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New data sources and emerging issues

Gender in industry: how to close the gender data gap for better gender-responsive industrial strategies and policies

Note by United Nations Industrial Development Organization*

Abstract

Reliable data and statistics are crucial for policy makers to formulate and evaluate evidence-based gender-responsive strategies and policies essential for achieving inclusive and sustainable industrial development. Lack of data on the complex linkages between gender and industrial development holds back progress in addressing gender inequalities in industry and harnessing women's full potential as leaders and economic agents of change, and thereby transforming economies and generating inclusive growth.

The limited availability of gender-disaggregated data on labour participation and employment quality by manufacturing sector, business ownership by sector, technology adoption and asset ownership, has made it difficult to monitor how the pandemic affected women and men. At the country level, surveys are the most frequently used source of industrial data, followed by administrative sources and censuses. For most countries, the data supplier is the National Statistical Office (NSO). In a few cases, the data supplier is a government ministry. Most of the countries that provide information rely on a single data source. However, European Union (EU) member countries and other countries with a more developed statistical

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system tend to use a combination of sources, most often administrative sources, surveys and registers.

Given these constraints, sex-disaggregated industrial data remains relatively scarce. Moreover, given the contents of industrial or establishment surveys, as recommended by international guidelines, only information about participation in employment and remuneration can be collected through these instruments. Little gendered data on employment characteristics, job quality, productivity or other important factors are available specifically for industrial sectors.

The paper will present obstacles in collecting gender-disaggregated industrial statistics including difficulties with linking traditional industrial data sources with other available gender-sensitive statistical information. It will also highlight future priorities on improving industrial gender statistics.

I. Introduction

1. Reliable data and statistics are crucial for policy makers to formulate and evaluate evidence-based gender-responsive strategies and policies essential for achieving inclusive and sustainable industrial development. However, lack of data on the complex linkages between gender and industrial development holds back progress in addressing gender inequalities in industry and harnessing women's full potential as leaders and economic agents of change, and thereby transforming economies and generating inclusive growth.
2. This paper presents a conceptual framework to measure gender-relevant aspects of industrial development and it highlights the main obstacles in collecting gender-disaggregated industrial statistics including difficulties with linking traditional industrial data sources with other available gender-sensitive statistical information. It also emphasizes future priorities on improving industrial gender statistics.

II. Gender in industry

3. Industrialization can significantly contribute to poverty reduction and shared prosperity. It creates value added, increases competitiveness, generates revenue and enhances capabilities, but it must do so while providing equal opportunities of decent employment for both men and women. However, women are often precluded access to secure and well-paid jobs in manufacturing industries and related service sectors, and their participation in the development of new technologies remains limited. Recognizing this, United Nations Industrial Development Organization (UNIDO) is committed to a policy agenda that promotes gender equality for achieving inclusive and sustainable industrial development. Gender equality means equality in rights, responsibilities, opportunities and outcomes. In the context of inclusive and sustainable industrialization, it is about ensuring that the interests and needs of women and men are given equal weight in industrial policy design and implementation.
4. Gender equality and women's economic empowerment are thus central to the vision of achieving inclusive and sustainable industrialization and the 2030 Agenda for Sustainable

Development, and clear interlinkages can be identified between the targets of Sustainable Development Goal (SDG) 5 and SDG 9. Creating an enabling environment is a critical step in enhancing the participation of women in the economy (targets 5.1, 5.4, 5.c). Women's economic empowerment helps to strengthen women's ability to equally participate in existing markets (target 5.4, 5.5) and it increases their access to and control over productive resources and financial services (target 5.a, 9.1, 9.3, 9.4, 9.c).

5. However, industrial development can also reinforce gender inequalities when industrial expansion is based on increasing jobs for women while at the same time maintaining gender-based sectoral segregation and large gender wage gaps. It is therefore especially important to carefully investigate the terms under which women are included in the industrialization process and the public resources made available to support human development within this process, to establish whether their experience is truly empowering. The two-way interaction between industrial development and gender equality must be acknowledged to achieve long-term, sustainable growth by implementing policies that address gender bias and promote broad social investment, as well as women's access to skills, entrepreneurial capacity, infrastructure and innovation.¹
6. Women accounted for 39.2 per cent of the workers in the manufacturing sector globally in 2021. Nevertheless, they are overrepresented in low-wage, semi-skilled and often precarious positions, especially in labour-intensive sectors of the global value chain such as the textile, apparel, leather and footwear and horticultural sectors. Evidence suggests that these jobs are most affected by technological advancements such as automatization and digitalization brought about by the Fourth Industrial Revolution, which is expected to replace more jobs held by women than by men.²
7. To enable the development of gender-responsive and inclusive industrial policies and the monitoring of progress towards the SDGs, the collection and dissemination of gender statistics and sex-disaggregated data is essential. Without reliable and timely gender data there is a risk that policies will continue to be designed in a way that does not adequately address or even further perpetuate existing inequalities. Despite significant progress recently, the availability of gender industrial statistics and sex-disaggregated industrial data remains limited.
8. UNIDO has developed the Enhancing the Quality of Industrial Policies (EQuIP) toolbox to help policymakers in developing countries formulate evidence-based strategies for inclusive and sustainable industrialization.³ The EQuIP toolbox also contains a module on gender equality in manufacturing which provides a good starting point for analysing the areas where the provision on gender data could be improved. The tool contains an analytical framework for measuring gender equality in manufacturing. It highlights topics and indicators that allow the analyst to:

¹ UNIDO (2019). Inclusive and Sustainable Industrial Development: The Gender Dimension. Available at https://www.unido.org/sites/default/files/files/2019-03/UNIDO_ISID_The_Gender_Dimension.pdf (accessed 20 April 2023).

² IMF Staff Discussion Notes No. 18/07 (2018). Gender, Technology, and the Future of Work. 2021. Available at: <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/10/09/Gender-Technology-and-the-Future-of-Work-46236> (Accessed 20 April 2023).

³ UNIDO (2015). Enhancing the Quality of Industrial Policies (EQuIP) Tool 10: Gender Equality in Manufacturing. Available at <https://www.equip-project.org/wp-content/uploads/2020/01/Gender-and-Manufacturing-Tool-10.pdf> (accessed 20 April 2023).

- i. Form a picture of the context in which gender equality is analysed.
 - ii. Understand the current state of gender equality in manufacturing.
 - iii. Analyse structural change and sub-sectors.
 - iv. Understand the key determinants of women's participation in manufacturing.
9. In its current format, the EQuIP framework identifies several areas where data could be collected to provide a fuller picture of women in industry. Indicators that help form a picture of the current state of female participation and the quality of participation in manufacturing include the following:
 - i. Industry (manufacturing) employment as share of total employment.
 - ii. Female participation in sub-sectors.
 - iii. Gender wage gaps.
 - iv. Differences in job type and quality.
10. Based on the areas analyzed by the EQuIP toolbox, we developed a conceptual framework to measure gender-relevant aspects of industrial development (Figure 1). The framework draws on the interactions between gender and industrial development identifying following aspects:
 - i. Preconditions - What are the preconditions for participation of women and men in inclusive and sustainable industrial development? Motivations, aspirations, resources and constraints.
 - ii. Outcomes - What are the outcomes reflecting the degree of participation and roles of women and men in inclusive and sustainable industrial development? Participation, industrial performance.
 - iii. Impacts - What impacts have the participation of women and men in inclusive and sustainable industrial development and what are the effects on industrial performance, employment, income, and empowerment? Labour, Income, wealth, empowerment, well-being.
 - iv. Policy - What are the policies and other governmental interventions that may influence gender equality? Industrial policy, other interventions.

Figure 1
Conceptual framework to measure gender-relevant aspects of industrial development (Source: UNIDO elaboration, adapted from UNCTAD⁴)



III. Data gaps and collection limitations

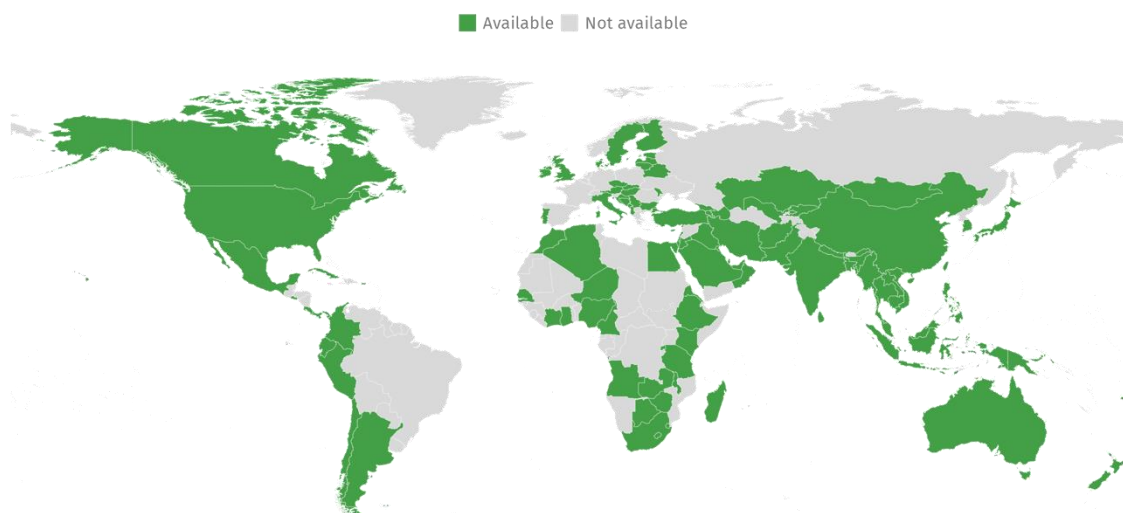
- The limited availability of gender-disaggregated data on labour participation and employment quality by manufacturing sector, business ownership by sector, technology adoption and asset ownership, has made it difficult to monitor how the pandemic affected women and men. At the country level, surveys are the most frequently used source of industrial data, followed by administrative sources and censuses. For most countries, the data supplier is the National Statistical Office (NSO). In a few cases, the data supplier is a government ministry. Most of the countries that provide information rely on a single data source. However, European Union (EU) member countries and other countries with a more developed statistical system tend to use a combination of sources, most often administrative sources, surveys and registers.
- Sex-disaggregated data on, for example, manufacturing employment as a share of total employment, could be useful in measuring the extent to which the manufacturing sector is providing employment opportunities for women. Understanding the female share in manufacturing employment, especially as it evolves over time, can help in monitoring whether industry, or any of its sub-sectors, is becoming more female-intensive over time. Combining the indicator with other data could help in analysing trends in a broader context, including its determinants and effects. Indicators on wage gaps, occupations and the quality

⁴ UNCTAD (2018). Better Data and Statistics for Gender responsive Trade Policy. Available at https://unctad.org/system/files/official-document/presspb2018d7_en.pdf (accessed 20 April 2023).

of employment are important for illustrating the possible gender inequalities that exist in industry.

13. A review of existing UNIDO statistical activities helped identify limitations that UNIDO is facing when attempting to collect sex-disaggregated industrial statistics from countries (see Graph 1 on data availability).

Graph 1: Data on number of female employees in manufacturing sector reported to UNIDO.



Source: UNIDO elaboration based on the INDSTAT 2, ISIC Revision 3 database

14. First, there are countries where gender data are not collected or made available as national authorities lack resources or capacity to collect such data and compile the required indicators, or they assign a lower priority to this area. NSOs can also have different approaches to data collection in terms of detail and scope. Even in a country where the availability of sex-disaggregated manufacturing data is good, UNIDO may have problems in increasing the level of detail if the country only collects data at an aggregated level. For instance, through its regular data collection process, UNIDO requests information from NSOs on value added, output, employment, wages at a great level of detail (2-, 3- and 4-digits of International Standard Industrial Classification of All Economic Activities (ISIC)). These data are only available from establishment surveys, which normally cover very limited information in terms of employment characteristics and wages, and sex-disaggregation is in many cases unavailable. In fact, most of the available employment data, including the majority of sex-disaggregated data, originate in labour force or household surveys, which do not provide the same level of sectorial detail. Given differences in the level of aggregation, statistical unit and scope, in general it is not possible to directly link these sources. Furthermore, there are countries facing significant challenges due to limited resources for data collection. Countries thus conduct an establishment census or survey only

sporadically, for instance every five years. This gap makes monitoring of gender-responsive policies problematic as there is no consistent gender statistics over time.

15. Second, countries collect data but they are not reported to UNIDO or other international agencies. It might be worth investigating why data is not reported in more detail. It could be that the data are collected, but for a specific reason, for example confidentiality, the NSO chooses not to report them. Especially, in industries where only a few businesses operate, confidentiality may become a limiting factor. It is also worth noting that where surveys are used, due to sampling, representativeness may suffer as granularity increases. It could also be possible that data are available according to different classifications or statistical methodologies, which may not be readily converted to the international statistical recommendation.
16. Third, communication channels between UNIDO and national authorities (NSOs, line ministries) on data exchange are improperly established. For example, industrial data might be collected but the information is scattered among different departments at the NSO. Due to this siloed style of producing statistics, the flow of information is hampered. The NSO might have also undergone organizational changes, disrupting communication with international organisations. Another issue could be insufficient coordination between different national data producers.
17. Given these constraints, sex-disaggregated industrial data remains relatively scarce. Moreover, given the contents of industrial or establishment surveys, as recommended by international guidelines, only information about participation in employment and remuneration can be collected through these instruments. Little gendered data on employment characteristics, job quality, productivity or other important factors are available specifically for industrial sectors. In addition, other areas included in Figure 1 have very limited data or remain very difficult to measure, including motivations, resources and constraints, participation in industrial activities beyond only employment and the impacts on empowerment or well-being.

IV. Future priorities on industrial gender statistics

18. Gender mainstreaming in industrial policies has received a growing interest, given the recognition that sectorial dynamics, shocks and policies have gendered impacts. Official statistics should reflect these developments and be enhanced in parallel. UNIDO as the United Nations (UN) agency with the international mandate to promote inclusive and sustainable industrial development has a unique comparative advantage in working closely with NSOs at the country and regional levels, through technical cooperation or capacity development initiatives, to gradually prioritise and improve the availability of gender statistics in industrial contexts.
19. UNIDO can advance its position in strengthening its role through improving its own data collecting procedures and introducing new tools for better monitoring of the gender aspects of industrialization.
 - i. Identifying industry-related, sex-disaggregated data available in other international organizations and establishing collaboration agreements to improve the availability of industrial gender statistics on a single platform.
 - ii. Improving interactions and data exchange with national data providers.
 - iii. Providing technical support and capacity building to national statistical systems on:

1. Collection, compilation and reporting, as well as methodological aspects and guidelines on industrial gender statistics.
 2. Analysing existing gender-sensitive data sources at different levels (employees, firm ownership and management, occupations, subsectors).
 3. Promoting source linking, through unique identifiers or probabilistic methods, to take advantage of information collected from different data sources (census, surveys, administrative data) that would provide a more complete picture of women's participation in industry.
 4. Pioneering work with countries to develop a set of key indicators of gender equality in industry, including concepts, methods, sources and guidelines.
- iv. Carrying out targeted ad-hoc surveys where national capacity does not allow data reporting.
 - v. Exploring alternative data sources, including administrative data, big data and citizen generated data, which could complement existing sources, especially if they provide information on hard-to-reach population groups or industries, or hard-to-measure concepts such as participation pre-conditions (motivations, aspirations, resources and constraints) that are not covered in traditional statistical work.
 - vi. Providing estimated gender/industry indicators using different methodologies (microdata linking, input-output tables, etc.)
 - vii. Once data collection processes are established, UNIDO may move to providing more in-depth analytical information on the relation of industrial development and gender equality, for example on human development, gender equality and industrial transformation, or the impact of changes in industrial production on female and male employment and wages.
20. These activities will contribute to more gender-responsive and inclusive industrial development, in alignment with the 2030 Agenda for Sustainable Development.

V. Conclusion

21. The paper discusses the importance of statistical evidence to ensure gender equality in achieving inclusive and sustainable industrial development. While industrialization can contribute to poverty reduction and increased competitiveness, it can also reinforce gender inequalities. Women are often excluded from secure and well-paid jobs in manufacturing industries and related service sectors. Therefore, it is crucial to ensure that industrial policy design and implementation considers the interests and needs of both women and men equally. Gender-responsive and inclusive industrial policies require reliable and timely gender data to monitor progress towards achieving the SDGs. The paper introduces a conceptual framework to measure gender-relevant aspects of industrial development by exploring the preconditions, outcomes, impacts, and policies that may influence gender equality in industrial development.
22. The lack of gender-disaggregated data on industrial statistics makes it difficult to monitor how women are involved in the process of industrialization. Surveys, administrative sources, and censuses are the most frequently used sources of industrial data, with the NSOs being the main data supplier in most countries. However, many countries lack the resources or capacity to collect sex-disaggregated data, assign a lower priority to this area, or have different approaches to data collection. Even in countries where data availability is good,

UNIDO may have problems in increasing the level of detail if the country only collects data at an aggregated level. Furthermore, communication channels between UNIDO and national authorities on data exchange are improperly established. Little gendered data on employment characteristics, job quality, productivity or other important factors are available specifically for industrial sub-sectors.
