



# Measuring the Gender Gap in Innovation



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# 1. Get the gender directly from the source

A direct way to obtain the gender breakdown for innovation data is to ask inventors directly about their gender. How can this be done?

- Survey the innovators, inventors, or creators about their gender
- Add a gender field for inventors in the IP application form

## Comments

The main advantages of sourcing the gender directly from the creators are accuracy and diversity. Self-declaration of gender is more accurate than any attribution technique, and it allows for more diverse gender categories. The main limitations to this approach are cost and past analysis. Surveying the entire inventor and creator population (or samples of these) can be done, but it is a costly task. And data cannot be gathered retroactively.

## 2. Attribute gender to innovation data

Secondary data or information can be used to attribute gender to innovator, inventor, or creator data. How can this be done?

- Rely on unique identifiers for individuals (such as social security numbers or national identity documents) then link to secondary sources containing detailed records of individuals including gender information.
- Attribute gender based on name titles or language naming customs. For example, patent data may contain inventor names with honorific titles – such as "Mrs.", "Ms.", or " Mr." in English – which can be easily mapped to a given gender. Similarly, the name structure in some languages correlates with gender.

### Comments

Typical examples of such sources are national records of individuals or employees. Yet, it is often difficult to obtain access to these records due to privacy concerns. Moreover, the innovation or IP data does not always contain the corresponding individual IDs. There are exceptions to the naming rules.

Titles such as "Prof." or "Dr." are gender-ambiguous, and many languages do not have clear gender patterns in their naming conventions.

# Attributing gender to innovation data

## Gender-name dictionary

A widespread attribution method is to make use of a list of names with their most commonly associated gender to create a “gender-name dictionary”. One of the main advantages of attributing gender through a gender-name dictionary is that it can be applied to several countries and retroactively.

As with the other indirect methods, the quality of the gender attribution depends heavily on the quality and coverage of the gender-name dictionary. In addition, migration and changing naming conventions can also affect the coverage of gender-name dictionaries.

Experts explored all of these methods meticulously. In sum, each approach has advantages and disadvantages, which makes them complementary rather than strict alternatives. The table below summarizes these approaches.

Method	Advantages	Disadvantages
Surveying innovators, inventors, and creators	<ul style="list-style-type: none"> <li>●●● Direct self-declaration</li> <li>●●● Gender diversity</li> </ul>	<ul style="list-style-type: none"> <li>●●● Not retroactive</li> <li>●●● Implementation time</li> <li>●●● Implementation cost</li> </ul>
Adding gender field in IP application form	<ul style="list-style-type: none"> <li>●●○ Indirect self-declaration</li> <li>●○○ Gender diversity</li> </ul>	<ul style="list-style-type: none"> <li>●●○ Not retroactive</li> <li>●●○ Implementation time</li> <li>●●○ Implementation cost</li> </ul>
Attribution based on national individuals' records	<ul style="list-style-type: none"> <li>●●○ Very reliable if based on unique identifiers</li> <li>●●○ Indirect self-declaration</li> <li>●○○ Can be applied retroactively</li> </ul>	<ul style="list-style-type: none"> <li>●●○ Depends on secondary source coverage</li> <li>●●○ Privacy rules prevent collecting unique identifiers</li> </ul>
Attribution based on name titles or language customs	<ul style="list-style-type: none"> <li>●●○ Can be applied retroactively</li> <li>●○○ Can be applied to several countries (sharing the same language)</li> </ul>	<ul style="list-style-type: none"> <li>●●○ Spread of naming conventions</li> <li>●●○ Not applicable to all languages</li> <li>●○○ Affected by migration and naming trends</li> </ul>
Attribution based on name-gender dictionary	<ul style="list-style-type: none"> <li>●●● Can be applied retroactively</li> <li>●●○ Can be applied to several countries</li> </ul>	<ul style="list-style-type: none"> <li>●○○ Depends on the dictionary coverage</li> <li>●○○ Affected by ambiguous naming conventions</li> </ul>

# Where can I get help measuring the gender IP gap?

It is important to consider the pros and cons of different approaches to measuring the participation of women in innovation.

- One challenge is to get global gender disaggregated data about participation in innovation activities. Several advanced economies have developed ways to measure gender in their innovation and IP data. How can we extend best practices to all countries?
- WIPO offers resources to assist IP offices and researchers worldwide. Check the dedicated [open repository](#) for these tools.
- One tool is the [World Gender-Name Dictionary \(WGND\)](#), compiling information from more than 40 various sources and covering almost 200 countries, nearly 100 languages, and more than 25 million name-country-gender combinations.
- WIPO encourages application by researchers of these tools and welcomes suggestions for improving them.



Click [here](#) for more information about measuring the gender gap in innovation.

Slides inspired by recent research by WIPO Economics Fellow Julio Raffo



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