FACTORS OF THE GENDER WAGE GAP  
AT UKRAINIAN ENERGY ENTERPRISES

Abstract. Using the results of the sample survey, conducted among the energy companies during the fourth quartal of 2020 within the grant, provided by ESP USAID we have obtained new empirical evidence of size and factors of the gender wage gap in Ukrainian energetics and about spreading of that phenomenon among different professions groups. As the main factors, determining the size of wage were considered the educational level (four groups were identified), length of service in the company (five groups were identified), and respondent’s position / workplace in the company’s qualification hierarchy (eight groups were identified).

The results obtained evidences, that leading factor in the gender pay gap in Ukrainian energetics is the unequal access of women and men to gaining the characteristics necessary for increasing wages. In particular, the disparity in the distribution of the total number of female and male respondents between the qualification levels (the average qualification level of women is 4.8 vs. 5.4 for men).

Gender gap formation through unequal remuneration of labour of women and men who have similar characteristics of experience, qualifications and complexity of the work is localized in the lower qualification levels (from the 2nd to the 4th), and through inequality of access to high-paying work is manifested in the absence of women at the highest (8th) qualification level, a clear predominance of men at the 7th qualification level and a noticeable predominance at the third qualification level, which in terms of payment outscores both the 5th and 6th qualification levels. Accordingly, the leading factor in the gender pay gap is the predominance of men at the three highest paid qualification levels.

Localization of differences in remuneration of similar characteristics of qualifications, experience and complexity of work at lower levels of the qualification hierarchy, as well as the weakening of such inequality as the experience of employees increases, indicates that the problem of gender inequality is more inherent in the segment of «peripheral» employment. As the skills and experience grow (respectively, the value of employees to employers), the problem of gender pay inequality becomes less noticeable. However, the number of women who reach a level in their career growth where gender pay inequality is almost not observed is less than the number of men.

Keywords: gender wage gap, unexplained part of gender wage gap, professions groups, inequality of access to high-paying work, energetics.
ФАКТОРИ ГЕНДЕРНОГО РОЗРИВУ В ОПЛАТІ ПРАЦІ НА ПІДПРИЄМСТВАХ ЕНЕРГЕТИКИ УКРАЇНИ

Анотація. На ґрунті результатів вибіркового обстеження, проведеного серед працівників українських енергетичних компаній протягом четвертого кварталу 2020 року в рамках гранту, наданого ESP USAID, оцінено розміри і фактори гендерного розриву в заробітній платі в українській енергетиці та поширення цього явища серед різних професій. Основними детермінантами розмірів заробітної плати розглядались освітній рівень (респонденти були розділені на чотири групи за цим критерієм), стаж роботи на підприємстві (п’ять груп) і позиція респондента у кваліфікаційній ієрархії компанії (усі респонденти ідентифіковані за належністю до одного із восьми кваліфікаційних рівнів).

Отримані результати свідчать про те, що провідним чинником гендерного розриву в оплаті праці в українській енергетиці є нерівномірний доступ жінок і чоловіків до набуття характеристик, потрібних для збільшення заробітної плати. Зокрема, нерівність у розподілі загальної кількості респондентів жіночої і чоловічої статі між кваліфікаційними рівнями (середній рівень кваліфікацій жінок становить 4,8 проти 5,4 для чоловіків).

Частка гендерного розриву, обумовлена неоднаковою оплатою аналогічної праці жінок і чоловіків (відмінності в оплаті жінок і чоловіків, які мають аналогічні характеристики досягнену, кваліфікації та складності роботи) локалізується на нижчих кваліфікаційних рівнях (з ІІ до ІV). Частка розриву, обумовленого нерівністю доступу до високооплачуваної праці, проявляється у відсутності жінок на найвищому (VIII) кваліфікаційному рівні, якій перевазі чоловіків на VII кваліфікаційному рівні та помітному переваженні на третьому кваліфікаційному рівні, працівники якого охоплюють більшу компенсацію, ніж зайняті на V та VI кваліфікаційних рівнях. Відповідно, провідним чинником гендерного розриву в оплаті праці є переважання чоловіків на трьох найбільш високооплачуваних кваліфікаційних рівнях.

Локалізація відмінностей в оплаті аналогічної праці жінок і чоловіків на нижчих рівнях кваліфікаційної ієрархії, а також ослаблення такої нерівності зі збільшенням досягнену...
Introduction. A large-scale reduction in the number of economically active population is a common problem for both energy and other sectors of economic activity in Ukraine. The severity of this problem for business in Ukraine has traditionally been mitigated by stagnation of national production scales and the possibility of labor replacement by capital. However, the development of the industry, the implementation of projects which aim to expand the scale of production, and the qualitative improvement of the organizational and technical level, are extremely difficult under such conditions. A significant part of the surveyed managers of energy enterprises points out the lack of staff with competencies, which are critical for the energy sector, as an important factor limiting the choice of business strategies for the development and adaptation to new challenges. At the same time, the presence of large-scale «traditionally male» employment segments at the enterprises is perceived by most managers «as a fact of life», and not as opportunity to improve the enterprise provision with qualified personnel.

The implementation of such opportunities requires careful «structuring» of the labor sphere in the energy sector, highlighting and evaluating certain aspects of gender inequality in the industry. In particular, understanding the scale and causes of gender-based inequality in salaries is important to assess the expected impact of equalizing the ability of women and men to realize their work potential in energy sector.

Accordingly, this article is devoted to improving analytical and methodological support for assessing the consequences of implementing programs and policies to equalize employment and career opportunities in the energy sector for women and men. We expect that its results will be useful for business representatives — allowing them to more accurately understand the mechanism of influence of the gender approach in personnel management on the volume and structure of labor costs. Also, the results of the study will help developers of regulatory policies and sectoral development programs to clarify the scale and distribution among beneficiary groups of the expected socio-economic effect of eliminating factors of labor discrimination against women in the energy sector.

Problem analysis and problem statement. In the literature on gender issues, the pay gap between men and women is divided into two qualitatively different components. The first is the so-called «explained» component of the pay gap. This is the component of the gender gap that is caused by differences inherent in the «male» and «female» populations of employees, on the basis of qualifications or work performed.

The second component is the «unexplained» component of the gender gap, which expresses the disparity between women and men in the labor market. The allocation of the second component is based on the fact that the functional relationship between salary factors (characteristics of human capital and work performed) and the amount of remuneration is reflected by different coefficients for women and men. It is the second component that can be interpreted as a sign of discrimination against a certain socio-demographic group regarding the possibilities of realizing their economic potential as an employee. Its significant impact is the basis for further research and clarification of the institutional conditions and factors of occurrence of such a difference and justification of the expediency of using the term «discrimination» in relation to a certain set of specific cases of unequal returns on investments in human capital for women and men [2].

To a certain extent, the regularity of the existence of such a «discriminatory» component of the gender pay gap is justified by the concept of G. Becker, who assumes that maximizing employer
satisfaction is achieved by making suboptimal (from the point of view of production needs) choice of the performer in the process of external hiring or promotion [1].

Accordingly, the difference between the salaries of women and men due to such reasons should manifest itself even if their qualifications and experience are identical and if they perform identical work.

In turn, the «explained» component of the gender pay gap cannot be interpreted as «free from inequality» between socio-demographic groups. It may also contain a component of inequality of access of women and men to certain educational resources or career opportunities, and a component of inequality of preferences inherent in women and men regarding the forms of realization of their economic potential.

Thus, the «bonding and selection» models [9; 13], which in the context of strategic decisions on investing in human capital, justify that employers will consider women of fertile age less inclined to permanent employment and prefer to hire men for those jobs that involve highly specialized training. The idea that women of fertile age are more prone to shifts in working life and, respectively, prefer to invest in universal skills (which retain value in the event of a change of workplace), rather than in special ones (focused on a specific enterprise) can find empirical confirmation in different returns from tenure for women and men: slower returns to tenure for women could be due to employer discrimination based on rational expectations about women’s attachment to jobs. For example, if employers engage in statistical discrimination then the perception of women as “less” stable workers could lead employers to systematically not hire women into jobs with opportunities of specific training or learning» [11].

In particular, despite the fact that back in the 80s of the XX century in developed countries, women minimized the gap in the educational level, and since the beginning of the XXI century, they mainly have an educational level higher than average [5], women are much less represented in technical and engineer professions than men [12]). A similar situation is typical in Ukraine, where women have a higher educational level than men, but engineering and technical professions traditionally remain «male» (State Statistics Service of Ukraine, 2019) and others postsoviet countries [10].

We took into account three leading factors of salary amounts, two of which reflect the characteristics of respondents (education and work experience in an energy company) and one — the work they perform (position / workplace in the qualification hierarchy of the enterprise) as it was proposed in many works devoted to similar issues [3; 8; 14].

**Methodology.** To distinguish groups based on the complexity of the work performed, the international standard for classification of professions ISCO-08 was used, adapted to the specifics of domestic reference books of professional and qualification characteristics of professions.

To distinguish groups by level of education — the National Classification of educational levels, which is the basis for statistical labour reporting of enterprises.

Identification of groups by length of service — based on the hypothesis of the sensitivity of the level of payment to the five-year difference in the length of service at the enterprise, which was confirmed by the answers of respondents in the questionnaires.

According to the first characteristic (level of education), four groups are distinguished: 1) basic secondary education, 2) vocational and technical education; 3) basic (bachelor’s level) higher education; 4) full (master’s level) higher education.

According to the second characteristic (length of service in the company), five groups were distinguished: 1) length of service in the company (length of service) < 5 years; 2) 5 <= length of service < 10; 3) 10 <= length of service < 15; 4) 15 <= length of service < 20; 5) 20 <= length of service;

According to the third characteristic (the respondent’s position / workplace in the company’s qualification hierarchy), eight groups were identified: 1) simple jobs that do not require qualifications; 2) qualified workers with tools, machine and mechanism operators; 3) linear management of production processes; 4) technical employees; 5) specialists and professionals of initial qualification levels; 6) professionals of higher qualification levels; 7) managers and senior managers; 8) top management of the company.
This division has a significant drawback: it is not sensitive to the differentiation of qualifications within the same qualification level (for example, an engineer of category I or II; a worker of category II or VI will fall into the same group). In the future, we plan to improve this classification to ensure sensitivity to changes in positions within a particular professional group.

**Research results.** The gender-disaggregated distribution of the number of respondents who indicated the amount of salary ($N = 158$) between qualification levels and the average salary levels for these levels is shown in *Table.*

<table>
<thead>
<tr>
<th>Gender pay gap: general and qualification levels</th>
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<tbody>
<tr>
<td>Qualification level</td>
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<tr>
<td>---------------------</td>
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<tr>
<td><strong>Women</strong></td>
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<tr>
<td>Number of employees</td>
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<tr>
<td>Average salary</td>
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<tr>
<td><strong>Men</strong></td>
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<tr>
<td>Number of employees</td>
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<tr>
<td>Average salary</td>
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<tr>
<td>«women / men» balance</td>
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<tr>
<td>All respondents</td>
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<tr>
<td>Number of employees</td>
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<tr>
<td>Average salary</td>
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<td>Gender gap</td>
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*Source: developed by authors.*

The actual average monthly salary of 158 respondents (employees of Ukrainian energy companies who indicated their current salary in the questionnaires) is UAH 16,214, including UAH 14,434 for 73 female respondents and UAH 17,742 for 85 male respondents. Accordingly, the average salary of women is 89.0% of the average salary for the sample and 81.4% of the salary of men. The gender gap is 18.6%.

The size of the gender gap is significantly differentiated by the levels of the qualification hierarchy of the surveyed enterprises (*Fig. 1*).

The sample did not include representatives of the simplest professions (jobs that do not require qualifications). At the 2nd qualification level (skilled workers with tools, operators of machines and mechanisms), there is a relatively high gender gap — 28.2%. At the third qualification level (linear management of production processes), the gender gap is reduced to 5.2%, and at the fourth level (technical employees) it reaches its maximum value — 51.0%. However, this qualification level accounts for only 4.5% of the total number of respondents, so the overall impact of this large discrepancy on the aggregated gender gap is small. More significant for determining the overall gender gap is the 5th level (specialists and professionals of lower skill levels) and 6th (professionals of higher skill levels) qualification levels, which account for 33.5% and 27.2% of the total number of respondents, respectively. However, within these qualification levels, the gender gap is 5.4% at the fifth level and 1.3% at the sixth. Finally, at the seventh qualification level (management and managers), which accounts for 13.3% of respondents, the gender gap is 3.6%.
The eighth qualification level (top management of energy companies) is represented only by men, whose number is 2.5% of the number of respondents, and the salary is UAH 23,750, which is 33.9% higher than the average salary for men and 46.5% higher than the average salary for all qualification levels for women and men of respondents.

The hypothesis that a significant gender gap in the remuneration of respondents of the 2nd qualification level (skilled workers) is due to the higher involvement of male respondents in work in difficult and harmful conditions was considered. The high share of surcharges and allowances that compensate for extreme working conditions is a distinctive feature of the remuneration system in Ukraine, especially in the public sector and, according to the results of interviews with employees, is fully inherent in the surveyed energy enterprises.

However, in fact, according to the results of the survey, it was revealed that both in terms of the presence of factors of severity and harmfulness of work, and in terms of the share of the non-tariff part of wages (which includes compensation surcharges for severity and harmful working conditions), women outnumber men.

In particular, among women, the percentage of respondent-workers who indicated the presence of factors of severity and harmfulness of work in the workplace is close to 100. And among men — close to 66.

The average share of the tariff salary for men employed at the 2nd qualification level is about 70%, and for women is less than 50%, which suggests a greater impact of surcharges for the severity and harmful working conditions on the salaries of women of the corresponding qualification level.

Rather high gender gap is formed as differences in the salaries of women and men employed at the same levels of the qualification hierarchy of the surveyed energy companies (mainly at the 2nd, 3rd and 4th levels) and due to differences in the distribution of women and men between the qualification levels (in particular, the absence of women at the 8th level, with the highest salary).

In particular, the differences in the distribution of female and male respondents by qualification levels are generally manifested in a higher average qualification level of male respondents than women: the average for respondents of both sexes is 5.11, for men — 5.35, and for women — 4.84.

![Figure 1](image-url)
Women predominate at the lower (2nd) qualification level (Fig. 2), and men — on the two highest.

However, the sample of qualification levels «specialists and professionals of lower qualification levels» and «professionals of higher qualification levels» are dominated by women.

A similar pattern is observed if we consider the specific weights of representatives of different qualification levels in the total number of female and male respondents (Fig. 3)
Accordingly, despite the relatively high standardization of remuneration in the energy sector (the system of individual contracts has a minimal distribution, and typical, industry, state, uniform tariffs and prices, official salaries and wage rates prevail among the tools of the organization of remuneration), significant differences in the remuneration of women and men are caused by both differences in the distribution of these categories of respondents between jobs of different qualification levels, and differences in the remuneration of women and men employed at the same qualification levels.

At the same time, if at lower qualification levels the gender gap is more affected by differences in the remuneration of women and men employed at the same qualification level, then with the growth of the position of employees in the hierarchy of the enterprise, the predominance of men at higher qualification levels has a greater impact on the gender gap.

**Conclusions.**

1. In the sample, a gender pay gap of UAH 3307.6, or 18.6% of men’s wages, was recorded, which in the conditions of a fairly high standardization of wages in the energy sector indicates the presence of a complex system of factors that limit the ability of women to realize their labor potential through high-paying work at the surveyed energy enterprises.

2. The leading factor in the gender pay gap is the unequal access of women and men to gaining the characteristics necessary for increasing wages. In particular, the disparity in the distribution of the total number of female and male respondents between the qualification levels (the average qualification level of women is 4.8 vs. 5.4 for men), together with differences in education and experience, cause UAH 2265 of the absolute wage gap (12.8% of men’s salaries and 68.5% of the total size of the actually recorded gender gap).

The unequal level of remuneration of women and men who have similar characteristics of the complexity of the work (they work at the same level in the qualification hierarchy of companies), experience and education causes UAH 1043 of the absolute wage gap (5.9% of men’s salaries and 31.5% of the total gender gap).

Accordingly, the calculations suggest that the inequality of opportunities for realizing the labor potential of women and men in the energy sector manifests itself to a much greater extent in restricting women’s access to higher-paid positions than in underestimating wages compared to men working in similar positions.

3. Gender gap formation through unequal remuneration of labour of women and men who have similar characteristics of experience, qualifications and complexity of the work is localized in the lower qualification levels (from the 2nd to the 4th), and through inequality of access to high-paying work is manifested in the absence of women at the highest (8th) qualification level, a clear predominance of men at the 7th qualification level and a noticeable predominance at the third qualification level, which in terms of payment outscores both the 5th and 6th qualification levels. Accordingly, the leading factor in the gender pay gap is the predominance of men at the three highest paid qualification levels.

4. Localization of differences in remuneration of similar characteristics of qualifications, experience and complexity of work at lower levels of the qualification hierarchy, as well as the weakening of such inequality as the experience of employees increases, indicates that the problem of gender inequality is more inherent in the segment of ‘peripheral’ employment. As the skills and experience grow (respectively, the value of employees to employers), the problem of gender pay inequality becomes less noticeable. However, the number of women who reach a level in their career growth where gender pay inequality is almost not observed is less than the number of men.

**Література**

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