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The Resource Curse: The Situation of Women in Resource-Rich Countries

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Abstract

Motivation: The occurrence of the resource curse phenomenon presents a significant challenge to the long-term, stable, and sustainable economic development of resource-rich countries. The paradox is a multidimensional phenomenon, encompassing economic, political, and social dimensions. An important issue that has been receiving increasing attention from researchers in recent years is determining the impact of natural resource abundance on women's economic and political participation.

Aim: This study aims to assess the situation of women in the professional sphere in countries rich in natural resources.

Results: The study conducted a detailed analysis of the situation of women in the professional sphere of 46 resource-rich countries over the period 1990–2020. It employed a critical literature review and quantitative methods, including data mining techniques such as cluster analysis and descriptive statistics. Based on the results of the study, it was found that in countries rich in natural resources where Islam is practiced, the situation of women in the professional sphere, considering all analysed indicators, is worse. The significant impact of Islam on the situation of women in resource-rich countries is additionally confirmed by the results obtained for the United Arab Emirates, which were classified among highly developed countries that achieve positive development outcomes in the context of the resource curse. However, the situation of women in this country is just as unfavourable as in the group of predominantly Islamic states. Thus, Islam significantly affects the situation of women in the professional sphere in resource-rich countries. Moreover, economies that are more heavily dependent on natural resource revenues tend to exhibit deeper gender disparities across key dimensions of labour market participation. The best results regarding the situation of women are achieved by developed countries that have managed to avoid the effects of the resource curse.

Keywords: resource curse; resource-rich countries; gender inequality; labour market; comparative analysis

JEL: Q00; J16; J24

1. Introduction

The resource curse refers to the tendency of resource-rich countries to experience weaker economic development compared to those relying on non-resource sectors. Though not a rule, this paradox poses a major challenge to the sustainable growth of nations exporting strategic resources like fuel and minerals. Due to their global and socio-economic significance, the resource curse remains a key topic of research.

The resource curse is a multidimensional phenomenon with economic, political, and social implications. One increasingly studied aspect is its impact on women in resource-rich countries. This issue was first addressed in a landmark and highly influential article by Michael L. Ross (2008), titled "Oil, Islam, and Women". In it, Ross argued that oil production – not Islam – reduces female labour force participation, thereby limiting women's political and social influence. His findings sparked broad scholarly debate, with some supporting his conclusions (e.g. Grecu & Bataille, 2024; Simmons, 2016, 2019) and others expressing scepticism (e.g. Groh & Rothschild, 2012; Kang, 2009).

Existing research on women in resource-rich countries has explored diverse dimensions, including the Dutch disease (Groh & Rothschild, 2012; Mavisakalyan & Tarverdi, 2019a, 2019b; Ross, 2008, 2012), institutional factors (Kang, 2009), the role of democracy (Liou & Musgrave, 2016), and

geographic, cultural, and social contexts (Rorbæk, 2016; Ross, 2008). Findings remain inconclusive. However, both the resource curse and women's economic and political participation are increasingly seen as critical global issues. Moreover, gender dynamics within the extractive sector remain among the least understood in resource economics, underscoring the need for further research.

This study aims to assess the situation of women in the professional sphere in countries rich in natural resources.

This study focuses on one specific aspect of women's status in resource-rich countries: the professional sphere, defined as their position in the labour market in terms of economic activity, employment, and unemployment. In recent research, this issue has received rather indirect attention. At the same time, the significance of this dimension is highlighted by the fact that the first study conducted on this topic by Ross (2008, 2012) was dedicated to analysing the impact of natural resource abundance on the number of women in the labour force, which in turn affects their political influence.

The study put forward two research hypotheses. Based on a detailed analysis of the relevant literature, it was found that there is no consensus among researchers regarding the impact of natural resource abundance on women's economic participation. Therefore, the first hypothesis was formulated as follows:

H1: In resource-rich countries where economies are more dependent on natural resources, the situation of women in the professional sphere is less favourable.

A broad discussion among researchers on this issue also concerns the significance of Islam for the socio-economic situation of women in resource-rich countries (Kang, 2009; Rorbæk, 2016; Ross, 2008, 2012). There is no consensus among researchers on this matter either. Therefore, the second hypothesis was formulated as follows:

H2: Islamic countries rich in natural resources are characterized by the least favourable situation for women in the professional sphere within the studied group of countries.

The study analysed women's professional status in 46 resource-rich countries from 1990 to 2020, using clearly defined selection criteria and data obtained from the World Bank's World Development Indicators and Gender Statistics Database, as well as the International Labour Organization's database. Covering a 30-year span allowed for identifying long-term trends, with 2020 chosen as the endpoint due to its relative stability before the COVID-19 pandemic. To test the research hypothesis, the study combined a critical literature review with quantitative methods, including data mining techniques like cluster analysis and descriptive statistics.

The paper is organized as follows: Section 2 provides a detailed review of the theoretical and empirical literature. Section 3 outlines the research meth-

ods used, along with the data and statistics specifications. Section 4 presents the results and discussion, while Section 5 concludes the paper.

2. Literature review

The phenomenon of the resource curse (also known as the paradox of plenty (Cooper & Karl, 1998), the paradox of economic development in resource-rich countries, is a subject of extensive research by specialists in economics (Auty, 2004; Dymitrowska, 2015, 2023; Stevens, 2005), political science (Ross, 1999; Humphreys, 2005) and sociology (Papyrakis & Parcero, 2022). While in initial studies the resource curse was analysed in economic terms, focusing primarily on the significance of Dutch disease (Corden & Neary, 1982), over time the scope of the paradox of plenty has expanded to include new dimensions – political, social, institutional, environmental, and cultural (e.g. Humphreys, 2005; Ross, 2004; Rosser, 2006). Thus, the literature on the natural resource curse is extensive and multidimensional.

A relatively new topic in research on the resource curse is the assessment of the impact of resource abundance on the situation of women in the economic, political, and social spheres. Although this dimension of the resource curse has not yet been thoroughly studied, certain areas of research can be identified based on the literature review (Scheme 1). These include: the Dutch disease argument, social and cultural determinants, political conditions (democracy, autocracy), institutional quality and governance, industry specifics, and demographic trends.

One of the most influential studies on this topic is Michael Ross's (2008) analysis, based on the Dutch disease model by Corden and Neary (1982). Dutch disease describes how a resource boom harms the competitiveness of non-resource sectors, often causing their decline and increasing reliance on natural resource exports (Corden & Neary, 1982; Dymitrowska, 2015). Ross argued that, in developing countries, women are typically employed in tradable sectors – especially low-wage export industries and agriculture. When these sectors contract, women's labour market position worsens. Meanwhile, rising male incomes in the resource-extraction sector increase total household earnings without requiring women's labour market participation, which reduces their motivation to seek employment. This decline in economic participation also diminishes women's political influence (Ross, 2008).

Ross also highlights the role of socio-cultural factors, particularly the influence of Islam, in the context of the resource curse and women's status. Analysing data from 169 countries (1993–2002), he concludes that it is oil – not Islam – that reduces female labour force participation, thereby limiting women's political influence. He further argues that oil-producing states often maintain patriarchal norms, laws, and institutions that reinforce gender inequality.

Ross's study sparked a heated debate among researchers. His findings have faced considerable criticism and have been empirically re-examined. Some researchers agreed with Ross's approach and, by expanding his study to include new issues, reached similar conclusions (Awoa Awoa et. al., 2022; Grecu & Bataille, 2024; Mavisakalyan & Tarverdi, 2019a, 2019b). However, others remained sceptical, particularly regarding the argument related to the significance of Islam for the situation of women in resource-rich countries (Groh & Rothschild, 2012; Kang, 2009; Rorbæk, 2016).

For example, Simmons (2016, 2019), in his study of US states over the period 1997–2012, presented evidence of a "gendered resource curse". He argued that resource abundance, combined with patriarchal attitudes, leads to a reduction in the significance of women in the economic and political spheres.

Liou and Musgrave (2016) support Ross's view, linking autocratic survival in resource-rich countries to state-imposed gender bias. They highlight the role of political regimes in shaping the resource curse's gendered effects. Their analysis shows that in autocratic, resource-rich states, resource wealth fosters anti-social policies that restrict women's political rights and freedoms.

Mavisakalyan and Tarverdi (2019a, 2019b), building on Ross (2008), confirmed a negative link between resource abundance and women's employment, political participation, and social engagement. They also identified two additional effects: economically, oil production shifts women's employment from the traded to the non-traded sector; socially, it leads to earlier marriage and higher fertility rates among women.

Awoa Awoa et al. (2022), expanding on Ross's work, analysed 130 developing countries (2002–2017) and found that higher resource rent *per capita* strongly undermines women's political empowerment. Resource abundance was shown to reduce female employment in manufacturing and tradable services, widen gender gaps in education, and increase fertility rates. The study also emphasized the critical role of institutional quality and governance.

The most recent study confirming the negative impact of resource abundance on women's economic and political participation is by Grecu and Bataille (2024). Analysing giant oil discoveries, they found these events correlate with poorer outcomes for women – higher male-to-female ratios, more teen births, and lower female tertiary education rates. However, during oil price increases, this negative effect is not significant, and impacts on health outcomes tend to fade after eight years.

Among the scholars critical of Ross's conclusions is Kang (2009), who reanalysed his study by incorporating the institutional dimension. She found that gender quotas mitigate the negative impact of oil rents on women's political representation in resource-rich countries. Both her findings and those of Awoa Awoa et al. (2022) highlight the importance of institutions in shaping gendered outcomes of the resource curse. Recent research increasingly

emphasizes that institutional quality and governance are key to counteracting the resource curse (e.g., Entele, 2021; Mehlum et al., 2006; Narh, 2023).

The institutional dimension also includes the role of democracy in the resource curse. In principle, democracy ensures civil liberties, the rule of law, and equal political rights – including for women. Thus, its erosion limits women's freedoms and participation in economic and political life (Awoa Awoa et al., 2022). Yet, many resource-rich countries lack democratic governance and are ruled by autocratic regimes.

Among other sceptics of Ross's study are Groh and Rothschild (2012), re-evaluating his (2008) study, found no causal link between oil rents and female labour force participation via the gendered Dutch disease. Instead, they emphasized the role of Islam in explaining low female labour force rates. Similarly, Rorbæk (2016) argued that the negative impact of oil on women's rights is mainly driven by the 11 Arab OAPEC countries. He noted that Muslim countries underperform regardless of oil wealth, income, or democracy, attributing this to enduring orthodox elements of Islamic culture that limit women's empowerment.

Beyond institutional and cultural factors, scholars also examine demographics and sector-specific dynamics. Rising natural resource values are linked to higher fertility rates (Black et al., 2013; Grecu & Bataille, 2024), which significantly reduce women's labour force participation – each birth lowering work availability by nearly two years. Thus, shifts in resource value can directly affect female employment (Grecu & Bataille, 2024). The extractive sector is traditionally male-dominated, with limited female employment – even in developed countries. When this industry dominates the economy, women's labour market prospects tend to worsen, especially in resource-dependent nations.

The main conclusions drawn from the literature review are summarized in Scheme 1 and Table 1.

The reviewed literature consistently indicates that resource abundance tends to depress women's participation in the labour market and, consequently, their political and social influence. These effects appear to operate through several mechanisms, including rising male incomes in the extractive sector, the reinforcement of patriarchal norms, and institutional weaknesses typical of rentier economies. Studies further suggest that these dynamics are particularly pronounced in Muslim-majority countries, where cultural and religious norms intersect with the economic structure of resource dependence to constrain women's autonomy. Accordingly, the empirical analysis tests two hypotheses: first, that women's professional position is less favourable in more resource-dependent economies; and second, that this disadvantage is most evident in resource-rich Islamic countries.

3. Methods

3.1. Research group (selection criteria and procedure)

The study focuses on resource-rich countries typically analysed within the context of the resource curse. According to the authors, this phenomenon applies to countries whose economies rely heavily on the extraction and export of natural resources – not merely those with large reserves that are neither extracted nor exported.

After conducting a detailed analysis of the literature to define the research group, the following criteria were adopted: the average annual revenues of the mining industry (as a % of GDP) exceed 25%, or 25% of the average annual exports consist of natural resources. The choice of these percentage thresholds was based on findings presented in previous research studies dedicated to the resource curse (Auty, 2004; Dymitrowska, 2015; Gelb, 1988; Stevens, 2005; van der Ploeg, 2011).

The study focuses on strategic resources commonly linked to the resource curse: fuel resources (oil, natural gas, coal) and mineral resources, as defined by the World Bank: tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.

Data were sourced from the World Bank's World Development Indicators for 1990–2020, with 1990 chosen for data availability and 2020 marking the pre-COVID-19 cutoff. Indicators included rents from minerals, oil, gas, and coal (% of GDP), as well as fuel and metal exports (% of merchandise exports). From these, two indices were calculated: total natural resource rents (TNRR) and total natural resource exports (TNRE). The final sample comprised 46 countries that exceeded set thresholds in at least 16 of the 31 years.

Some countries were excluded from the study for various reasons, such as a lack of natural resources, a focus on the export of services or agricultural products, and significant gaps in available statistical data. The final research group comprised 41 countries, as presented in Table 2.

3.2. Country classification

The classification of the examined group of resource-rich countries was conducted using cluster analysis, which is a technique that enables the detection of interdependencies among objects. The choice of this method (Kaufman and Rousseeuw, 2009, pp. 1–3) was motivated not only by its effectiveness in detecting structures based on a set of specific variables (varying both temporally and spatially) but also to ensure the clarity of the comparative analysis of the situation of women in the labour market across the examined group of countries.

The purpose of the cluster analysis conducted in this study is to categorize the group of countries under investigation in terms of the professional situation of women and men over the period 1990–2020. Based on the conducted literature review and examination of international organizations' databases, variables characterizing the economic situation of the studied countries were selected for cluster analysis, with particular emphasis on manifestations of the resource curse phenomenon[1].

In the course of the analysis, the selected variables were collected for 41 countries over the period 1990–2020. Missing data points were replaced with country-specific averages. The data used in the cluster analysis were standardized. The Ward method, an agglomerative clustering technique, was employed as the classification method. This approach assumes that initially each object represents a separate cluster. Distances between all objects are calculated, and the two most similar are merged into a pair. The algorithm then iterates this process until all objects are merged into one cluster. Euclidean distances were applied as the similarity measure (Andenberg, 2014, pp. 141–148).

3.3. Indicators of gender inequality in the professional sphere

The presented indicators are intended to capture the differentiated status of women and men with regard to the level and structure of their economic activity, employment, and unemployment. Variations in the values of the analysed variables reflect the extent of gender-based disparities within the professional sphere. The literature highlights several fundamental metrics used to quantify gender inequality in the labour market (Bettio et. al., 2009; Domagała, 2019, pp. 31–35).

The first of these measures is the Economic Activity Disparity Index (hereinafter referred to as EADI), which is defined by the following formula:

$$EADI = Lf_m - Lf_f,$$

where:
Lf_m – Labour force participation rate, female,
Lf_f – Labour force participation rate, male.

Subsequently, attention should be directed to the Employment Disparity Index (hereinafter: EDI), which is defined by the following formula:

$$EDI = E_m - E_f,$$

[1] Variables used for cluster analysis (World Bank 2025a;2025b): Fuel exports (% of merchandise exports); GDP per capita (constant 2015 US$); Labour force, female (% of total labour force 15+); Ores and metals exports (% of merchandise exports); Total natural resources rents (% of GDP).

where:
E_m – Employment to population ratio, male,
E_f – Employment to population ratio, female.

Another indicator under analysis addresses gender inequality in the context of unemployment — Unemployment Disparity Index (hereinafter: UDI) – and is defined by the following formula:

$$UDI = U_f - U_m,$$

where:
U_f – Unemployment, female (% of female labour force)
U_m – Unemployment, male (% of male labour force)

These indices can take values ranging from –100 to 100. A positive value of the index is interpreted as indicating a higher level of economic activity (EADI) or employment (EDI) among men than among women during the analysed period, while a negative value reflects the opposite relationship. In the case of the Unemployment Disparity Index (UDI), a positive value indicates a higher unemployment rate among women compared to men, whereas a negative value signifies a higher unemployment rate among men. The closer the values of these indices are to zero, the greater the level of gender equality observed in the respective dimension of the labour market.

The observation of changes in employment structure by gender within the economy is conducted through the analysis of the employed population according to, among other factors, economic sectors and ownership, economic sections, occupational groups, positions, and employment status (Kwiatkowska, 2013, pp. 179–180). This approach aims to reveal the extent of gender inequality within various labour market structures by analysing feminization and masculinization indicators across different segments (Strawiński et al., 2016). The article presents a comparative analysis of the identified country clusters using the following structural indicators (hereinafter referred to as RATIO).

- Ratio of female to male employment in three economic sectors:

$$RATIO_{ststus} = FE_{group\ 1,\ 2,\ 3} \Big/ ME_{group\ 1,\ 2,\ 3}$$

where:
FE sector 1,2,3: Female Employment in: [1]agriculture/ [2]industry/ [3]service,
ME sector 1,2,3: Male Employment in: [1]agriculture/ [2]industry/ [3]service.

- Ratio of female to male employment by status on the labour market:

$$RATIO_{ststus} = FE_{group\ 1,\ 2,\ 3} \Big/ ME_{group\ 1,\ 2,\ 3}$$

where:
FE status 1,2,3: Female Employment in a group of: [1]employers/ [2]self-employed/ [3]employees,
ME status 1,2,3: Male Employment in a group of: [1]employers/ [2]self-employed/ [3]employees.

A value of the indicator equal to 1 (RATIO = 1) is interpreted as gender equality. An indicator value greater than 1 (RATIO > 1) signifies feminization of the given structure, whereas values below 1 (RATIO < 1) indicate masculinization[2].

In the context of employment analysis by labour market status, it is equally important to examine employment distribution by required skill levels (ILO, 2023). Such an approach facilitates the identification of occupational segregation and its associated phenomena, notably the glass ceiling and the sticky floor effects (Totleben&Domagała, 2024, pp. 82-84).

4. Results and discussion

4.1. Cluster analysis

The cluster analysis was conducted in three stages:
Stage 1: The criterion of the largest relative increase in distance (>10) between consecutively formed clusters was adopted, indicating the removal of four dendrogram edges (see Scheme 2):

- Between groups [A, B] – [C, D, E]: 26.39
- Between groups [C] – [D, E]: 14.93
- Between groups [D] – [E]: 11.86
- Between groups [A] – [B]: 10.06

Stage 2: The countries were divided into five groups and given labels[3]:

- Group A: Islamic countries (IC): Algeria, Bahrain, Egypt, Iran, Iraq, Oman, Saudi Arab, Yemen[4];

2 For ease of interpretation, the raw ratio value is multiplied by 100, allowing the result to be expressed as the number of women per 100 male workers.

3 These labels and their abbreviations will be used throughout the article.

4 The classification of Islamic countries adopted in this study serves as an analytical simplification aimed at capturing the interaction between resource dependence and socio-cultural norms in predominantly Muslim societies, rather than implying homogeneity within this group.

- Group B: Highly resource-dependent countries (HRDC): Angola, Azerbaijan, Brunei Darussalam, Congo, Rep., Gabon, Kuwait, Libya, Qatar, Turkmenistan;
- Group C: Countries rich in mineral resources (CRMR): Armenia, Bolivia, Chile, Guinea, Jamaica, Mauritania, Mongolia, Mozambique, Niger, South Africa, Zambia;
- Group D: Countries that avoided the resource curse (CARC): Australia, Canada, Norway, Peru, United Arab Emirates;
- Group E: Countries rich in fuel resources (CRFR): Cameroon, Colombia, Ecuador, Indonesia, Kazakhstan, Nigeria, Russian Federation, Trinidad and Tobago.

Stage 3: To validate the cluster analysis performed using the agglomerative method, a k-means clustering approach was applied as a control, employing Euclidean distances and defining five groups. The results were largely consistent with the agglomerative clustering, except for five countries: Nigeria (assigned to group B instead of E), Kuwait (group A instead of B), Egypt (group E instead of A), Bolivia (group E instead of C), and South Africa (group E instead of C)[5].

The examined countries were thus grouped based on the highest possible similarity, with particular emphasis on the dependence of their economies on natural resource wealth. A preliminary comparative analysis of the cluster analysis results and the classification of resource-rich countries according to key labour market indicators (World Bank, 2025a) suggests that countries within each cluster may also share similarities regarding the economic status of women in the professional sphere.

Countries in cluster IC exhibited, on average during the study period, the lowest levels of women's economic activity (19.4%), the lowest average employment rate (16.92%), and the highest average unemployment rate (14.47%). Conversely, countries in group D (CARC) showed the highest average female employment rate (52.74%) and the lowest unemployment rate (5.4%) among the studied clusters between 1990 and 2020. Moreover, countries rich in mineral resources (cluster C) and fuel resources (cluster E) both demonstrated female employment rates exceeding 50% of the total economically active female population—50.83% for cluster C and 52.23% for cluster E—and unemployment rates below 10%—8.6% for cluster C and 7.78% for

[5] In the case of Bolivia and South Africa, the change in cluster assignment may stem from their specialization in exporting mineral as well as fuel resources. For Egypt, both its specialization in the export of oil and natural gas and the presence of Islam as the state religion play a key role. The significant influence of each of these factors may have affected the clustering outcome. A similar situation can be observed in Kuwait, where Islam is also the state religion. High resource dependence is one of the key drivers of the resource curse. Nigeria is a country highly dependent on the extraction and export of natural resources. When applying various analytical methods, this factor may outweigh the influence of export specialization in fuel commodities.

cluster E. Countries classified in the HRDC group had an average female employment rate of 46.85% and an average unemployment rate of 12.56%.

4.2. Gender inequalities in the labour market

The level of inequality in the labour market can be assessed through an analysis of key indicators such as economic activity, employment, and unemployment. When this analysis is complemented by a gender perspective, it provides a clearer picture of the disparities between women and men in the labour market. In the context of highly developed countries and European economies, considerable academic attention has been devoted to the gender pay gap (Blau & Kahn, 2017) as well as the phenomenon of the gender gap on corporate boards (Tyrowicz et al., 2020). In contrast, for resource-rich countries, a more accurate assessment of women's position in the labour market may be achieved by examining basic labour market activity measures through a gender lens, such as the Economic Activity Disparity Index (EADI), the Economic Disparity Index (EDI), and the Unemployment Disparity Index (UDI)[6].

An analysis of the average values of the EADI (see Chart 1) across the identified clusters reveals that, in all country groups, women were less economically active than men. The respective average EADI values were: [A] – 55.54; [B] – 18.61; [C] – 17.21; [D] – 21.42; [E] – 19.68. Notably, the largest gender disparities were observed in the group of Islamic countries. A similar pattern emerges when examining gender inequalities in employment as measured by the EDI (see Chart 2), where the average values for each country cluster during the study period were as follows: [A] – 52.31; [B] – 18.71; [C] – 16.37; [D] – 20.65; [E] – 19.30. In both cases, the smallest gender gaps in economic activity and employment were recorded in group [D] – the countries that avoided the resource curse – when the United Arab Emirates was excluded from the analysis (EADI: 14.17; EDI: 13.17). This finding may indicate the significant influence of Islamic religious norms, cultural patterns, and related gender stereotypes on labour market gender disparities.

This trend is also evident in the context of unemployment, which disproportionately affects women. According to the average values of the UDI (see Chart 3): [A] – 6.8; [B] – 2.9; [C] – 1.2; [D] – 0.3; [E] – 1.7, women consistently exhibited higher unemployment rates than men across all country clusters. Once again, the most pronounced disparities were found in the group of Islamic countries, while the smallest gender gap was observed in the group of countries that avoided the resource curse.

6 The closer the values of these indices are to zero, the greater the level of gender equality observed in the respective dimension of the labour market.

Another important dimension in the analysis of gender inequality in the labour market is occupational segregation, which manifests in the masculinization or feminization of specific economic sectors or occupational groups – often characterized by distinct skill levels or labour market status, such as employer roles. An examination of the $RATIO_{sector}$ across economic sectors (see Chart 4)[7] reveals that the services sector is feminized in all examined country groups ([A] – 117; [B] – 122; [C] – 115; [D] – 138; [E] – 134). Agriculture shows relative gender parity in clusters [C] – 96 and [A] – 90. In contrast, a male employment predominance is observed in the remaining clusters: [B] – 84; [E] – 71; [D] – 47. Industry, on the other hand, is marked by masculinization across all country groups, with the most pronounced imbalance in group [D] – 32, followed by [B] – 42; [A] – 48; [C] – 58; and [E] – 61.

When examining gender disparities in labour market status ($RATIO_{status}$ – see Chart 5), particular attention should be paid to the masculinization of the employer group across all analysed country clusters: [A] – 33; [D] – 37; [E] – 44; [C] – 45; [B] – 47. Among the self-employed, relative gender parity was observed across most groups: [A] – 97; [B] – 92; [C] – 109; [E] – 104, with the exception of group [D] – 65. Interestingly, group [D] also showed full gender parity among employees ([D] – 100). In contrast, for the remaining clusters, $RATIO_{employees}$ values indicate a male-dominated structure in the employee segment: [A] – 92; [B] – 81; [C] – 72; [E] – 82. This underlines the importance of further analysing the employee category in terms of the skill levels associated with male and female occupations.

The adopted analytical approach enabled the identification of the glass ceiling effect in resource-rich countries. In all analysed clusters, women were, on average, underrepresented in high-skill occupations compared to men: [A] – 24%; [B] – 39%; [C] – 41%; [D] – 40%[8]; [E] – 49% (see Chart 6). The gender gap was most pronounced in the Islamic Countries group, where less than one-quarter of individuals in high-skill positions were women.

Moreover, the analysis revealed the presence of the sticky floor phenomenon (see Chart 7) during the study period. In clusters [B] and [C], over half of all employed women were concentrated in low-skill occupations ([B] – 51%; [C] – 54%), typically associated with low wages and limited social protection. In cluster [A] – 32% and [E] – 34%, more than one-third of all working women held low-skill jobs. The lowest average share was observed in cluster [D] – 29%, with some countries—such as Canada, Australia, and Norway—recording values below 10% (see Chart 7). Although vulnerable employment affects both genders, women are disproportionately represented

7 The RATIO indicator reflects the number of women employed per 100 men in a given economic sector.

8 When the United Arab Emirates are excluded, the indicator stands at 46%.

in certain forms of such work. Men are more likely to engage in own-account employment, whereas women more often occupy unpaid contributing roles within households or family businesses.

5. Conclusion

Globally, women face greater challenges in accessing employment compared to men. When employed, they are disproportionately concentrated in low-quality and precarious jobs, with limited prospects for significant improvement. Across countries at all stages of economic development, women's participation in paid employment is primarily shaped by individual preferences. However, these preferences are significantly influenced by socio-economic constraints associated with traditional gender roles. Gender roles vary significantly across regions, cultures, religions, and individual households. Despite that, women who seek employment encounter greater barriers to labour market entry than men, with this disparity being particularly pronounced in Africa and the Arab States.

The results of the conducted analysis offer empirical support for both research hypotheses. In line with H1, countries whose economies are more heavily dependent on natural resource revenues tend to exhibit deeper gender disparities across key dimensions of labour market participation. The best results regarding the situation of women are achieved by developed countries that have managed to avoid the effects of the resource curse. These findings align with theoretical perspectives on the resource curse, which emphasize not only institutional stagnation but also the persistence of traditional social structures that constrain women's economic agency. Furthermore, H2 is confirmed by the evidence that Islamic resource-rich countries show the most pronounced gender inequalities within the examined sample. These countries consistently score lowest in indicators measuring women's participation in employment, entrepreneurship, and high-skill occupations, while showing the highest levels of occupational segregation and the strong effects of both the glass ceiling and the sticky floor. The intersection of resource dependence and cultural-religious norms rooted in patriarchal interpretations of Islam appears to exacerbate structural barriers to gender equality in the labour market. Taken together, these findings highlight the complex interplay between economic structure, institutional quality, and socio-cultural factors in shaping the professional status of women.

Future research on resource-rich countries should explore the impact of the COVID-19 shock and assess post-pandemic labour market dynamics, while also more deeply examining cultural determinants—such as religious affiliation and prevailing family models—that shape gender roles and labour market outcomes.

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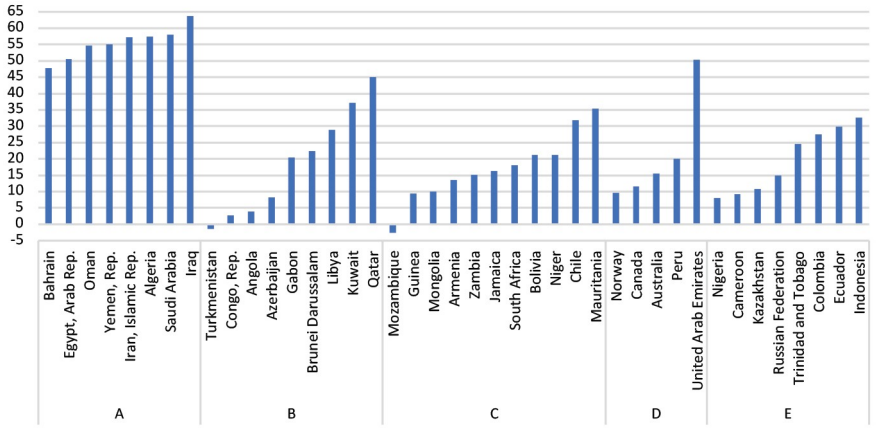
Appendix

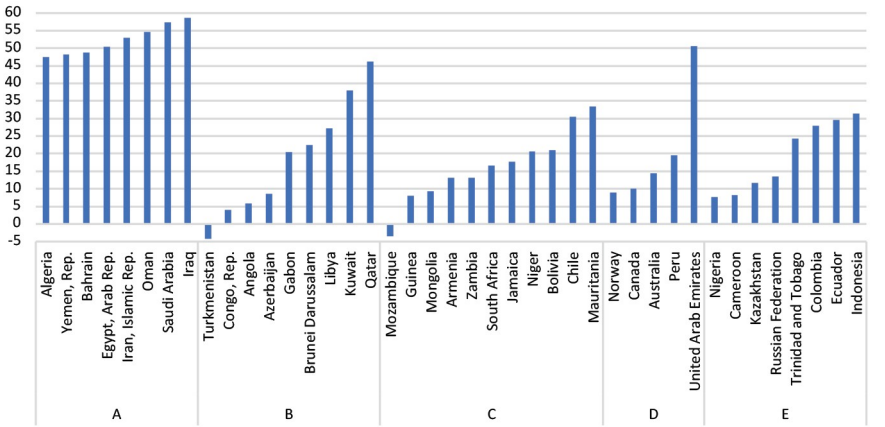
Chart 1. Economic Activity Disparity Index by Gender



Additional information: The countries were ranked by the increasing value of the variable in each group. Average values for each country from 1990 to 2020 were used in the analysis.

Source: Own elaboration based on World Bank 2025a.

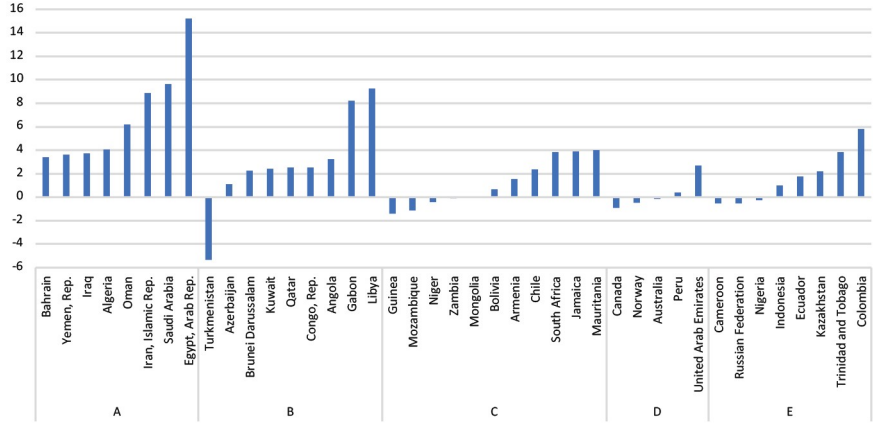
Chart 2. Employment Disparity Index by Gender



Additional information: The countries were ranked by the increasing value of the variable in each group. Average values for each country from 1990 to 2020 were used in the analysis.

Source: Own elaboration based on World Bank 2025a.

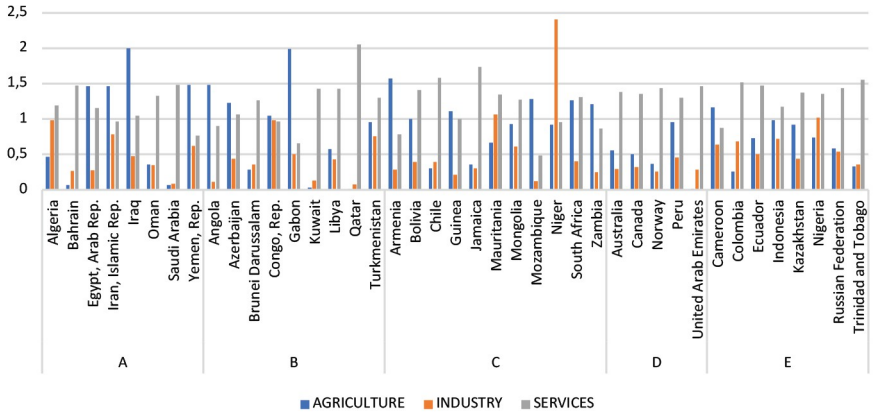
Chart 3. Unemployment Disparity Index by Gender



Additional information: The countries were ranked by the increasing value of the variable in each group. Average values for each country from 1990 to 2020 were used in the analysis.

Source: Own elaboration based on World Bank 2025a.

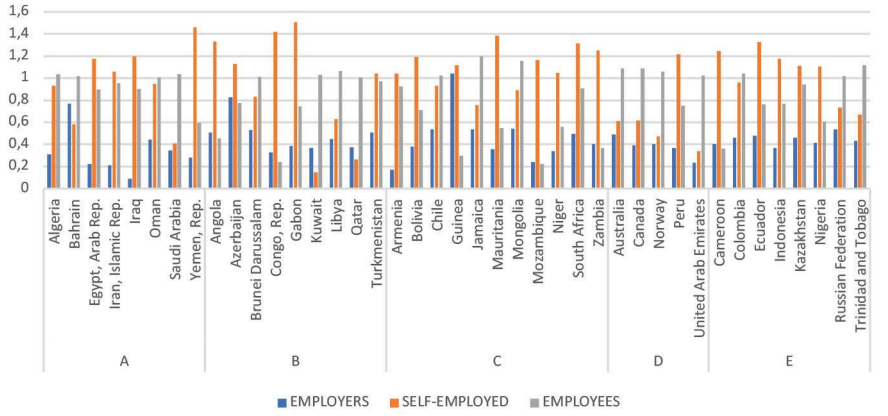
Chart 4. Ratio of female to male employment in three economic sectors ($RATIO_{sector}$)



Additional information: Countries in each cluster are listed alphabetically. Average values for each country from 1990 to 2020 were used in the analysis.

Source: Own elaboration based on World Bank 2025a.

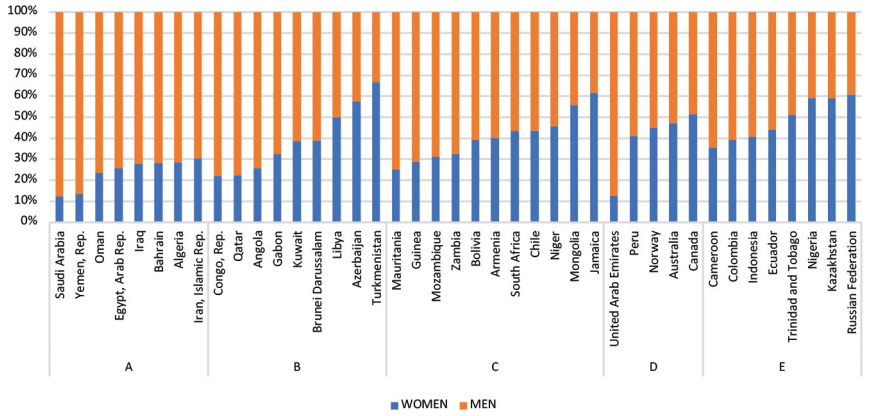
Chart 5. Ratio of female to male employment by status in the labour market ($RATIO_{status}$)



Additional information: Countries in each cluster are listed alphabetically. Average values for each country from 1990 to 2020 were used in the analysis.

Source: Own elaboration based on: World Bank 2025a.

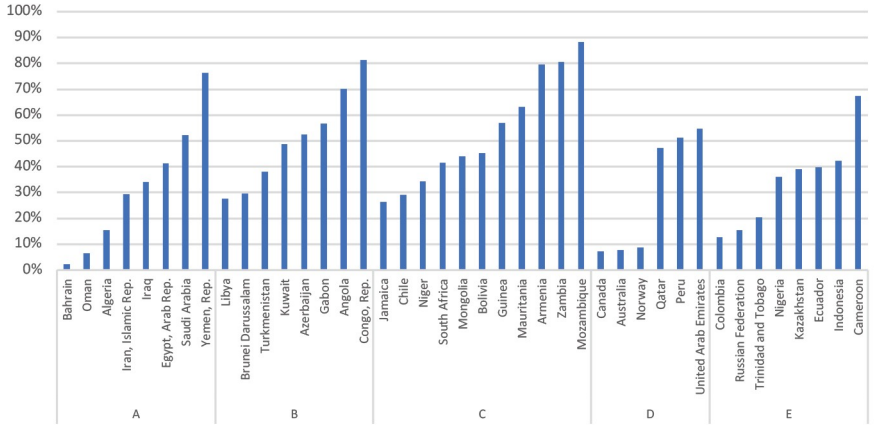
Chart 6. Proportion of women and men among total employment in occupations requiring a high level of skills



Additional information: The countries were ranked by the increasing value of the variable in each group. Average values for each country from 1990 to 2020 were used in the analysis. Skill level 3/4: Managers, professionals, and technicians.

Source: Own elaboration based on: ILO 2023; ILO 2025.

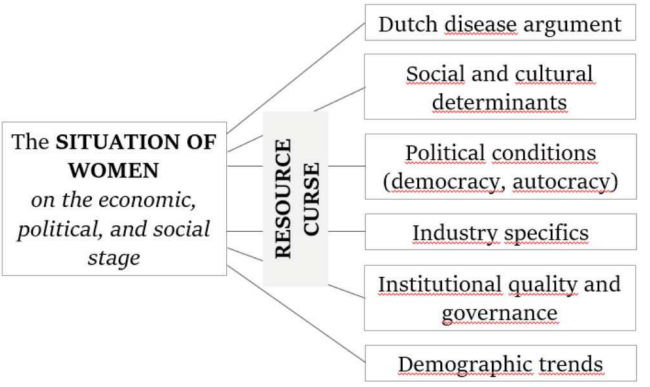
Chart 7. Proportion of women (in%) in occupations requiring a low level of skills among total female employment



Additional information: The countries were ranked by the increasing value of the variable in each group. Average values for each country from 1990 to 2020 were used in the analysis. Skill level 1: elementary occupations.

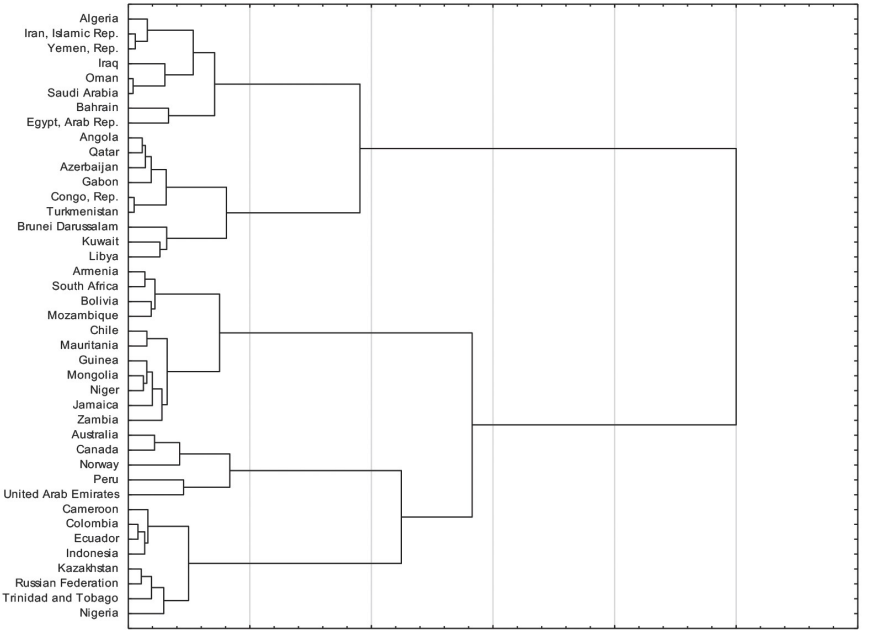
Source: Own elaboration based on: ILO 2023; ILO 2025.

Scheme 1. Areas of research



Source: Own elaboration.

Scheme 2. Dendrogram of Similarity Among the Examined Countries



Additional information: Variables used in the cluster analysis were averaged (country-level means for the years 1990–2020) and standardized.

Source: Own elaboration.

Table 1. Literature review

Year	Authors	Research issue	Main conclusions	
2008, 2012	Ross	RA & women's participation	oil reduces female labor force → lower political influence	RA ↓ women's econ/pol participation
			oil, not Islam, lowers female labor → less political/social influence	
2016, 2019	Simmons	resource wealth & women's status in U.S. states	gendered resource curse	
			RA ↑ non-labor income → ↓ female workforce participation	
			resources + patriarchy → weaker women's econ/pol influence	
2016	Liou & Musgrave	gendered repression & autocratic survival	women's autonomy varies with oil income per capita (cross-country)	
			RA → anti-social policies in autocracies → limits on women's rights	
2019a, 2019b	Mavisakalyan & Tarverdi	RA & women's participation	oil production ↓ women's labor & political representation	
			oil ↓ women's jobs in traded sector, ↑ in non-traded sector	
		RER	oil → earlier marriage & more children for women	
2022	Awoa Awoa et al.	RA & women's political empowerment	resource rent per capita ↓ women's political empowerment	
			outcomes mainly depend on institutional quality	
			RA ↓ female jobs in manufacturing/tradable services, ↑ education gap & fertility rate	
2024	Grecu & Bataille	oil discoveries & female outcomes	giant oil finds → worse outcomes for women: ↑ male/female ratio, teen births, ↓ female tertiary education, health impact fades after 8 years	
			rising oil prices → no clear link between oil finds & female outcomes	
2009	Kang	RER + institutional dimension	gender quotas offset oil rent effects on women's political representation	*RA ≠ women's econ/pol participation*
2012	Groh & Rothschild	RER	no evidence that oil rents affect female labor via gendered Dutch Disease	
			Islam significantly linked to lower female labor force participation	
2016	Rorbæk	oil abundance & poor women's rights in Muslim societies	oil's negative effect driven by 11 OAPEC members	
			Muslim countries underperform despite oil, income & democracy controls	
			Orthodox Islamic norms best explain limited Muslim women's empowerment	

Additional information: RA - resource abundance, RER - re-examination Ross's (2008).
Source: Own elaboration.

Table 2. Research group

	COUNTRY	RESOURCE			COUNTRY	RESOURCE	
1	Algeria	O, NG		22	Kazakhstan	O, NG	C, M, ME
2	Angola	O, NG	M, ME	23	Kuwait	O, NG	
3	Armenia		M, ME	24	Libya	O, NG	
4	Australia	CL, NG	M, ME	25	Mauritania	O, NG	C, ME
5	Azerbaijan	O, NG	M, ME	26	Mongolia	CL	C, ME
6	Bahrain	O, NG	A	27	Mozambique	NG, CL	M
7	Bolivia	NG	M, ME	28	Niger	U, O	M, ME
8	Brunei Darussalam	O, NG		29	Nigeria	O, NG	C
9	Cameroon	O, NG	A, M	30	Norway	O, NG	
10	Canada	O, NG	M, ME	31	Oman	O, NG	C
11	Chile		C, M, ME	32	Peru	O, NG	C, ME
12	Colombia	O, CL		33	Qatar	O, NG	
13	Congo, Rep.	O	C	34	Russian Federation	O, NG, CL	M, ME
14	Ecuador	O		35	Saudi Arabia	O, NG	ME
15	Egypt, Arab Rep.	O, NG	A	36	South Africa	CL	ME
16	Gabon	O	M, ME	37	Trinidad and Tobago	O, NG	
16	Guinea	O	M, ME	38	Turkmenistan	O, NG	M
18	Indonesia	O, NG, CL	C	39	United Arab Emirates	O, NG	ME
19	Iran, Islamic Rep.	O, NG	M, ME	40	Yemen, Rep.	O, NG	ME
20	Iraq	O, NG		41	Zambia		C, CO
21	Jamaica		B, (A)				

Additional information: Both TNRR and TNRE > limit. Only TNRR > limit. Only TNRE > limit.

TNRR – total natural resource rent, TNRE - total natural resource export.

O – oil, NG – natural gas, M – minerals, ME – metals, C – copper, A – aluminium, CO – cobalt, B – bauxite, CL – coal, U – uranium.

Source: Own elaboration.