

The Educational and Professional Careers of Women in Poland

Dorota Raczkiewicz

Warsaw School of Economics, Poland

Marta Dolecka

Maria Curie-Skłodowska University in Lublin, Poland

Abstract

Both women and men in their lives have at least two careers: educational and professional. These careers can differ according to gender. The aim of this paper is to analyze educational and professional career differences between men and women using some macro indicators to correlate these two career indicators, as well as to investigate the diversity of the indicators among regions in Poland and other European Union countries, and to establish the position of Poland within the EU with respect to these indicators.

Introduction

The system transformation forced Polish people to change their perception of the world. Since 1989, their life aspirations have increased significantly and visibly, and this includes professional careers and education. Both women and men look for ambitious and well-paid jobs according to their educational levels and professional qualifications. However, the status of both genders is not the same. Women must demonstrate greater determination in order to achieve a prestigious position in society and on the labor market. Although social patterns and roles have been transformed, it seems that the opinion “home is a woman’s world and the world is man’s home” is still common.

The issue of equality between women and men in political, social and economic life has come under consideration recently. It is connected with the system transformation and the growing role of women in public life. The first legal step towards equality between women and men was when women were given the right to vote in 1918 in Poland and France, in 1914 in Germany, and at similar dates in other European countries. It provided a formal basis for changes in the political and social situation of women. Previously women had limited access to education, especially higher education. This situation changed at the turn of the 20th century, when institutions dedicated to the professional education of women were established. There were 125 lower and secondary vocational schools, training and professional courses for women in the interwar period in Poland (Ceysingerówna 1924). During the 20th century women more and more often attended universities. Nowadays in Poland and Europe there are more women than men among tertiary students.

Inequalities between women and men in educational levels and on the labor market are commonly known (Reszke 1976; Żarnowska and Szwarc 2000; Domański 1995). In the opinion of the authors of the Millennium Development Goals report, prepared on request of the United Nations, job opportunities for women are on average fewer than for men. There appears to be a significant predominance of women among the long-term unemployed. In addition, women earn on average less than men. Disparity in the position of men and women also applies to professional positions; women rarely have managerial positions in comparison to men (Wóycicka et al. 2002). According to the third of the eight UN Millennium Development Goals, inequalities between women and men on the labor market should be reduced by 2015 in order to achieve progress in social development

(*The Millenium Development...* 2011). Indicators of these changes are: closing the gap in the unemployment rate for women and men, and achieving a ratio of long-term unemployment among women to the long-term unemployed equal to 1.

From the point of view of labor force supply, the worse situation for women could be explained by lower investment in the human capital of women (Becker 1993). However, from the point of view of labor force demand, the worse position for women on the labor market could be explained by the different approach of employers to employees of both genders. Employers usually think that women are worse workers because they are less committed to work and less mobile than men. It is well-known that women have special family responsibilities, firstly because they give birth to children, and secondly, that women need to be more involved in the household, they often have more household duties, and they often care for their children and older relatives. According to Becker's theory, a woman is responsible for the care of her children and hence her career is interrupted by the duration of maternity or is initiated after raising children (Becker 1991). In addition, it is difficult for women to get back into the labor market after the interruption of work for the duration of maternity and child-rearing. About 10% of women whose youngest children are of kindergarten age enter the labor market and do not find employment (Sztanderska and Grotkowska 2007). However, men's professional career breaks can occur only in the case of education. Older men are seen by employers as better employees in terms of involvement in paid work. For younger workers, the investment in the human capital of women and men is more and more similar, which is due to greater access to education, changes on the labor market and changes in the perception of life roles of women and men (Becker 1993; Blossfeld and Drobnič 2001). Many results of the analyses of educational and professional activities of women have been presented (Kotowska 2009; Kotowska, Sztanderska, and Wóycicka 2007).

In the short run, an educational career can compete with a professional career. The longer people attend school the later they begin their first job. The earlier people begin their professional work the less time they spend on education. But in the long run, an educational career can be conducive to a professional career by providing a greater opportunity to get a better job and a higher salary.

1 Purpose, hypotheses, data and methods

The aim of this paper is to analyze educational and professional career differences between men and women using some macro indicators, to correlate these two career indicators, as well as to investigate the diversity of the indicators among regions in Poland¹ and other European Union countries, and to establish the position of Poland within the European Union with respect to these indicators.

Hypothesis 1: There are still remarkable inequalities between men and women in educational level and on the labor market. Hypothesis 2: There is significant correlation between the educational and professional careers of women. Hypothesis 3: There are regional (among Polish regions) and international (between EU countries) differences in the educational level of women, as well as in their position on the labor market. Hypothesis 4: Poland is in an intermediate position in terms of educational and professional career indicators of women.

The statistical data were collected from the Central Statistical Office (GUS) in Poland as well as the European Union Statistical Office EUROSTAT. All efforts were made to use data as recent as possible at the time the paper was written. For the educational career indicator the educational structure of the population by gender and share of women among tertiary students in regions of Poland and in other European Union countries were used. Polish data came from population censuses conducted about every ten years in Poland and throughout the world. The activity rates, employment rates and unemployment rates by gender were used as professional career indicators. The activity rate was calculated as the share of the economically active (employed and unemployed) in the population aged 15 years and over. The employment rate was calculated as the

1. Poland is divided into 16 regions (voivdships) on level NUTS 2.

share of employed persons in the population aged 15 years and over. The unemployment rate was calculated as the share of the unemployed persons in the economically active population. Polish data came from the Labor Force Survey, conducted in Poland since 1992.

Pearson's correlation coefficients between indicators of the two careers were calculated. The activity rates, employment rates and unemployment rates for women in Poland by their educational level were analyzed. The data analyses for regions in Poland and other European Union countries used descriptive statistics such as minimum, maximum, arithmetic means, standard deviation, coefficient of variation and skewness.

2 Time series of macro indicators of careers of women in Poland

2.1 Time series of macro indicators of educational careers of women in Poland

The structures of education in Poland differed between women and men in 2011 and before as well. In addition, each of them has significantly changed. Figure 1 presents the structure of education of women compared to men in 1960 and in the following years when population censuses were carried out in Poland. In 1960 57,4% of men and a slightly lower proportion of women (52,6%) had primary education at least.² People with secondary or primary education strongly dominated among the educated people of both genders. 38,5% of men and 40,0% of women had secondary or primary educational levels. 5,1% men and a lower percentage of women (1,5%) had basic vocational education. A similar proportion of women (9,9%) and men (10,7%) had secondary or post-secondary education. Only 3,1% of men and a smaller percentage of women (1,2%) had tertiary education.

The structure of education of the population by gender in Poland has significantly changed over the past 51 years. In 2011 the situation in terms of tertiary educational level was the opposite of half a century ago. A higher proportion of women (19,0%) vs. men (14,8%) had tertiary education in 2011. More men (27,9%) than women (15,9%) had basic vocational education in 2011, as well as half a century ago. A similar proportion of women (33,8%) and men (29,1%) had secondary or

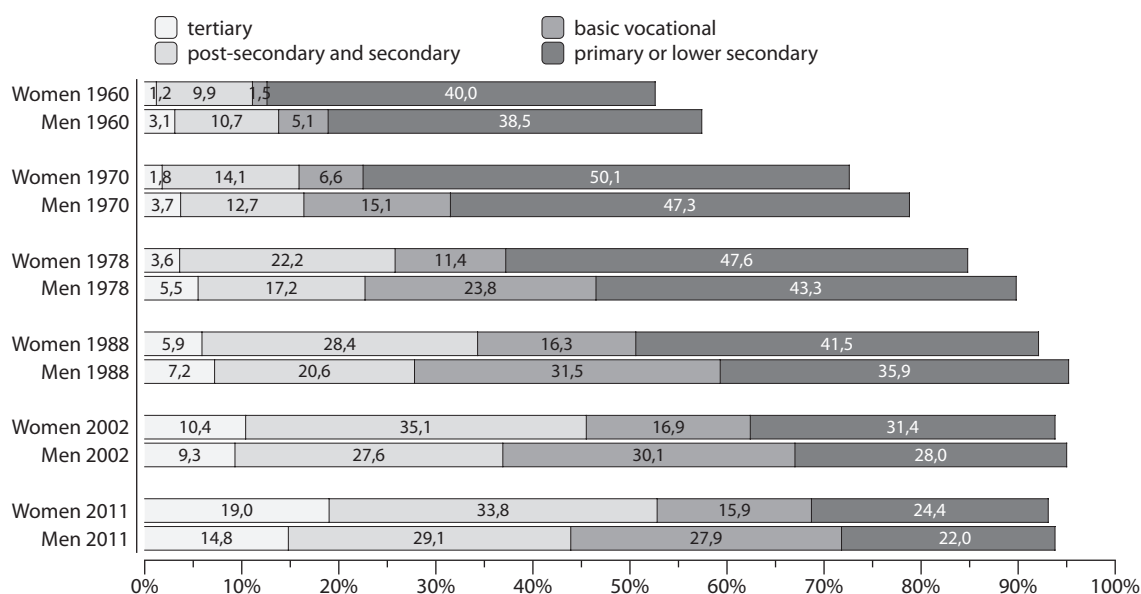


Fig. 1. The comparison of educational structure of population by gender in Poland in 1960, 1970, 1978, 1988, 2002, and 2011

Note: Missing data are sum to 100,0%.

Source: Author's analysis based on data from national censuses of population in Poland, CSO

2. [In the journal (in both Polish and English texts) European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style). Furthermore in the International System of Units (SI units), fixed spaces rather than commas are used to mark off groups of three digits, both to the left and to the right of the decimal point.—Ed.]

post-secondary education in 2011 as was the situation half a century ago. 22,0% of men and 24,4% of women had primary or lower secondary educational levels in Poland in 2011. The educational level of both men and women has improved very much, but there are still large differences in education according to gender.

The structure of the education of women living in urban and rural areas according to the last two population censuses (in 2008 and in 2011) were compared (fig. 2). There are differences in the educational level of women as a function of residence. The women living in urban areas in the past as well as now are still better educated than the women living in rural areas. In 2011 all the women in urban areas and 94,2% of women in rural areas had primary education at least. 23,2% of women in urban areas and only 8,7% of women in rural areas had a tertiary educational level. The women with secondary or post-secondary education (37,3%) dominated in urban areas, while women with primary or secondary education (33,3%) dominated in rural areas.

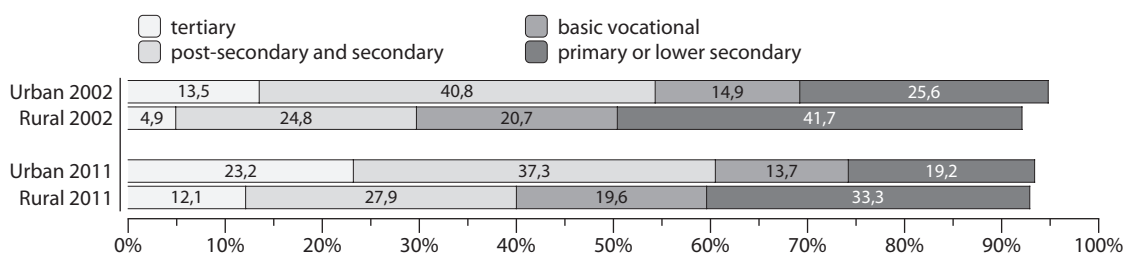


Fig. 2. The comparison of educational structure of women by residence in Poland in 2002 and 2011

Note: Missing data are sum to 100,0%.

Source: Author's analysis based on data from national censuses of population in Poland, CSO

2.2 Time series of macro indicators of professional careers of women in Poland

The indicators of professional careers of women in Poland differ from those for men and change over time (fig. 3). The activity rates of women in Poland were lower by about 15 percentage points than those of men from 1992 to 2012 (fig. 3A). In 1992 54,2% of women and 70,0% of men were

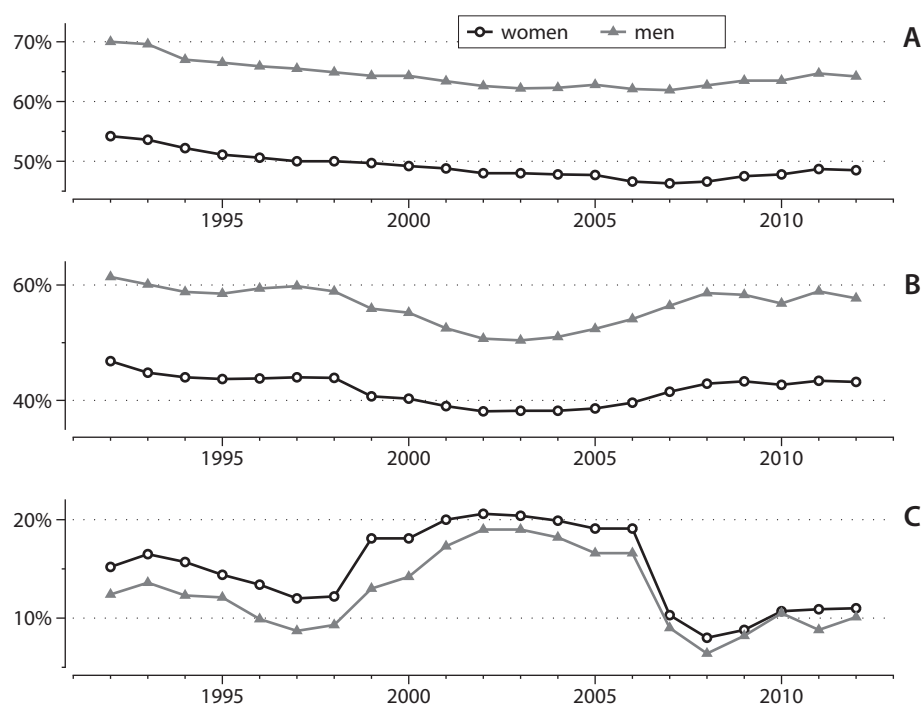


Fig. 3. Comparison of professional career indicators of population by gender in Poland in 1992–2012. *A*—activity rate, *B*—employment rate, *C*—unemployment rate

Source: Author's analysis based on data from Labor Force Surveys in Poland, CSO

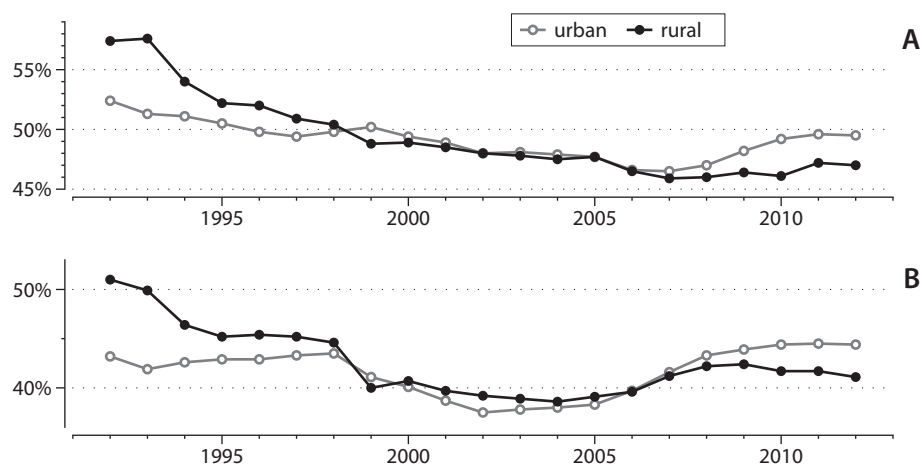


Fig. 4. Comparison of professional career indicators of women by residence in Poland in 1992–2012. *A*—activity rate, *B*—employment rate

Source: Author's analysis based on data from Labor Force Surveys in Poland, CSO

professionally active whereas in the 1st quarter 2012 these figures were 48,5% of women and 64,2% of men, respectively. Similarly, the employment rates of women in Poland were lower by about 15 percent points than those of men from 1992 to 2012 (fig. 3B). In 1992 46,8% of women and 61,4% of men were employed, while in the 1st quarter 2012 these figures were 43,2% of women and 57,7% of men, respectively. The unemployment rate from 1992–2012 was higher for women than for men (fig. 3C). 8,8% of men and 10,9% of women were unemployed in the 1st quarter 2012.

The indicators of professional careers of women in Poland differ by residence and change over time (fig. 4). The activity rates of women living in urban areas were lower than the women living in rural areas until 1998. Then, the situation was reversed, and since 2007 the difference has been more and more significant (fig. 4A). 49,5% of urban women and 47,0% of rural women were professionally active in the 1st quarter 2012. The employment rates of women living in urban areas were lower than for rural women until 2005. Then, this situation also changed radically (fig. 4B). 44,4% of urban women and 41,1% of rural women were employed in the 1st quarter 2012. The unemployment rates for urban women were lower than for rural women (in the 1st quarter—2012 10,2% and 12,6%, respectively)

2.3 Correlation between indicators of educational and professional careers of women in Poland

Polish women with tertiary educational level had the highest activity and employment rates and the lowest unemployment rate in comparison with women with other educational levels. Women in Poland with the higher level of education had a higher activity rate and employment rate, and also a lower unemployment rate than men at this level. The lowest educated women have the lowest activity and employment rates and the highest unemployment rate.

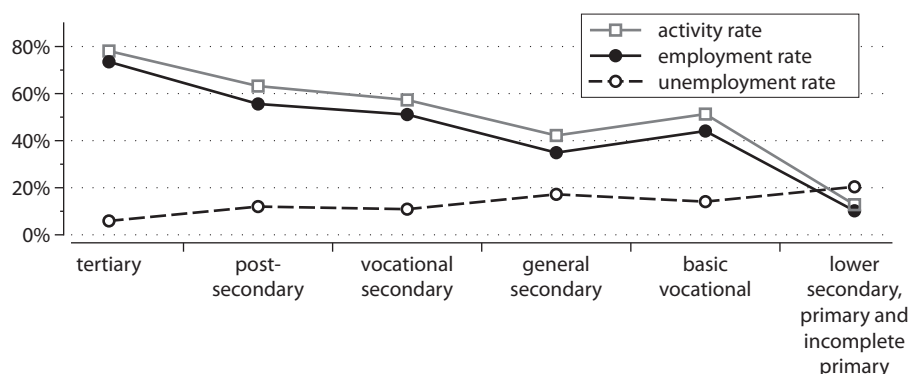


Fig. 5. Professional career indicators of women by educational level in Poland in the 1st quarter 2012

Source: Author's analysis based on data from Labor Force Surveys in Poland, CSO

78,1% of tertiary-level women, 63,2% post-secondary, 57,3% vocational secondary and 42,2% general secondary, 51,3% basic vocational, and 12,8% of lower educated women were professionally active in the 1st quarter 2012. 73,5% of tertiary-level, 55,6% post-secondary, 51,1% vocational secondary and 34,9% general secondary, 44,1% basic vocational, and 10,2% of lower educated women were employed in the 1st quarter 2012. 5,9% of tertiary-level, 12,0% post-secondary, 10,9% vocational secondary and 17,2% general secondary, 14,1% basic vocational, 20,4% of lower educated women were unemployed in the 1st quarter 2012. Women with general secondary educational levels had a worse situation on the labor market in comparison with secondary and basic vocationally educated women.

3 Macro indicators of careers of women by region (voivodhip) in Poland

3.1 Macro indicator of educational careers of women by region in Poland

One macro indicator of educational careers of women by region in Poland was analyzed. Figure 6 presents the share of women among tertiary students (in %) in Polish regions in the academic year 2010/2011. The share of women among tertiary students ranged from 57,2% in Dolnośląskie voivodship to 62,5% in Kujawsko-Pomorskie voivodship. The share of women among tertiary students was on average $59,4\% \pm 1,6\%$ and its variation between regions was low (the coefficient of variation was 2,6%). The distribution of the share of women among tertiary students was positively skewed (coefficient of skewness 0,4), it means that there was domination of the regions with the share of women among tertiary students below the arithmetic mean.

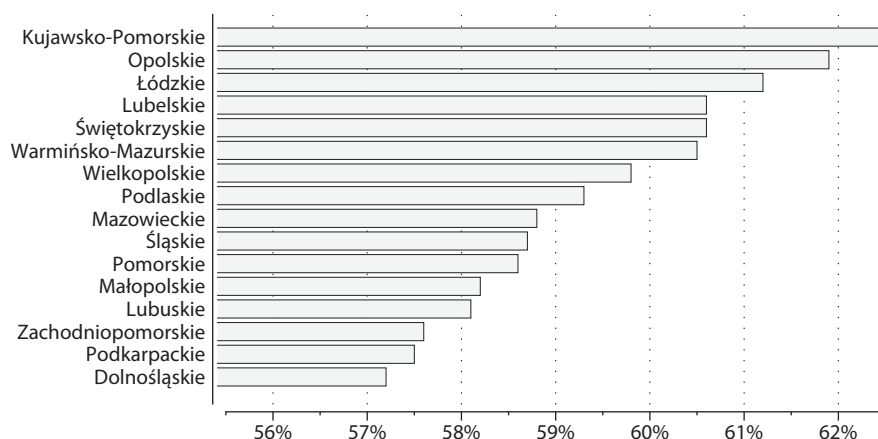


Fig. 6. Share of women among tertiary students in Polish regions in the academic year 2010/2011

Source: Author's analysis based on data from Statistical Yearbook of the Region 2009, CSO

3.2 Macro indicators of professional careers of women by region in Poland

Activity, employment and unemployment rates for women compared to men by region in Poland in the 1st quarter 2012 were analyzed (fig. 7). The activity and employment rates were lower for women than for men in all Polish voivodships. It means that a higher percentage of men than women was professionally active and a higher percentage of men was employed. The unemployment rates for women were lower than for men in three regions: Dolnośląskie, Lubelskie and Mazowieckie voivodships. Moreover, unemployment rates for women were higher than for men in other regions.

The activity rates for women ranged from 43,6% in Zachodniopomorskie to 52,8% in Mazowieckie, for men from 60,5% in Dolnośląskie to 69,2% in Mazowieckie. The average activity rate for women was estimated at $47,9\% \pm 2,2\%$, for men it was higher and estimated at $63,8\% \pm 2,4\%$. The employment rates for women ranged from 38,1% in Zachodniopomorskie to 49,2% in Mazowieckie, for men from 53,3% in Zachodniopomorskie to 63,4% in Mazowieckie. Average employment rates for women was estimated at $42,3\% \pm 2,4\%$, for men was higher and estimated at $57,1\% \pm 2,8\%$. The unemployment rates for women ranged from 6,8% in Mazowieckie to 15,9% in

Świętokrzyskie, for men from 7,1% in Wielkopolskie to 14,0% in Świętokrzyskie. Average unemployment rate was estimated at $11,7\% \pm 2,0\%$ for women and $10,6\% \pm 1,9\%$ for men. The activity and employment rates for both women and men did not differ much between regions in Poland (coefficients of variation were less than 6%). But the unemployment rates were more varied between voivodships in Poland (coefficients of variation were 17,2% for women and 18,2% for men).

The distributions of the activity and employment rates, for both women and men in Polish regions had a positive skew (skewness from 0,2 to 1,2). It means that there was domination of the regions with activity and employment rates below the arithmetic mean. The distribution of the unemployment rate in Polish regions had negative skew (skewness $-0,2$) for women and positive skew (skewness 0,1) for men. It means that there was domination of the regions with unemployment rates below the arithmetic mean for women and above the arithmetic mean for men.

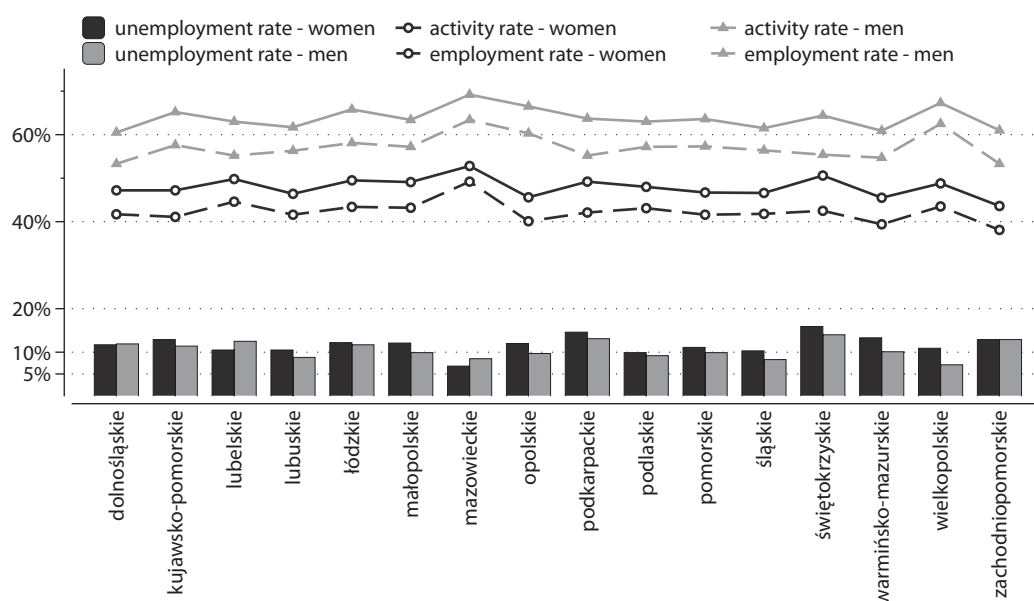


Fig. 7. Comparison of professional career indicators by regions in Poland in the 1st quarter 2012

Source: Author's analysis based on data from Labor Force Surveys in Poland, CSO

3.3 Correlation between indicators of educational and professional careers of women in Polish regions

Table 1 presents Pearson's correlation coefficients between indicators of educational and professional careers of women in Polish regions. Assuming a two-tailed significance level of 0,05, a significant correlation coefficient for 16 observations is above 0,497, calculated using the formula presented in (Nowak 2002). The data for 16 Polish voivodships showed that the share of women among tertiary students was not significantly correlated with any indicators of professional careers for both women and men. The same data showed a positive correlation between the activity rates for women and the activity rates for men ($r = 0,621$), the same situation for the employment rates ($r = 0,608$), and for the unemployment rates ($r = 0,701$) in Polish regions. The unemployment rates for both women and men correlated negatively to the activity and employment rates by gender, respectively.

4 Macro indicators of careers of women in European Union countries

4.1 Macro indicators of educational careers of women in European Union countries

Educational careers of women in EU countries were analyzed on the basis of the share of women among tertiary students in academic year 2010/2011 and the percentage of young people with an education level of at least basic vocational in 2007 (fig. 8). The share of women among tertiary students ranged from 46,1% in Cyprus to 62,7% in Latvia. Average share of women among tertiary

Tab. 1. Pearson's correlation coefficients between indicators of educational and professional careers of women in Polish regions

| Variable | Activity rate, women | Activity rate, men | Employment rate, women | Employment rate, men | Unemployment rate, women | Unemployment rate, men |
|--|----------------------|--------------------|------------------------|----------------------|--------------------------|------------------------|
| Share of women among tertiary students | 0,080 | 0,443 | -0,020 | 0,323 | 0,165 | 0,034 |
| Activity rate, women | 1 | 0,621 | 0,910 | 0,463 | -0,240 | 0,027 |
| Activity rate, men | | 1 | 0,632 | 0,905 | -0,301 | -0,283 |
| Employment rate, women | | | 1 | 0,608 | -0,620 | -0,269 |
| Employment rate, men | | | | 1 | -0,554 | -0,663 |
| Unemployment rate, women | | | | | 1 | 0,701 |
| Unemployment rate, men | | | | | | 1 |

Note: 5% critical value (two-tailed) = 0,497

Source: Author's analysis based on data from Statistical Yearbook of the Region and Labor Force Surveys in Poland 2009, CSO

students was estimated at $55,6\% \pm 3,6\%$ in EU countries. Poland had the 6th position in its high share of women among tertiary students after Latvia, Estonia, Slovakia, Lithuania and Sweden.

The percentages of young women with an education level of at least basic vocational were higher than for men in all EU countries. The percentages of young women with an education level of at least basic vocational ranged from 59,6% in Malta to 94,3% in Slovenia, for young men from 46,3% in Portugal to 91,3% in Czech Republic. The average percentage of young women with an education level of at least basic vocational was estimated at $83,0\% \pm 9,1\%$, for men it was lower and estimated at $76,6\% \pm 11,5\%$. Poland had the 2nd position after Slovenia in high activity rates for women, and the 3rd position after Czech Republic and Slovakia for men.

There are international differences between EU countries in the share of women among tertiary students (coefficients of variation 6,5%), and the percentages of young women (CV = 11,0%) and men (CV = 15,0%) with at least a basic vocational level of education. The distributions of these three educational career indicators for EU countries had a negative skew (skewness -0,4; -1,2; and -1,1 respectively). It means that there was domination of the EU countries with these indicators above the arithmetic mean.

4.2 Macro indicators of professional careers of women in European Union countries

Figure 9 presents activity, employment and unemployment rates for women compared to men in EU countries. The activity and employment rates were lower for women than for men in all EU countries. It means that a higher percentage of men than women were professionally active and a higher percentage of men was employed. The unemployment rates for women were lower than for men in 14 EU countries, higher in 11 EU countries and the same in 2 EU countries. The unemployment rates for women in Poland were higher than for men.

The activity rates for women ranged from 34,0% in Malta to 59,8% in Denmark, for men from 57,6% in Bulgaria to 72,6% in Cyprus. Average activity rate for women was estimated at $51,3\% \pm 6,1\%$, for men it was higher and estimated at $65,6\% \pm 3,4\%$. The distributions of activity rates for both women and men in EU countries had a negative skew (skewness -1,1 for women and -0,7 for men). It means that there was domination of the EU countries with activity rates above the arithmetic mean. Poland had the 20th position in high activity rates for women, and the 20th position for men.

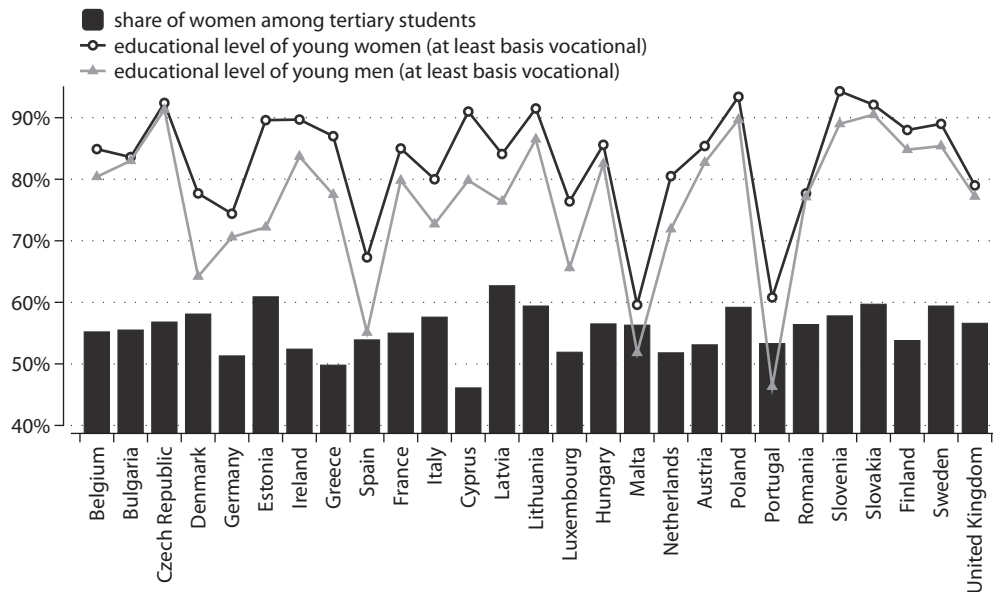


Fig. 8. Comparison of educational career indicators in European Union countries (share of women among tertiary students in academic year 2010/2011, educational level of young people in 2007)

Source: Author's analysis based on data from EUROSTAT

The employment rates for women ranged from 43,4% in Malta to 77,2% in Sweden, for men from 66,6% in Bulgaria to 82,8% in Sweden. Average employment rates for women was estimated at $62,7\% \pm 7,8\%$, for men it was higher and estimated at $74,4\% \pm 5,1\%$. The distribution of employment rate in EU countries had a negative skew (skewness $-0,5$) for women and positive skew (skewness $0,1$) for men. It means that there was domination of the regions with employment rates above the arithmetic mean for women and below the arithmetic mean for men. Poland had the 20th position in high employment rates for women, and the 18th position for men.

The unemployment rates for women ranged from 4,3% in Austria to 22,2% in Spain, for men from 3,9% in Luxembourg to 21,2% in Spain. Average unemployment rate was estimated at $9,8\% \pm 4,3\%$ for women and $10,1\% \pm 4,6\%$ for men. The distributions of unemployment rates for both women and men in EU countries had positive skew (skewness $1,5$ for women and $0,9$ for men).

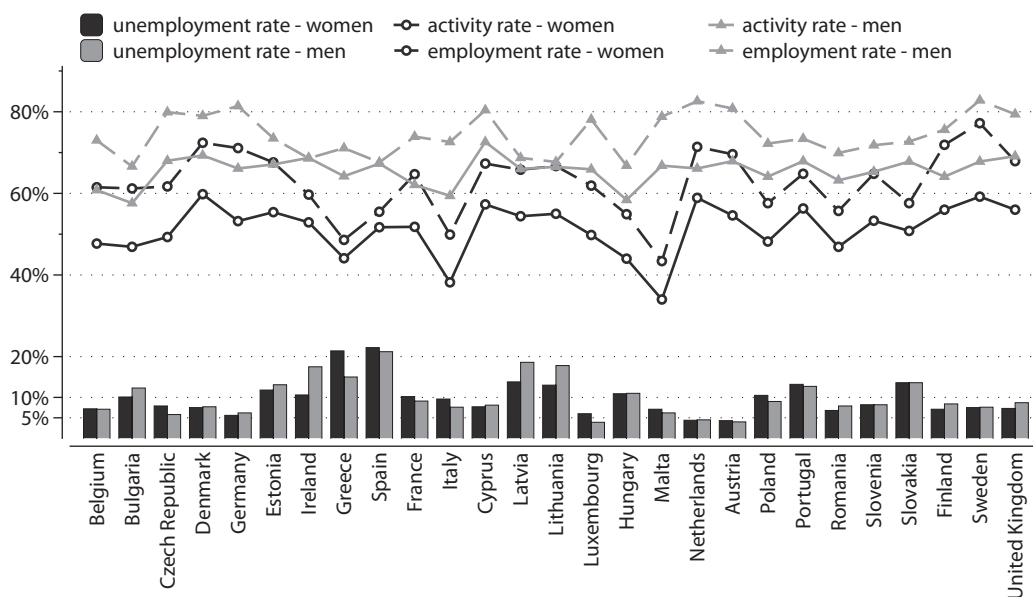


Fig. 9. Comparison of professional career indicators in European Union countries (activity rates 2010, employment and unemployment rates 2011)

Source: Author's analysis based on data from EUROSTAT

It means that there was domination of the EU countries with unemployment rates above the arithmetic mean. Poland had the 18th position in low unemployment rates for women, and the 16th position for men. The activity and employment rates for both women and men differed between EU countries (coefficients of variation 5%–13%). But the unemployment rates were more varied between countries (coefficients of variation were 43,6% for women and 45,5% for men).

4.3 Correlation between indicators of educational and professional careers of women in European Union countries

Table 2 presents Pearson's correlation coefficients between indicators of educational and professional careers of women in EU countries. Assuming a two-tailed significance level 0,05, a significant correlation coefficient for 27 observations is above 0,381. The data for 27 EU countries showed that educational career indicators were not correlated to professional career indicators. Similar to the Polish regions' data, the EU countries' data showed a positive correlation between the activity rates for women and the activity rates for men ($r = 0,569$), the same situation for employment rates ($r = 0,477$), and for the unemployment rates ($r = 0,849$) in Polish regions. The unemployment rates for both women and men correlated negatively to activity and employment rates by gender, respectively. There was a positive correlation between educational level of young women and young men ($r = 0,932$).

Tab. 2. Pearson's correlation coefficients between indicators of educational and professional careers of women in European Union countries

| Variable | Activity rate, men | Employment rate, women | Employment rate, men | Unemployment rate, women | Unemployment rate, men | Share of women among tertiary students | Educational level of young women (at least basic vocational) | Educational level of young men (at least basic vocational) |
|--|--------------------|------------------------|----------------------|--------------------------|------------------------|--|--|--|
| Activity rate, women | 0,569 | 0,910 | 0,328 | -0,149 | 0,058 | -0,042 | 0,249 | 0,116 |
| Activity rate, men | 1,000 | 0,380 | 0,518 | -0,049 | 0,033 | -0,174 | -0,037 | -0,169 |
| Employment rate, women | | 1,000 | 0,477 | -0,427 | -0,208 | 0,019 | 0,265 | 0,198 |
| Employment rate, men | | | 1,000 | -0,639 | -0,746 | -0,288 | -0,112 | -0,109 |
| Unemployment rate, women | | | | 1,000 | 0,849 | 0,086 | -0,047 | -0,162 |
| Unemployment rate, men | | | | | 1,000 | 0,231 | 0,044 | -0,052 |
| Share of women among tertiary students | | | | | | 1,000 | 0,200 | 0,217 |
| Educational level of young women (at least basic vocational) | | | | | | | 1,000 | 0,932 |

Note: 5% critical value (two-tailed) = 0,381

Source: Author's analysis based on data from EUROSTAT

Conclusions

Based on the above, the following conclusions have been drawn:

- The educational levels of women in Poland and other EU countries have improved significantly within the past 50 years. More and more women have tertiary or post-secondary and secondary levels of education. Despite a higher educational level of women compared to men, women in

Poland and other EU countries still have a worse position than men on the labor market (lower activity and employment rates, higher unemployment rates).

- Analyzing a time series of activity, employment and unemployment rates and structure of education in Poland, a positive correlation between educational and professional career indicators was estimated. The higher educational level of people in Poland over time, the better position they have on the labor market, which applies to both women and men. There was no correlation between the share of women among tertiary students and professional career indicators based on data for 16 Polish region and 27 EU countries. There was no correlation between the percentages of youth with an education level of at least basic vocational and professional career indicators based on data for 27 EU countries.
- The activity rates, employment rates and analyzed educational career indicators show little variation between regions in Poland and between EU countries. The unemployment rates show more variation between regions in Poland and between EU countries. This applies to the above educational and professional career indicators of both women and men.
- Poland compared to other EU countries has a weak position in terms of professional career indicators (positions from 16 to 20) and a good position in terms of educational career indicators. The authors of this paper are of the opinion that it would be worth correlating educational and professional career indicators with family career indicators. This will be the purpose of the next study.

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