

Gender issue in modern education: Theory and practice



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ABSTRACT

So far, gender inequality in education has been considered in the context of inequality in women's access to technical specialties, the impact of education on the fertility rate and wages of women, the impact of religious, cultural, social-economic values on women's education level. However, this concept does little to explain the gender imbalance and low quality of human capital in an environment where women have the opportunity to be educated in any field of knowledge through a feminization in the European countries. The research methodology is based on the correlation analysis of indicators of gender equality in education in Germany, France, Poland, and Ukraine for 1991-2018. The purpose of the study is to identify the trends and dynamics of gender changes in education, the level of gender inequality and establish the causes and effects of gender asymmetry in some European countries. To evaluate gender equality in education, we used the Gender Parity Index. The results of correlation analysis prove the presence of a direct connection between the level of fertility and the Gender Parity Index in the field of primary and higher education, while in the field of secondary education-reverse. Such tendencies are inherent in almost all countries of Europe. The analysis of indicators characterizing the level of education of women within the Eurozone countries shows the decisive role of the structure of the economy and the needs of the labor market in specialists with digital skills and mental abilities. The structure of the economy and the efficiency of various sectors ensure the reduction of gender inequality in education, contributing to overall economic growth and GDP per capita. Political institutions and national policies indirectly influence gender inequality in education by regulating the development of sectors of the economy with different levels of female employment. The proposed paradigm of gender inequality is based on the crucial role of skills, competencies, and abilities regardless of gender. The gender imbalance has been overcome in countries with a high level of women's competence. Competence is a new paradigm in overcoming gender inequality.

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1. Introduction

Gender issues in the field of education are actively discussed at various educational levels. Among the basic problems, the most pressing is as follows: The globalization of the gender gap,


inequality in education and its impact on income, fertility, quality of human capital, factors and drivers of reducing gender inequality in education. Overcoming gender imbalances in advanced countries ([Grow and Van Bavel, 2015](#)) is explored in the context of the significant contribution of national government policy. However, few studies have been focused on the economic background of gender issues and their importance in addressing gender inequalities in education.

The present research examines the relationship between economic structure and gender inequality in education, the role of the technological factor as a driver of change in labor market needs.

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Requirements of employers for quality human capital and mental abilities of staff through the automation of production processes in various industries make it possible to level the sex as a factor in the selection and hiring of employees. In today's world, mental abilities and digital skills are crucial, and, therefore, education should be aimed at developing these components of an effective worker regardless of gender. Gender is leveled in various sectors of the economy, in the sphere of science, in particular, due to the increasingly significant role of human capital as a factor of production.

The purpose of the study is to identify the trends and dynamics of gender changes in education, the level of gender inequality and establish the causes and effects of gender asymmetry in some European countries.

According to the purpose of the research, the following objectives have been formed, namely:

1. To assess the level of gender inequality in education in Germany, France, Poland, and Ukraine.
2. To identify the effects of gender inequality for the analyzed countries (impact on the fertility rate and employment in different sectors of the economy).
3. To reveal differences in the structure of education on the basis of gender.
4. To identify the causes and factors of gender asymmetry in the studied countries.

2. Literature review

The scientific literature examines the issues of gender convergence in the education sphere and its impact on labor remuneration inequality and fertility rates. Myers and Griffin (2019) argued about expanding gender inequalities due to globalization and under-representation of women in colleges: "The literature generally recognizes gender imbalances in international education". García-Holgado et al. (2018) paid attention to global inequality in the spheres of mathematics, engineering, technology: The share of women working in the technology sector is 25%. Gender disparities in international higher educational institutions are unlikely to be due mainly to gender disparities at lower levels of education in the countries of origin of female students (Myers and Griffin, 2019). This means that women's secondary education does have little effect on women's ability to obtain higher education abroad.

Changes in education have an impact on wages due to changes in salary rates and changes in labor supply. Education determines the fertility rate in a country and can be a key factor in the gender pay gap (Van Bavel, 2012; Kleven and Landais, 2017). Reducing gender inequality also leads to a change in the value system in the society: the role of women and men, rights and responsibilities (Kleven and Landais, 2017). At the same time, the values of the society (religious beliefs, cultural features, and

views, social-economic values) influence gender inequality (Jayachandran, 2015; Irmiya et al., 2019). Another important factor in reducing inequality in education is economic development (Jayachandran, 2015) through such channels, as: "income elasticity channel, technological progress and changes in women's property rights... expansion of the service sector that, as a consequence, a rise in the female labor force participation" (Cuberes and Teignier, 2014). Economic growth and gender inequality are characterized by feedback links: Due to the reduction in the fertility rate, a demographic transition is taking place- the process of an irreversible decline in the birth rate in the country and the rapid growth of production (Cuberes and Teignier, 2014). Minasyan et al. (2019) proved that women's education level has a greater impact on economic growth than men's one. Klasen (2002), and Klasen and Lamanna (2009) found out an inverse relationship between gender inequality in education and employment and economic growth: Gender inequality slows down economic growth by reducing the quality of human capital. The growth of production is possible due to physical labor and human abilities and capacities. Forasmuch as women are more likely to develop abilities, reducing inequality leads to an improvement in overall human capital. Women have a greater comparative advantage in mental work, which increases capital intensity, and as a result-economic growth and higher wages for women. At the same time, the growth of wages leads to a reduction in the fertility rate due to the higher level of women's participation in the labor market. It should be noted that in developing countries, the driving force towards narrowing the educational gap is the socialization of women, namely the social sciences (Irmiya et al., 2019). An increase in education leads automatically to a higher level of human capital for future generations.

A classical economic theory of fertility rate postulates the effect of substitution between the quantity and quality of human capital in the future as a result of reducing educational inequality (Becker and Lewis, 1973): An increase in human capital per child (quality) leads to a decrease in the number of children (quantity). As Lagerlöf (2003) noted, gender equality in education has a positive effect on economic growth through its impact on the fertility rate and human capital. The reason is that the opportunity cost of human capital ("child's punishment") is higher than the condition of its highest quality. Conversely, a change in the fertility rate can lead to the accumulation of human capital and the demand for education. Therefore, it is important to empirically confirm the effects of education/quality of human capital and fertility rate in order to ensure the evolution of gender inequality in the long run. For instance, the decomposition of effects of education and birth rate has been conducted in an empirical study of Kleven and Landais (2017), and the influence of these factors on wage inequality based on correlation analysis.

Kleven and Landais (2017) in their scientific work have assessed the gender gap at different levels of education and gender differences in the proportion of men and women with higher education and their impact on wages and labor supply. The study proves an increase in women's education with the growth of GDP per capita: The gender gap in education rises from 5% to 8%; consequently, this means an increase in the level of education of females compared to males (Kleven and Landais, 2017). As a result, on average, women's income is 25 thousand USD bigger to compare with men's one. Along with this, the gender gap in education has been reduced in high-income countries (Kleven and Landais, 2017). As a result of the reduction of gender inequality, a gender convergence of incomes is taking place (Goldin, 2014).

Education and a decrease in fertility rates help reduce gender wage inequality, however, the effects of lower birth rates far outweigh the effects of education. The income gap due to declining fertility rates drops sharply from about 35% to about 10% forasmuch as per capita GDP grows from 5 000 USD to 50 000 USD. The wage gap lessens from about 5% to 0% due to the rising educational levels of women (Kleven and Landais, 2017). The basic reasons for the relatively small effect of education on reducing the wage gap are as follows: 1) the insignificant difference in education between men and women compared to the significant difference in the birth rate; 2) the impact of education on gender income inequality is reduced through the birth of children (Goldin, 2014; Kleven et al., 2019). Kleven et al. (2019) based on Danish data have proved a long-term gender income gap (20%) in the case of childbirth based on wage data, hours worked and women's participation in work.

Riegle-Crumb (2019) systematized the basic features of gender issues in education as follows:

1. Women and men in education are characterized by similar results, and the differences revealed are extremely small.
2. In higher education, the level of female presence is higher in such specialties, as social, natural sciences, law, healthcare, while men prefer computer science and engineering.
3. There are different shifts in the education of women and men at school, and both sexes react differently to the educational environment.

Vinokurova (2015) proved the existence of gender problems in education due to the low level of remuneration of women-scientists compared to men-scientists, in particular, due to lack of funding in the field of research and development.

Thus, the insignificant role of education in reducing gender inequality has been recognized in the scientific literature. However, the education of women plays an important indirect role in the long term: this factor determines the level of education of future generations, which naturally increases due to the growth of human capital quality. For instance,

recent studies have proved the mediated indirect effect of education on reducing gender gaps: the effect of education grows during the average period of a person's life cycle.

3. Methodology

Correlation analysis was used in the present research in order to assess the strength of the relationship between potential causal factors and gender inequality in education (Myers and Griffin, 2019). Spearman's correlation coefficient, a nonparametric statistical test has been used to eliminate the problem of nonnormal law distribution, which leads to biased estimates. To study gender inequality in education, these indicators are selected: Adolescent Fertility Rate; Fertility Rate; Gender Parity Index (GPI).

Statistical analysis has been performed using SPSS (version 24.0, IBM, Armonk, NY, the USA) based on World Bank indicators that characterize the gender issues of Germany, France, Poland, and Ukraine. These countries have been selected for analysis, taking into account various economic preconditions for gender inequality, in particular: 1) the level of economic development and economic resilience to external shocks; 2) the structure of the economy, and the employment of women and men in various sectors of the economy (agriculture, industry, services), in particular; 3) various problems of gender imbalance. These criteria have ensured a comparison of the gender issue and the relevance of the theory to the practice and experience of countries in addressing the issues outlined.

4. Results

Within the Eurozone, females' enrollment in higher education has doubled in twenty years (1991-2018) (Fig. 1). The European countries are differentiated by gender equality in higher education, namely: In 1991, in Germany, the enrollment of women to higher education institutions amounted to 30,1%, in France-42,5%, in Poland-24,6%, in Ukraine-45,9%. This can be partly explained by the structure of higher educational institutions. For instance, in Ukraine in 2019-2020, 68% of students are women in the following fields of knowledge, namely: Education, humanities and arts, social sciences, business, law, natural sciences, health care, and services. The most in-demand areas are as follows: Health (15 091 female students), social sciences, business and law (4684 female students), humanities (14270 female students), and education (847 female students). Herewith, the direction of engineering knowledge amounted to 2490 male and 600 female students (24%), the share of female students in the field of construction and architecture amounted to 23%, transport-10%, the agricultural sector-37%, engineering, and energy-7%. Such distribution of students of higher educational institutions in 2019-2020 generally

characterizes the supply of labor, while the needs of the labor market given the structure of the Ukrainian raw material economy differ significantly, taking into

account the latest trends in the automation of industry and the agricultural sector.

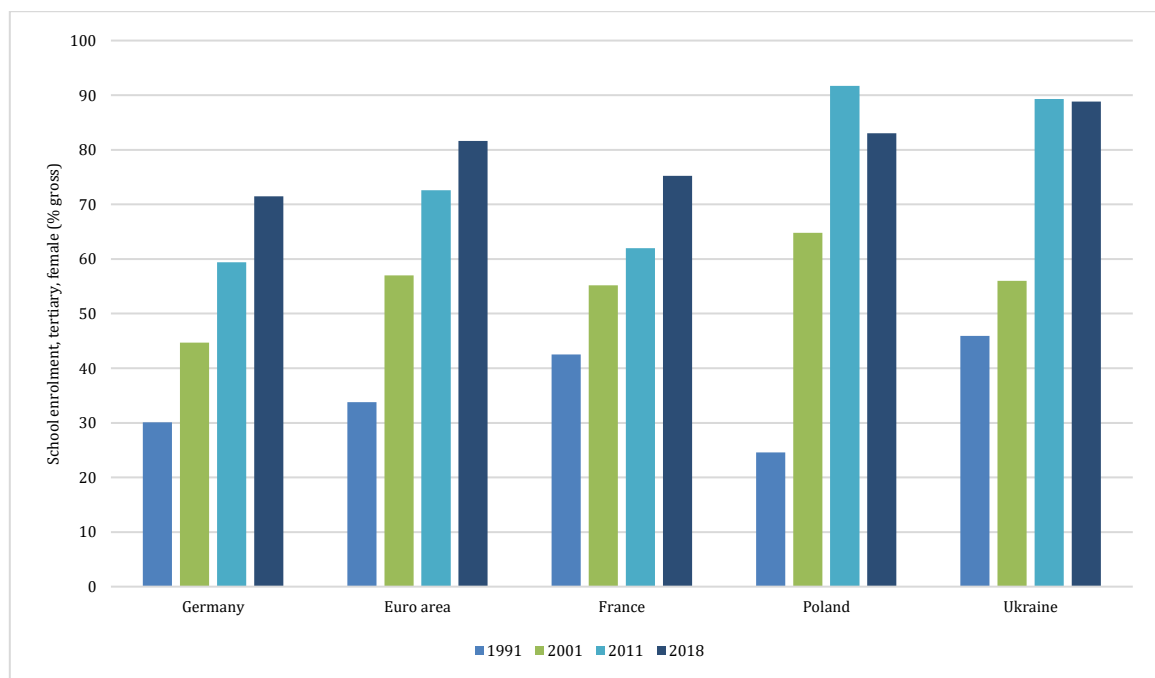


Fig. 1: School enrollment, tertiary, female (% gross), 1991-2018 (WBG, 2021a)

The level of education (bachelor's degree, men over 25) differs in the countries under consideration: In Germany–29,35% of the total population over 25 in 2018; in France–18,52% in 2017; in Poland–21,86% in 2016. For comparison, the indicator among women over the age of 25 was as follows: In Germany–21,09% in 2018; in France–17,53% in 2017; in Poland–27,71% in 2016. For comparison, in Ukraine, the share of students who graduated from colleges, technical schools, and colleges in 2019-2020 was 12% and higher educational institutions–88%. Thus, the structure of students in educational institutions differs significantly, which leads to discrepancies in gender inequality. This means significant differences in the accessibility of education for women in Ukraine due to the high number of students in such specialties, as social sciences, health care, education, and the humanities. At the same time, the quality of human capital remains low due to the lack of labor productivity growth.

The level of education among men who completed higher educational institutions on a short-term basis was as follows: In Germany–30,09% in 2018; in France–29,29% in 2017; in Poland–21,86% in 2016; among women: In Germany–21,55%; in France–30,88% in 2017; in Poland–27,88% in 2016.

Completed incomplete secondary education is available to almost 100% of women in different countries. The level of education among women was as follows: In Germany–96,12% in 2018; in France–81,89% in 2017; in Poland–82,85% in 2016; among men: In Germany–96,55%; in France–86,79% in 2017; in Poland–88,08% in 2016. At the same time, the level of completed post-secondary education is

much lower among women: In Germany–33,59% in 2018; in France–30,97% in 2017; in Poland–32,51% in 2016. Whereas the indicator does not differ significantly among men, namely: In Germany–37,66% in 2018; in France–29,39% in 2017; in Poland–23,24% in 2016. The level of complete secondary education is high in all countries. The indicator among women is as follows: In Germany–80,11% in 2018; in France–67,4% in 2017; in Poland–82,54% in 2016; among men: In Germany–86,49% in 2018; in France–73,03% in 2017; in Poland–87,43% in 2016.

Differences identified in the structure of education and levels of education in Germany, France, Poland, and Ukraine affect economic growth, the structure of employment of women and men in different sectors of the economy, and the fertility rate. In particular, in Ukraine, the fertility rate of adolescents was 59 births per 1 000 women aged 15-19, while in Germany–16, in France–8, in Poland–30. The situation has changed over twenty years: The figure has declined significantly in all countries (Table 1). The crude fertility rate is as follows: 1,57–in Germany, 1,53–in France, 1,88–in Poland, and 1,3–in Ukraine. This means that there are other reasons for gender inequality in education in Ukraine, which, in general, have not influenced the birth rate. Whereas within the Eurozone countries, it was the reduction in gender inequality that was one of the factors in the fertility rate decline, especially among women aged 15-19.

The Gender Parity Index (GPI) is the gross enrollment rate in a tertiary education-the ratio of women to men obtaining higher education in private and public educational institutions. As the data of

correlation analysis have evidenced (Table 2), in Germany, there is a direct relationship between the GPI and the fertility rate in the sphere of primary education and higher education, while it is inverse in

the sphere of secondary education. The same trends are observed in the Eurozone countries as a whole, France, and Ukraine.

Table 1: Adolescent fertility rate and fertility rate in Europe, 1991-2018 (WBG, 2021b; 2021c)

	1991	2001	2011	2018	Absolute growth, +/-
Adolescent fertility rate (births per 1,000 women aged 15-19)					
Germany	16,12	12,52	8,40	7,86	-8,26
Eurozone	13,52	10,74	8,18	6,50	-7,02
France	8,40	7,79	6,77	4,74	-3,66
Poland	29,98	16,20	14,65	10,17	-19,81
Ukraine	58,78	32,13	28,44	23,00	-35,78
Fertility rate, total (births per woman)					
Germany	1,33	1,35	1,39	1,57	0,24
Eurozone	1,49	1,46	1,56	1,53	0,04
France	1,75	1,90	2,01	1,88	0,13
Poland	2,07	1,31	1,33	1,46	-0,61
Ukraine	1,77	1,09	1,46	1,30	-0,47

For comparison, in Poland, a direct link has been found between GPIs in secondary and higher education, while an inverse relationship has been revealed in primary education. This may mean that in the EU, as a whole, the growth rate of higher education increases, that is, with the growth of the number of women in the sphere of primary, higher

education, the fertility rate increases, while with the growth of the number of women in the sphere of secondary education - the fertility rate decreases. In Poland, with an increase in the number of women with primary and higher education, the fertility rate decreases.

Table 2: Correlation matrix of the relationship between the general fertility rate and GPI by levels of education in the Eurozone and Ukraine (according to 1991-2018) (WBG, 2021d; 2021e; 2021f)

Country	Fertility rate, total (births per woman)		
	School enrollment, primary (gross), gender parity index (GPI)	School enrollment, secondary (gross), gender parity index (GPI)	School enrollment, tertiary (gross), gender parity index (GPI)
Germany	0,532	-0,614	0,875
Eurozone	0,415	-0,698	0,597
France	0,726	-0,111	0,556
Poland	-0,506	0,683	-0,563
Ukraine	0,740	-0,474	0,334

Forasmuch as there is practically no gender inequality in education in the EU countries (Table 3), women generally have the same level of access to education at all levels; the correlation relationship indicates that secondary education, with the exception of Poland, has a negative effect on fertility. Consequently, Poland has high GPI values for 1991-2018 (Table 3), and in 2011, the highest enrollment rate of women in secondary education was observed. At the same time, the enrollment of women in higher education institutions within the Eurozone as a whole is growing, while in Poland in 2018, the indicator decreased to 83%. It is also worth considering the share of women enrolled in

secondary education: in Germany, the share of women in secondary education amounted 49% in 1992, 49,7% in 2001, 49,6% in 2011 and 49,3% in 2017; in France-51,3% in 1991, 50,5% in 2001, 50,4% in 2011 and 50,3% in 2017; in Poland 55,6% in 1991, 54,2% in 2001, 53% in 2011, 52% in 2017. This means that the structure of the population as a whole affects the structure of students, and, subsequently, the structure of those enrolled in higher educational institutions. This is precisely why an inverse relationship was observed between the fertility rate and GPI in Poland: there are more women than men in the structure of students in secondary education.

Table 3: School enrollment, tertiary, female (% gross) and GPI total (all education level) in Eurozone and Ukraine, 1991-2018 (WBG, 2021a; 2021d; 2021e; 2021f)

Indicator	1991	2001	2011	2018	Growth, +/-
School enrollment, tertiary, female (% gross)					
Germany	30,1	44,7	59,4	71,5	41,4
Eurozone	33,8	57,0	72,6	81,6	47,8
France	42,5	55,2	62,0	75,2	32,7
Poland	24,6	64,8	91,7	83,0	58,4
Ukraine	45,9	56,0	89,3	88,8	42,9
Average School enrollment, primary, secondary, tertiary (gross), gender parity index (GPI)					
Germany	0,907	0,950	1,031	0,993	0,086
Eurozone	0,989	1,039	1,045	1,048	0,059
France	1,060	1,054	1,069	1,066	0,006
Poland	1,089	1,091	1,117	1,100	0,011
Ukraine	1,101	1,045	1,046	1,046	-0,056

In Ukraine, the share of women in secondary education amounted 51% in 1993, 49,7% in 2001, 49% in 2011, 49,5% in 2018. This means that there is a direct cause and effect relationship between gender equality and fertility: The birth rate structure determines the future structure of primary and secondary education students. The structure of students in higher educational institutions is determined by the birth rate and the number of students at primary and secondary education institutions, the structure of educational institutions, and the offer of educational programs of higher educational institutions, which, in turn, are determined by labor market needs. The needs of the labor market are determined by the structure of the economy and national policy towards supporting, limiting, and stimulating the development of certain industries. For instance, in 1991-2018, in all the EU

countries, women's employment in the agricultural sector and industry decreased more rapidly than men's employment (Table 4). The relative share of women employed in the agricultural sector and industry is much smaller than men. This means that technology and automation of production cause changes in the structure of the economy, the needs of the labor market in specialists; as a result, the structure of enrollment in educational programs of higher educational institutions are changing. This indicates that progress in the most science-intensive and technologically advanced sectors of the economy determines the overall need for the labor of both sexes. Herewith, the employment of men in these areas still prevails, and, accordingly, this means a higher level of enrollment in educational programs for men compared to women.

Table 4: Employment in agriculture and industry in Europe, 1991-2018 (WBG, 2021g)

Country	1991	2001	2011	2018	Growth. +/-
Employment in agriculture, female (% of female employment) (modeled ILO estimate)					
Germany	3,39	2,07	1,18	0,85	-2,54
Eurozone	6,70	4,18	2,52	1,91	-4,79
France	4,95	2,84	1,89	1,38	-3,57
Poland	26,36	19,44	12,25	8,41	-17,95
Ukraine	26,00	25,67	19,72	12,05	-13,95
Employment in agriculture, male (% of male employment) (modeled ILO estimate)					
Germany	3,55	3,05	2,04	1,60	-1,95
Eurozone	7,72	5,85	4,37	3,98	-3,73
France	6,83	5,07	3,82	3,53	-3,30
Poland	24,93	19,00	13,44	10,59	-14,34
Ukraine	24,22	26,25	20,93	16,61	-7,61
Employment in industry, female (% of female employment) (modeled ILO estimate)					
Germany	21,93	17,88	14,19	13,95	-7,98
Eurozone	19,93	16,38	12,03	11,58	-8,36
France	15,98	13,94	10,54	9,58	-6,40
Poland	24,47	18,52	16,51	17,37	-7,10
Ukraine	20,83	16,21	15,23	13,89	-6,94
Employment in industry, male (% of male employment) (modeled ILO estimate)					
Germany	48,91	44,51	40,19	39,00	-9,91
Eurozone	41,89	39,48	35,54	33,68	-8,22
France	37,58	35,80	32,58	30,06	-7,52
Poland	45,67	40,75	42,07	43,47	-2,20
Ukraine	37,82	32,44	35,42	34,48	-3,34

Technology has affected the structure of the economy: The service sector is developing within the EU, which leads to increased employment of men and women in these areas as a result, citizens should

be offered educational programs in this sphere in order to address gender inequalities. It should be noted that the share of employed women in services exceeds the share of men in all countries (Table 5).

Table 5: Employment in services in Europe, 1991-2018 (WBG, 2021g)

	1991	2001	2011	2018	Growth. +/-
Employment in services, female (% of female employment) (modeled ILO estimate)					
Germany	74,68	80,06	84,63	85,21	10,53
Eurozone	73,37	79,45	85,45	86,52	13,15
France	79,08	83,23	87,57	89,04	9,96
Poland	49,17	62,05	71,25	74,22	25,05
Ukraine	53,17	58,12	65,05	74,06	20,89
Employment in services, male (% of male employment) (modeled ILO estimate)					
Germany	47,54	52,45	57,77	59,40	11,86
Eurozone	50,39	54,66	60,09	62,34	11,95
France	55,59	59,13	63,60	66,41	10,82
Poland	29,41	40,25	44,49	45,94	16,53
Ukraine	37,96	41,31	43,65	48,91	10,95

Thus, the analysis of the employment of women and men in the agricultural sector, industry, and services makes it possible to draw an important conclusion about gender inequality in education.

Production automation and dynamic development of technologies lead to the growth of the service sector, in which the requirements for specialists relate to mental abilities and skills. Accordingly, manual labor

is being replaced by automated labor; the demands of the labor market relate to digital skills and abilities; consequently, women's mental labor is increasingly involved in services. Gender inequality in education depends on national policies that affect the structure of the economy through support, stimulation of innovative industries, and technology on the one hand or through constraints on the other hand.

5. Discussion

In the Eurozone countries, the level of female education is equal to the level of male education; in Ukraine, there are more highly educated women than men due to the structure of educational programs and specialties (Grow and Van Bavel, 2015). The prevalence of supply in the market of educational services of such specialties as natural and human sciences, health care, social sciences, business, and law, the service sector is due to the structure of the economy. Within the Eurozone, the structure of the economy was transformed in 1991-2018 because of the automation of agricultural and industrial production in favor of new high-tech sectors, which are poorly developed in Ukraine. This has significantly affected the reduction of gender inequality due to the need of the labor market for workers with high mental abilities, digital skills. However, the employment of men in these sectors is higher than that of women. Obviously, this situation will remain. In the service sector, on the other hand, female employment is much higher and has increased within the Eurozone. It can be assumed that gender inequality in education is a consequence of the country's existing economic structure, which is influenced by national government policies. Changing the structure of the economy through automation has ensured an increase in women's employment in the service sector and solving gender issues.

Therewith, it should take into account the internal features of each country, which play a key role in gender inequality in education. For instance, there is no feminist consciousness in Poland, and gender inequality is explained as a consequence of the way the public and private spheres of socialism function. (Watson, 1992). Poland's transition to a market economy has led to the transformation of gender roles, reassessment of gender identity (Watson, 1992). Similar trends can be observed in Ukraine, where actually the absence of a feminist movement and changes in the roles of various sexes are not the basic reasons for gender imbalance. Gender education in Poland was built on religious beliefs (Catholicism) during the socialist period, which determined the gender specificity in this country (Lišková et al., 2020). Educational programs affect a person's gender identity. As a result, there is a gender imbalance in Poland, manifested in the influence of gender on the professional activities of graduates of higher educational institutions: women with technical specialties receive lower wages and

spend more time looking for a job (Tomczak, 2018). By comparison, the Bologna Process in Germany has eliminated gender asymmetries in education by introducing new rules in universities (Müller, 2007). At the same time, there are still gender issues in the country, especially in the sphere of higher education, and the subject area determines the gender gap. This means that men are more competent in some subject areas, and, at the same time, women have a higher level of knowledge in the other ones (Winkelmann et al., 2008).

Cooray and Potrafke (2011) have proved the crucial role of religion and culture in influencing gender inequality, while political institutions are not important. Autocratic regimes do not discriminate against women in education; democracies do not allow sex discrimination. The considered practice of the European countries confirms these hypotheses. At the same time, political institutions indirectly influence economic inequality through economic mechanisms in the case of supporting those areas where women are less competent.

The gender gap is eliminated due to the convergence of males' and females' roles, changes in the labor market, the structure of jobs, and higher pay for women. The most noticeable reduction in the gender gap is observed in science, technology, and health care. However, gender inequality still exists in the corporate, legal, and financial sectors (Goldin, 2014).

Despite the fact that Bertay et al. (2020) have proved the causal influence of gender inequality on the growth of value-added and productivity in some sectors with higher employment of women, the experience of Ukraine shows the lack of such a link. This is explained by the structure of the economy and the competencies of women, which are not influenced by education, who are solely the responsibility of the employee regardless of gender.

This study has potential limitations associated with poor access to statistical data from non-EU member countries and a lack of probability sampling.

6. Conclusion

So far, gender inequality in education has been considered in the context of inequality in women's access to technical specialties, the impact of education on the fertility rate and wages of women, the impact of religious, cultural, social-economic values on women's education level. Classical economic theory postulates the improvement of the quality of human capital through the growth of female education. However, this concept does little to explain the gender imbalance and low quality of human capital in an environment where women have access to education in any field of knowledge through a feminization in the Eurozone countries. Beyond that, this concept does little to explain why in countries such as Ukraine, where female education is higher than male, economic growth is unstable, despite the high proportion of men

studying at technical specialties, and fertility rates are declining.

In the present research, we propose a new theory of gender imbalance in education. Analysis of indicators characterizing the level of education of women within the Eurozone countries shows the decisive role of the structure of the economy and the needs of the labor market in specialists with digital skills and mental abilities. The structure of the economy and the efficiency of the functioning of various sectors ensure the reduction of gender inequality in education, contributing to economic growth in general and the growth of GDP per capita. The growth of the service sector determines the need of the labor market to find professionals with mental abilities, which means equal opportunities for men and women to get a job. The high relative share of women's employment in the service sector in Ukraine's economy, the high level of female education, and access to education, still have not provided a solution to gender issues in education.

Technologies and automation of production processes in various sectors of the economy lead to a reduction in the need for physical labor. Therefore, women have the opportunity to be employed in areas such as the agricultural or industrial sector, where work requires more mental ability than physical. Changes in labor market requirements for employee qualifications allow women to find a job faster due to a high level of education. Thus, technological changes are transforming classical perceptions of gender inequality: nowadays, highly educated women can compete with men even in labor-intensive and technological industries. This means that the proposed paradigm of gender inequality is based on the crucial role of skills, competencies, and abilities regardless of gender. After all, women have managed to overcome gender imbalances in countries with a high level of competence.

Further investigations should be concerned with testing hypotheses regarding the significance of the influence of women's competencies in education as a key factor in solving the issue of gender imbalance.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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