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Gender wage gap - occupation and industries analysis for Poland

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Abstract
Remuneration is a measure of the purchasing power of the population that shows how wealthy the given society is. Analysis of remuneration received by different groups provides information about inequalities between and within the analyzed groups. One of the groups whose pay is lower than the average are women. In this article the attempt to indicate reasons for such inequality is undertaken. In the research presented in the article the main objective is to verify the significance of occupations and industries in shaping the gender wage gap in contemporary Poland. The research was based on data from the Polish Earning Survey, which was conducted by Sedlak & Sedlak for a single year, 2018. The results obtained show that the gender wage gap in Poland is explained in 36% by occupations and 15% by industry in which women are employed, which proves the significance of location factors in shaping gender wage gap

Keywords*:* gender wage gap, occupational groups, industries, Poland

Introduction

Paid work is the main source of income for people in industrialized economies. Wages are important because they affect people's economic well-being, and they also relate to issues of fairness and equality. One of the groups whose pay is lower than the average is women, and since as Goldin (2014, p. 1093) writes, relative earnings often signify how individuals are valued socially and economically, they are regarded in some sense as having less worth. An important aspect of wages is their function as input into people's decision making (Blau & Kahn, 2006). Thus, due to the significance of wages, the gender wage gap has been investigated intensively for decades, and continues to remain an area of extensive research (Blau & Kahn, 2017; Boll et al., 2017; Goraus & Tyrowicz, 2014). Poland seems to be an interesting case,

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since according to the methodology applied by Eurostat[1] (such a measure of the gender wage gap may indicate the difference in earnings linked to the feminization or masculinization of some occupations or sectors (Leythienne and Ronkowski, 2018)), the gender wage gap in Poland is one of the lowest in the European Union, and in 2016 it reached 7.2%, while the EU average was 16.2% (Eurostat, 2018).

In the research presented in the article the main objective is to verify the significance of occupations and industries in shaping the gender wage gap in contemporary Poland. The research was based on data from the the Polish Earning Survey, which was conducted by the commercial institution Sedlak & Sedlak for a single year, 2018 (n= 144 286). The article begins with a literature review focused on the significance of locational factors in shaping the gender wage gap in industrialized economies. In the first stage of the analysis we present data from the Polish Earning Survey (Ogólnopolskie Badanie Wynagrodzeń – OBW[2]) for a single year, 2018, and characterise the structure of remuneration in Poland in terms of locational factors. Then, we apply statistical methods to analyse the labour market in Poland. To check the determination of locational factors on wages we use the Ordinary Least Squares method (OLS method), which is the standard approach in regression analysis. Recommendations and suggestions for potential avenues of further research directions close the article.

1. Literature review

Individual earnings exhibit significant diversity due to large differences in the underlying characteristics relevant to the labour market (Goraus & Tyrowicz, 2014, p. 126). One of such characteristics that impacts individual earnings is gender. The gender wage gap refers to the difference in average wages between women and men. It is usually measured on hourly basis, and presented as a percentage of gross salaries of women and men in gross salaries of men (Oczki 2015, p. 27; Oczki, 2016, p. 108). Variables traditionally enlisted as causes of the gender wage gap have been: human capital (schooling and work experience), gender division of labour within a family and on the labour market, compensating wage differentials, and discrimination. Boll et al. (2017) adds some other factors to that list: firm tenure, part-time work, temporary contracts, firm size, public control over the firm, age distribution, and locational factors (industries and occupations). Gender differences in occupations, industries and firms are important components of discussions regarding the causes of the gender wage gap (Blau & Kahn, 2017, pp. 790-791).

[1] While calculating the gender wage gap, Eurostat includes only data coming from enterprises employing 10 or more people, and does not introduce any limitations regarding age or the number of hours worked, and thus includes both full time as well as part time workers.

[2] The Polish Earning Survey (OBW) also gathered information from sole proprietor and civil law contracts, but this was not included in the analysis. Only data on persons under an employment contract were taken, where the occupation can be distinguished.

The gender wage gap may be statistically decomposed into two parts: one linking gender differences in measured characteristics, and the other one being "unexplained" (Blau & Kahn, 2006, p. 43). For a long time, the gender wage gap was believed to reflected differences between women and men in regards to human capital (Mincer & Polachek, 1974). Thus, the wage gap was seen as an indicator for productivity differentials between women and men, and - referring to its unexplained part - for discrimination, since it is the difference in earnings between observationally identical males and females. During the past decades, increasing education and labour force participation rates of women influenced their earnings and led to a convergence of women and men in both employment and earnings (Blau & Kahn, 2017; Boll et al., 2017; Goldin, 2014). Due to women's increasing education, resulting in women being better educated than men in a number of countries (including Poland), and a narrowing gender gap in work experience, human capital factors tend to not matter any longer in the explanation of gender wage differentials (Boll et al., 2017, p. 410, Polachek, 2006). Nevertheless, this has not translated into the closing of the gender wage gap. Even though women have made significant progress in narrowing the gap, they still continue to earn considerably less than men on average, and the convergence of men's and women's pay has slowed down in recent years, suggesting that the trend to narrow the gender wage gap will not continue in future (Blau & Kahn, 2006, p. 37).

Since the human capital factors do not explain the gender wage gap, the attention should be shifted to locational factors. In terms of occupational differences between men and women, there are reasons why women tend to choose different professions than men. Women dominate in jobs that reassemble their gender roles and are linked to care and services, while the ones in which men dominate are associated with physical strength (Zachorowska-Mazurkiewicz, 2016). Figart (2005, p. 513) notes that the structure of the labour market impacts individual decisions regarding employment. Other economists point out the negative influence that the higher share of women in a given occupation has on the level of earnings (Bergmann, 1974, as cited in Blau & Kahn, 2006, p. 43; Treiman & Hartmann, 1981, as cited in Figart, 2005, p. 511). Through occupational segregation some professions started to be treated as "feminine" and paid less, strictly because they were thought to require fewer qualifications (Figart, 2005, p. 512). Hartmann et al. (2006, p. 134) write that the causes of sex segregation in the labour market and lower pay in jobs dominated by women involve such factors as social norms and cultural practices, as well as prejudice and discrimination.

Gender differences in occupations and industries are quantitatively the most important factors explaining the gender wage gap. Thus, unlike human-capital factors, and despite occupational upgrading of women relative to men, gender differences in the sorting between and within occupations and industries continue to play an important role in explaining the gender wage gap (Blau & Kahn, 2016; Boll et al., 2017, p. 410). According to the findings of Wood et al. (1993), job setting

accounted for one third of the gender wage gap. Peterson and Morgan (1995), using cross-industry data for the US, identify differences across occupations to be more important than within-job wage differentials (Boll et al., 2017). However, Goldin (2014, p. 1098) claims the opposite, pointing that earning gaps within occupations are more important than the distribution of individuals among occupations. Besides working in different occupations, women and men also tend to be employed at different levels of the hierarchy within occupations (Blau & Kahn, 2016). Additionally, there is a sectoral distribution of women and men that also adds to the wage gap (Boll et al., 2017, p. 411). Sectors differ in terms of remuneration due to different wage setting regimes at industry level. In terms of industry, Blau and Kahn (2006) write that there are different rewards for workers in particular sectors of the economy, and that workers' remuneration in some industries, such as durable goods or manufacturing, may be higher than earnings of similarly qualified workers in other industries, like services. In their later study they (2017) showed that there has been a remarkable increase in women's relative representation in high-level jobs, with male advantage falling from 12 percentage points in 1981 to just two percentage points 30 years later. Comparing the significance of different factors explaining the gender wage gap they notice that while human capital (education and experience) impact has declined noticeably, the share accounted for by locational factors (occupation and industry) has increased from 27 percent of the 1980 gap to 49 percent of the much smaller gap in 2010. Estimates by Blau and Kahn (2017, p. 827) indicate that occupation is the largest single factor accounting for the gender wage gap, with industry being the second most important. Taken together, they are responsible for more than one half of the gender wage gap.

Hegewisch and Hartmann (2014, p. 16) suggest that there is a penalty for working in female-dominated occupations, which is also suffered by men working in these occupations. According to them, occupational segregation and the gender earnings ratio are inversely correlated. In the 1980s, the decline in occupational segregation in the US was the strongest, and it was accompanied by the gender wage gap that narrowed in the greatest degree. In the following decade, the trend towards occupational convergence slowed down, and so did further improvements in the gender earnings ratio. The 2000s is characterized by the stagnation in both occupational integration as well as closing of the gender wage gap. Somewhat different results are presented by Boll et al. (2017) for the EU countries. A great part of the gender gap in pay is explained by the fact that women are over-represented in industries with low pay levels (and accordingly under-represented in industries offering better earnings). Sector affiliation is the factor with the greatest impact for the cross-country sample the authors' used in their study. Conversely, occupation is the feature causing the most heterogeneous effects.

Interesting research was conducted by Hartmann et al. (2006), which showed that regardless of the tier or sector, women earn substantially less than men. The authors divide occupations into three tiers: elite jobs – managers and professionals,

good jobs – supervisors, blue-collar craft workers, technicians, police, firefighters, and clerical workers, and less-skilled jobs – sales clerks, service workers, unskilled blue-collar jobs. Women who work full-time in the female sector earn only 61.4 percent of men's earnings. This is the worse ratio in the study. The best ratio, with women earning 92.3 percent of men's earnings, appeared in the female sector and elite jobs, followed by the male sector and good jobs – with a ratio equal to 92.1. The authors also point out that in each tier female sector jobs pay significantly less than male sector jobs, even though by definition both sets of occupations require the same qualifications (educational preparation).

The study of the gender wage gap that analysed the situation in Poland is the one by Kompa and Witkowska (2018). Their study covering years 2000-2015 indicated that women in this country usually work in industries where average wages are lower. They showed that wage disparity is present across NACE branches (industries), and econometric analysis conducted by them pointed at occupation as a determinant of wages in Poland. They conclude their studies with the statement that the main factor of gender inequality seems to be female segregation into low-wage jobs. This article is another attempt to investigate the gender wage gap in the context of the impact of locational factors in Poland.

In our study we are trying to assess if locational factors like occupations and industries play important roles in the gender wage gap in Poland. We seek to verify the following:

H1: differences within industries have an impact on the gender wage gap more than differences between industries;

H2: differences between industries, as well as within industries, determine the gender wage gap;

H3: differences within occupations translate into the gender wage gap to a greater extent than differences between occupations;

H4: differences between occupations, as well as within occupations, add to the gender wage gap.

2. Data and methods

In our research we apply data from the Polish Earning Survey, conducted continuously since 2003 by Sedlak and Sedlak. The data come from users of the website[3] and are collected by CAWI (*computer-assisted web interview*). This survey is free, annual, and declarative, and data are presented individually, and a part of this database concerning people under employment contracts is discussed in this study. In this analyses we especially focus on three independent variables: gender, occupation and industry, and one dependent - wage. Gender and occupation relate to the individual characteristics of each employee, and industry characterizes the

[3] Read more https://wynagrodzenia.pl/

employer. The explained variable is remuneration denominated in Polish currency - Polish zloty (PLN). The original number of records is 144 286, with values ranging between 700 PLN and 51 000 PLN. A description of all explanatory variables is presented below:

- Gender is represented by a dichotomous dummy category describing women or men.
- Occupation is described by 26 dummy variables selected according to the International Standard Classification of Occupation (ISCO).
- Industries – the element of the structure of the economy in which the enterprise operates. Described by 19 dummy variables. Original number of variables: 113 507 (no data for 779 variables)4.

The analysis of the collected empirical material consisted primarily of using mainly:

- Descriptive statistics: analysis of the correlation of relationships between the studied variables. The analysis was carried out using MSO;
- Econometric analysis: building an econometric model describing the relationship between the level of remuneration and its relationship with both the group of professions and the industry in which the employee is employed.

During the econometric analysis, single-equation linear econometric models were used for the previously defined explanatory variables. The set of variables, which was subjected to later econometric analysis, was created on the basis of the literature. Parameters of the equation were estimated by the ordinary least squares method (OLS). It was assumed that the random components in the models meet the classic assumptions, i.e. they have normal distributions with zero expected value, constant variance and no autocorrelation. In the process of model verification, the economic sense of interpretation of structural parameter assessments was taken into account, and the fit of the model to real data measured with a corrected coefficient of determination R^2.

Data refer to a single year - 2018. For the analysis only data on employment contracts were taken into account. Originally there were 114 286 records. As a result of the first database analysis, the following modifications were made:

- Observations which were incomplete were removed from the database;
- Occupation groups below 100 observations were removed from the database;
- All remunerations were converted into full-time employment;
- Observations for which age was out of working age (according to the methodology of the Central Statistical Office in Poland) were removed from the database (the working age for women is 18-59, for men 18-64);

[4]Division into industries was imposed by institutions collecting information from respondents and, as far as possible, adapted to Statistical Classification of Economic Activities in the European Community, Eurostat (2008).

- NGOs and fisheries were removed from the variable industries due to the low number of observations (31 and 13, respectively)

3. Results of the study

The presentation of results will begin with industries. When comparing the average wage structure by economic sectors as a percentage of average wages for all industries for 2018, industries with the highest earnings were: information technologies (133.40% of the average wage in all industries), banking (119.17% of the average wage in all industries) and telecommunication (110.94% of the average wage in all industries), while industries with the lowest earnings were as follows: science and education (71.25% of the average wage in all industries), public sector (71.84% of the average wage in all industries) and health and social work (77.66% of the average wage in all industries). It is also worth examining the participation of women in these industries, and whether it affects their remuneration (compared with men's remuneration [gender wage gap] and compared with the average wage in the industry) (Table A1 in appendix).

Based on the presented table, it can be seen that the most feminized industry in the analyzed sample is health and social work (70.39% women in the industry) and science and education (65.54% women in the industry). The lowest share of women in the industry was recorded in information technologies (24.55% women in the industry) and in electricity supply (25.53% women in the industry). A higher number of women in a given industry, however, does not mean a higher level of their earnings.

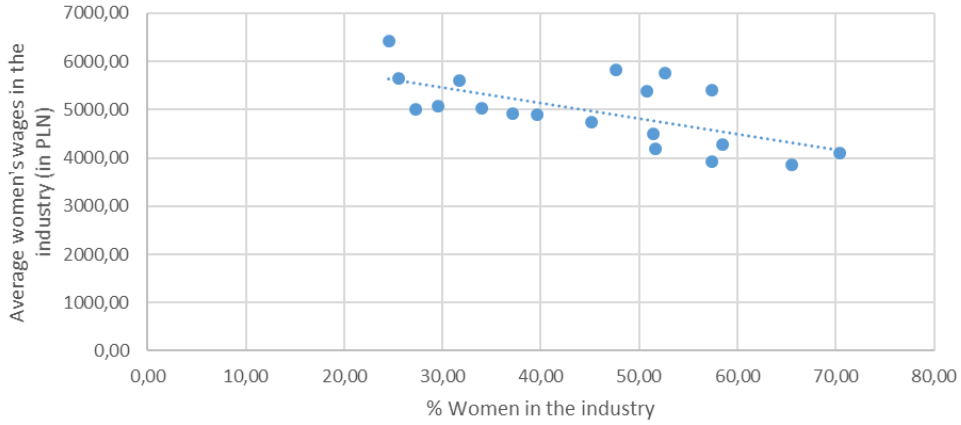
The differences within a given industry are on average 10 percentage points larger than the differences in remuneration between the industries. It is also worth mentioning that the largest differences in the levels of remuneration (regardless of whether they are analysed within the industry or between) occur in the telecommunication and banking industries. The results unambiguously confirm **H1**, i.e. differences within industries have an impact on the gender wage gap more than differences between industries.

Analysing the average salary in a given industry, one can notice a negative relationship between the percentage of women in the industry and average women's wages in the industry (the Pearson correlation coefficient for these variables is -63.38%), which is presented in chart 1. In the information technologies industry, the number of women is the smallest. However, the level of their salaries is the highest, while the share of women in science and education and in health and social work it is the highest, but the level of their remuneration is at the lowest level taking into account all analysed industries.

Considering women's remuneration in relation to men's remuneration, it can be seen that in no industry did women earn more than men, and in some industries these disparities even reached 35%. Health and social work is the most feminized industry in the analysed sample, and at the same time it has the highest level of the

gender wage gap. A similar situation is in science and education. On the other hand, the electricity supply and heating industries are at the opposite pole, where the degree of feminisation is at the lowest level and the level of remuneration is also one of the smallest, taking into account all the analysed industries (respectively 25.53% women in electricity supply and 17.99% GWG; 27.25% women in heating and 15.51% of GWG). The results confirm **H2**, i.e. the differences between industries, as well as within industries determine the gender wage gap.

Figure 1. Correlation between % of women in the industry and average women's wages in the industry (in PLN)



Source: authors' own elaboration based on OBW

Taking into account occupational groups (Table A2 in appendix), one may note that the highest paid group of professions was chief executives, senior officials and legislators (the average salary in these groups of occupations in 2018 in Poland was 15 558.79 PLN, and the average salary in all distinguished occupation groups was 6 137.94 PLN, i.e. over 2.5 times less). The lowest paid occupation group was cleaners and helpers (the average salary in these groups of occupations in 2018 in Poland was 2 664.33 PLN, i.e. over 2.3 times less). The biggest occupational group in this database are business and administration professionals (19.89%), business and administration associate professionals (11.90%), and information and communications technology service managers (10.08%). It is also worth analysing to what extent the participation of women in individual occupation groups translates into their remuneration.

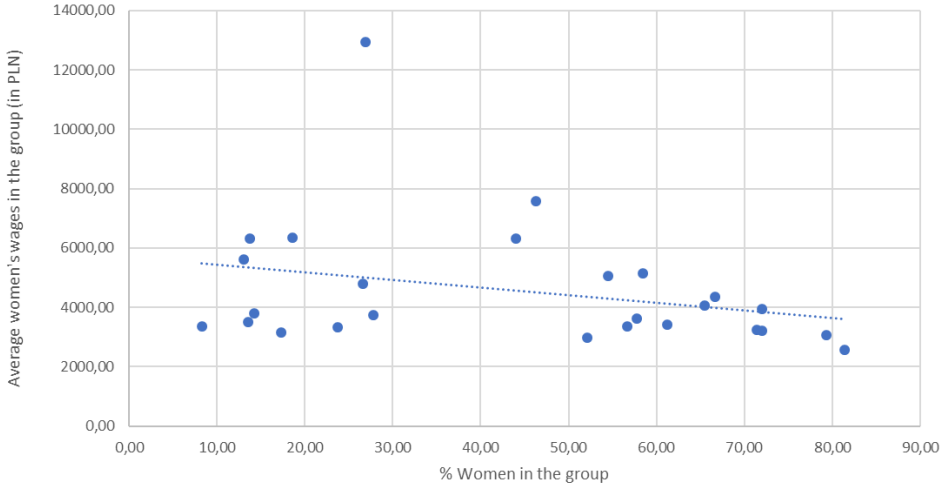
Analysing the table, it can be seen that women dominate in jobs that reassemble their gender roles and are linked to care and services, e.g. cleaners and helpers, general and keyboard clerks, customer services clerks or health associate professionals. A large percentage of women's participation in a given group does not mean a higher level of their remuneration. In the context of very feminized

occupational groups the opposite trend can be observed. In the cleaners and helpers, and general and keyboard clerks group, the share of women is the highest (81.40% and 79.31%, respectively), while the level of remuneration is at the lowest level (PLN 2,556.25 and PLN 3,070.86). It is also worth emphasizing that in the study, women in only one group of professions were characterized by a higher level of remuneration than men, i.e. information and communications technicians (111.21% of the average wage in the group). In the remaining groups of professions, women's remuneration represented on average 87% of men's remuneration. Comparing, similarly to industries, the differences in the levels of remuneration within an occupational group or between groups, it can be seen that the differences within an occupational group are much larger than between occupational groups, which confirmed **H3**, i.e. differences within occupations translate into the gender wage gap to a greater extent than differences between occupations.

Considering the correlation between the percentage of women in the occupational group and average women's wages in the group (in PLN) one can notice a negative correlation (the Pearson correlation coefficient for these variables is -0.29), but it is not as clear as in the case of industries. This relation is presented in chart 2.

Analysing the chart, one can notice a clear stratification between groups with the predominance of women and the level of their remuneration. In group of cleaners and helpers (the biggest share of women in the group) the level of women's remuneration is the lowest (2556.25 PLN, lower than the minimum wage in Poland in 2020, i.e. 2,600 PLN). In the groups of general and keyboard clerks and health associate professionals there is a similar situation.

Figure 2. Correlation between the % women in the industry and average women's wages in the occupation group (in PLN)



Source: author's own elaboration based on OBW

We also extended our research of the gender wage gap analysis in Poland in 2018 to the division into tiers (according to Hartmann's methodology) – see table 1. into three main levels - elite jobs, good jobs and less-skilled jobs. For analysis we used the major occupation group. The basic division of the employees by occupations is the division into nine major occupational groups according to ISCO-08, i.e. managers; professionals; technicians and associate professionals; clerical support workers; service and sales workers; skilled agricultural, forestry and fishery workers; craft and related trades workers; plant and machine operators and assemblers; elementary occupations ("Classification of occupations and specialities" introduced on the basis of the Regulation of the Minister of Labour and Social Policy of 7 August 2014 on Classification of Occupations and Specialities for Labour Market Use and the Range of Its Application (Journal of Laws 2014, item. 1145). We have classified managers and professionals into the group of elite jobs, technicians and associate professionals, and clerical support workers into good jobs, and plant and service and sales workers, machine operators and assemblers, elementary occupations, and craft and related trades workers into less-skilled jobs.

Table 1. Average women's and men's earnings and earnings ratio by occupational groups in Poland in 2018

Tier	Average women's earnings (PLN)	Average men's earnings (PLN)	Earnings Ratio (Percentage) Women to Men
Elite jobs	6575.50	8803.98	74.69
Good jobs	3534.16	4225.46	83.64
Less-skilled jobs	3377.38	4343.10	77.76

Source: authors' own elaboration based on Hartmann et al. (2006).

The results confirm that differences between tiers matter in terms of the gender wage gap. Women - regardless of their position - never earn the same as men, e.g. considering elite jobs, women earn an average of 74.69 % of men's earnings (lowest score), then 77.76 % in less-skilled jobs and 83.64 % in good jobs (highest score). These initial estimates (based on occupational groups) are also confirmed by linear regression, whose parameter estimates are presented in Table A3 in appendix.

The difference in estimation takes into account a more detailed division into occupational groups. The estimation confirmed earlier assumptions resulting from the literature review as well as descriptive statistics and **H4**, i.e. differences between occupations, as well as within occupations, add to the gender wage gap. Woman employed in the group of administrative and commercial manager professions are dummy variables. Women earn on average 21% less than men in a given sample, and the gender wage gap can be over 35% explained by belonging to a particular professional group. The results of the regression were checked for mutual correlation. The Mean Variance Inflation Factor (VIF) was 1.33 for the tested sample, which indicates no occurrence of collinearity. The position taken by the

employee determines the pay gap between women and men by nearly 36%, as evidenced by the value of the indicators R-squared (35.87%) and Adjusted R-squared (35.85%). The results of the analysis are statistically significant (for all estimates the significance level was 0.001).

The results of the OLS regression coefficients of industries in Poland in 2018 are presented in Table A4 in appendix.

The estimation of model parameters consisting in estimating the extent to which belonging to an industry affects the remuneration of women and men was built on the following dummy variables: women and agriculture. The results of the estimates confirm previous assumptions, i.e. men earn more than women in each case, by 26% on average. The gender wage gap can be explained by approximately 14.8% adherence to a particular industry. In highly feminized industries (healthcare, education), the entire group's earnings are lower than in agriculture, while in the IT sector the earnings level is nearly 30% higher than the dummy variable.

It is also worth noting that the model describing the relationship between remuneration and the industry is definitely less suited (R^2 is 14.84%), and not all industries have been taken into account due to statistical insignificance (environmental protection, heating, manufacturing), hence the smaller number of observations in the model. Nevertheless, the results of the estimation confirm that locational factors account for a half of the gender wage gap.

Conclusions

The gender wage gap is persisting (Boll et al. 2017; Polachek, 2006). The analysis unequivocally confirms that women in Poland are a group of employees who receive lower remuneration regardless of the industry in which they work or the position in which they are employed. There is a reverse relationship between a higher share of women in an occupation or industry, and the level of remuneration (Figart, 2005, Hartmann et al., 2006). Hegewisch and Hartmann (2014) write about the penalty for working in female dominated industries. According to them, there is an inverse correlation between the share of women in the industry and the level of earnings. In the case of Poland, Kompa and Witkowska (2018) pointed out a sectoral segregation to the lower wage sector in the case of women. The results of research presented in this article are consistent with these results. The differences between industries, as well as within industries, determine the gender wage gap in Poland.

Location factors that impact gander wage gap consist of industries, but also occupations. Despite belonging to a specific professional group, women are less economically valued, and thus earn over 20% less than men. Women in the analysed year in Poland accounted for less than 27% of the group that has the largest contribution to human decision making, i.e. chief executives, senior officials and legislators. It could be clearly seen while analysing tiers. The best ratio of women's remuneration compared to men's remuneration occurs in the so-called good jobs

(83.64%), while the worst ratio occurs in elite jobs (74.69%), the ones with decision-making power. But in all cases women earned less than men. Interestingly, the ratio of earnings in individual groups in Poland is distributed differently than in research published by Hartmann et al. (2006).

Location factors, namely differences within and between occupations and industries remain important in explaining the gender wage gap (Boll et al., 2017, Blau & Kahn, 2016). Research by Blau and Kahn (2016) show that differences in occupations and industries explain the gender wage gap in more than 50%. Boll et al. (2017) show that differences in terms of industries matter, but in terms of occupations not necessarily (heterogeneous results). The analyses conducted in this research using data from Poland, show an opposite phenomenon, with the gender wage gap explained by approximately 12.5% with adherence to a particular industry, and by over 35% by belonging to a particular professional group. It is also worth mentioning that differences within industries and occupations are larger than between these groups. And these results are consistent with the results obtained by Goldin (2014).

The results obtained from the presented research could be used in designing recommendations regarding public policy. Both the literature review conducted, as well as the analysis based on data from 2018 from Poland show that the most important factor shaping the gender wage gap is segregation of women and men within and between occupations and industries. We have shown that the gender wage gap is persistent in Poland, and location factors do matter. Policy makers aiming at equalizing labour market conditions for women and men should target occupational and industry segregation present in this market. The presented analysis is restricted only to these factors. Therefore, in further analysis, it is worth taking a closer look at other characteristics. It is also worthwhile to try to explain the causes of gender segregation in the labour market in Poland, in particular whether they are the result of social / cultural norms or discrimination in the labour market.

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Appendix

A1. Industries by degree of feminization in Poland in 2018 based on OBW

Industries	% of women in the industry	Average women's wages in the industry (in PLN)	Average women's wages as a % of the average wage in the industry	Gender wage gap
Information technologies	24.55	6415.38	78.35	26.81
Electricity supply	25.53	5657.10	85.96	17.99
Heating	27.25	5006.44	88.22	15.51
Telecommunication	29.59	5081.34	74.62	32.57
Manufacturing	31.71	5607.03	85.97	19.28
Transportation	33.97	5019.65	90.28	14.02
Construction	37.17	4913.18	80.36	28.01
Environmental protection	39.59	4890.37	80.60	28.49
Trade	45.10	4739.13	84.49	25.06
Media, Publishing, Advertising, PR	47.69	5823.86	86.98	22.24
Insurance	50.79	5376.28	81.10	32.14
Agriculture	51.40	4503.98	83.67	28.66
Culture and Art.	51.67	4192.36	85.12	26.56
Banking	52.63	5750.57	78.61	36.48
Business activities	57.42	5399.64	84.98	29.33
Public sector	57.43	3924.22	88.99	22.52
Personal service activities	58.42	4277.11	88.67	23.51
Science and education	65.54	3851.26	88.06	28.23
Health and social work	70.39	4106.01	86.14	35.21

Source: authors' own elaboration based on OBW

A2. Occupational group by ISCO by degree of feminization in Poland in 2018 based on OBW

Name of occupational group by ISCO	% Women in the group	Average women's wages in the group (in PLN)	Average women's wages as a % of the average wage in the group	Gender wage gap
Drivers and mobile plant operators	8.27	3348.05	85.52	15.58
Information and communications technicians	13.02	5616.09	111.21	-13.10
Stationary plant and machine operators	13.50	3498.84	78.52	24.02
Information and communications technology service managers	13.69	6315.19	80.39	22.04
Food processing, wood working, garment and other craft and related trades workers	14.24	3792.86	74.32	28.72
Numerical and material recording clerks	17.26	3144.76	93.81	7.39

Production and specialized services managers	18.57	6335.35	81.97	21.27
Labourers in mining, construction, manufacturing and transport	23.71	3318.73	89.24	13.65
Science and engineering professionals	26.58	4782.18	80.13	25.24
Chief executives, senior officials and legislators	26.93	12947.76	83.22	21.63
Science and engineering associate professionals	27.83	3743.11	80.43	25.22
Hospitality, retail and other services managers	44.04	6305.60	81.22	29.24
Administrative and commercial managers	46.27	7564.61	86.50	22.51
Personal service workers	52.11	2982.74	94.60	10.66
Business and administration professionals	54.49	5046.51	90.74	18.31
Sales workers	56.70	3354.06	90.78	19.00
Personal care workers	57.77	3617.29	84.76	29.86
Legal, social and cultural professionals	58.46	5138.99	88.72	23.43
Legal, social cultural and related associate professionals	61.20	3430.01	85.90	29.73
Teaching professionals	65.44	4064.11	84.24	35.12
Health professionals	66.70	4349.02	87.26	30.47
Customer services clerks	71.36	3250.35	94.61	16.59
Health associate professionals	72.00	3207.89	93.80	19.10
Business and administration associate professional	72.04	3957.70	93.28	20.49
General and keyboard clerks	79.31	3070.86	98.40	7.27
Cleaners and helpers	81.40	2556.25	95.94	18.52

Source: authors' own elaboration on the basis of OBW

A3. OLS regression coefficients of ISCO in Poland in 2018

l_remuneration	coef.	t	P> ItI
Gender			
Male	0.2147259	66.03	0.000
ISCO			
Business and administration associate professional	-0.626706	-96.94	0.000
Business and administration professionals	-0.4050075	-69,41	0.000
Chief executives, senior officials and legislators	0.5072742	58.42	0.000
Cleaners and helpers	-1.01607	-25.42	0.000
Customer services clerks	-0.8150677	-67.77	0.000
Drivers and mobile plant operators	-0.8162072	-82.51	0.000
Food processing, wood working, garment and other craft and r..	-0.5580528	-49.17	0.000
General and keyboard clerks	-0.8655865	-52.24	0.000
Health associate professionals	-0.8022506	-55.39	0.000
Health professionals	-0.5184235	-49.17	0.000

Hospitality, retail and other services managers	-0.1403753	-10.45	0.000
Information and communications technicians	-0.63586	-49.15	0.000
Information and communications technology service managers	-0.1872131	-27.78	0.000
Labourers in mining, construction, manufacturing and transport	-0.8371341	-42.62	0.000
Legal, social and cultural professionals	-0.4089324	-42.51	0.000
Legal, social cultural and related associate professionals	-0.7103054	-40.61	0.000
Numerical and material recording clerks	-0.9182921	-76.78	0.000
Personal care workers	-0.6556606	-33.01	0.000
Personal service workers	-0.9207958	-53.20	0.000
Production and specialized services managers	-0.1685933	-21.00	0.000
Sales workers	-0.7988777	-84.60	0.000
Science and engineering associate professionals	-0.6121514	-72.77	0.000
Science and engineering professionals	-0.3982089	-56.11	0.000
Stationary plant and machine operators	-0.6763734	-45.14	0.000
Teaching professionals	-0.5612558	-45.13	0.000
cons.	8.820735	1715.85	0.000
R-squared		0.3587	
Adj R-squared		0.3585	
Number of observations		96,271	

Source: authors' own elaboration

A4. OLS regression coefficients of industries in Poland in 2018

l_remuneration	coef.	t	P> ItI
Gender			
Male	0.2615097	64.98	0.000
Industry			
banking	0.2238239	4.38	0.000
business activities	0.1230031	2.41	0.016
construction	0 .0537636	1.06	0.291
culture and art	-0.1048651	-2.05	0.041
electricity supply	0.1001727	1.94	0.053
health and social work	-0.1171035	-2.29	0.022
information technologies	0 .295624	5.82	0.000
insurance	0.1463669	2.78	0.005
media, publishing, advertising, PR	0.1346647	2.59	0.010
personal service activities	-0.1313838	-2.58	0.010
public sector	-0.1624453	-3.17	0.002
science and education	-0.1570075	-3.05	0.002
telecommunication	0.1175336	2.16	0.031
trade	-0.0450396	-0.89	0.375
transport	-0.0549458	-1.08	0.282
cons.	8.344206	165.03	0.000
R-squared		0.1486	
Adj R-squared		0.1484	
Number of observations		73,405	

Source: authors' own elaboration