well as a step-by-step regulation roadmap

The provisions submitted for defense:

- the author's interpretation of “gender stereotypes” as the perceptions, goal-setting, and behaviors of individuals shaped by the accepted norms and rules of life activities associated with a particular gender, which are modified to varying degrees depending on the extent and depth of social transformation;

- analytical matrices, presented in a structured form, demonstrate the differences between countries in legislative measures, cultural norms and the effectiveness of policies in the field of overcoming gender stereotypes;

- the multi-level approach to the study of gender stereotypes in the labor market based on the integration of macro-, meso-, micro- and intrapsychic levels of analysis, which allowing identification of the mechanisms of their reproduction from institutional structures and organizational practices to interpersonal interactions and individual self-perception;

- Gendered Pathways Model as an institutional model of reproduction of gender behavioral constraints, adapted to the socio-economic and cultural conditions of Kazakhstan;

- Roadmap for the implementation of a set of measures to reduce the impact of gender stereotypes in the labor market of Kazakhstan, focused on state institutions, the education system and the business environment.

Theoretical significance of the research results.

The theoretical significance lies in expanding scientific understanding of the mechanisms of reproduction of gender stereotypes in the labor market of Kazakhstan. It was revealed that gender differences are formed as a result of the consistent impact of family norms, educational environment, cognitive attitudes and employment conditions. The directions of influence of stereotypes are determined - education, forms and quality of employment, economic value of labor, which made it possible to form a holistic understanding of the relationship between individual, institutional and macroeconomic consequences. The presented approach eliminates the gap between economic and mathematical analysis and institutional theory, contributing to the development of interdisciplinary studies of gender differences and labor economics

Practical value of the research results.

The practical significance of the study lies in the applicability of the obtained results for the development of state programs aimed at regulating gender differences in the labor market and increasing the efficiency of using labor potential. Scenario modeling made it possible to assess the consequences of changes in the structure of female employment, the level of informal employment and the gender wage gap for the dynamics of GDP and economic growth. The developed regulatory tools include the introduction of a gender wage gap index, gender audits, the use of job evaluation systems and a step-by-step roadmap for reducing the influence of stereotypes. The obtained results can be used in the formation of strategic documents of the Republic of Kazakhstan, such as "Gender Policy-2030", "Kazakhstan-2050" and the Concept for the Development of Higher Education and Science in the Republic of Kazakhstan for 2023- 2029, as well as in the process of fulfilling international obligations under the Sustainable Development Goals (SDG 5 and 8).

Publications.

The main results of the dissertation work have been published in 9 scientific papers. Of these, 2 articles have been published in the collections of scientific international practical conferences (1 - foreign, 1 - Kazakhstani), six articles in publications recommended by the CQASHE of Ministry of Science and Higher Education of the of the Republic of Kazakhstan, one article in rating journal from the list of Scopus databases (percentile over 85).