

# Gender Gap in Industrial Designs of Central European and Baltic States

The Global Gender Gap in Innovation and Creativity

WIPO Development Studies



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*The Global Gender Gap in Innovation and Creativity Gender*

## SUMMARY

Over the past three decades, **the industrial design sector in Central European and Baltic States (CEBS) has experienced remarkable growth**, with design filings increasing significantly. This expansion reflects broader economic and technological advancements, with industrial design playing a key role in shaping the region's manufacturing and consumer industries.

A crucial aspect of this evolution is **the growing participation of women in industrial design**. Historically, women have made significant contributions to the field, yet they remain underrepresented. **While their presence has increased steadily, growing from 9.5% to 18% between 2013 and 2021, a substantial gender gap persists**, particularly in industries such as machinery, musical instruments, and arms manufacturing. In contrast, **women are more actively involved in design fields related to clothing, pharmaceuticals, and health products**.

**18%** *of designers in industrial designs from the CEBS region are women*

Notwithstanding progress, closing the gender gap remains a long-term challenge. **Projections suggest gender parity in industrial design could take 40 to 60 years**, depending on sustained efforts. Addressing industry-specific barriers and expanding inclusive policies will be essential for fostering a more diverse and innovative design landscape in the CEBS region.

Despite the challenges, the upward trend in women's participation is encouraging, reflecting broader societal shifts and increased recognition of diverse perspectives in design. **This report underscores the need for continued investment in gender inclusivity to fully unlock the region's creative potential and strengthen its position in global industrial design**.

# Gender Gap in Industrial Designs of Central European and Baltic States

*The Global Gender Gap in Innovation and Creativity Gender*

Over the last three decades, the **Central European and Baltic States (CEBS) region has experienced a spectacular increase in the filings of industrial designs worldwide**, growing more than ten-fold. Starting from a number of industrial designs filed annually below one thousand in the early 1990s, this figure has surged to over ten thousand in the more recent years. This significant growth highlights the CEBS region's burgeoning design creativity which makes it a prominent player on the global stage. The expansion in industrial designs is indicative of a robust economic and creative development, driving forward the region's industrial and technological advancement.

The role of women designers is becoming crucial to the CEBS region's emergence on the global industrial design arena. **The participation of women in industrial designs not only enriches the field with diverse perspective, but it also fosters creativity and innovation.** The region has a rich history of renowned industrial women designers, including figures such as Czech toymaker Libuše Niklová and Polish furniture designer and architect Teresa Kruszevska. The contemporary design scene led by women remains strong and internationally recognized featuring prominent designers like Ewa Bochen, Laima Jurča, Mare Kelpman, Lucie Koldova, Agnė Kuzmickaitė, Olja Luetić, Magdalena Mousson-Lestang, Draga Obradovic, Sandra Sándor, Katya Silchenko, Valentina Vidraşcu, and Zlata Zavašnik.

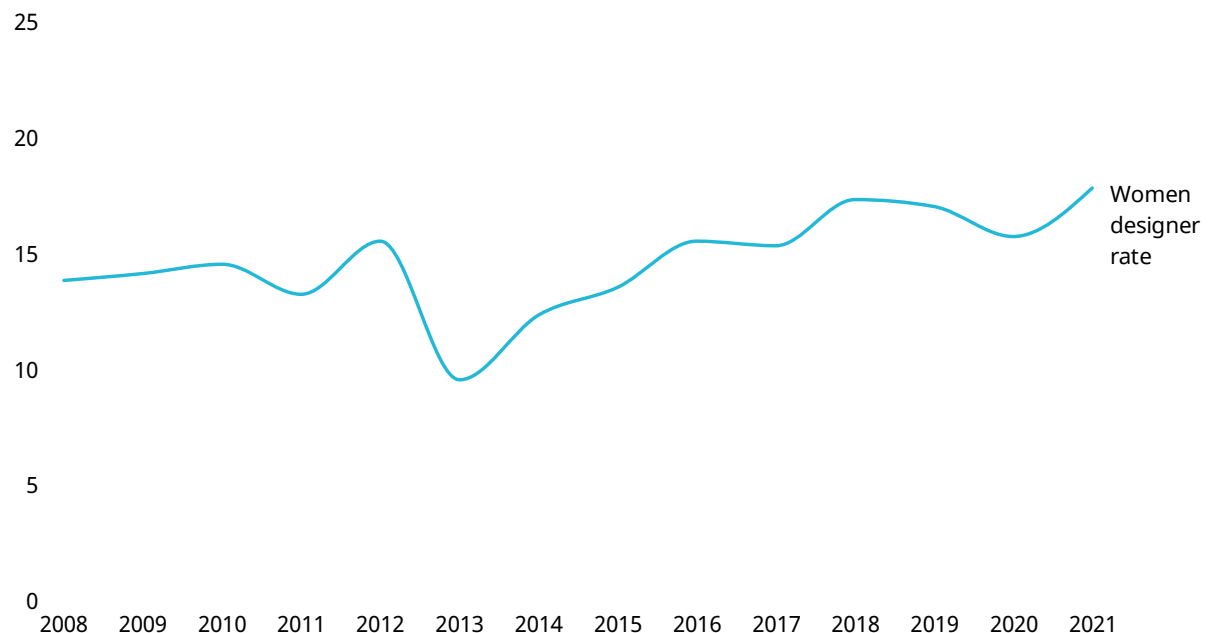
**Despite a long tradition of talented women designers in the region, and an increase in the rate of women designers over the past 10 years, the gender gap in industrial designs is yet to be closed.** The gap limits the potential pool of creative talents and hinders the development of inclusive designs that cater to all segments of society. Addressing this gender disparity is essential for the CEBS region to fully capitalize on its creative potential and promote a more equitable and dynamic design industry. By continuing to break down barriers and championing diversity, the CEBS region can lead the way in innovative and inclusive design.

## DESIGN BOOM AND GENDER EVOLUTION IN THE CEBS REGION

Over the last thirteen years, the CEBS region has experienced a steady increase in the representation of women designers. From 9.5% in 2013, **the participation of women in industrial design doubled, reaching 18% in 2021** (Figure 1). This marks a full recovery from the drop witnessed during the COVID pandemic when, after a period of sustained growth, the rate hit 15.7%.

### A decade of CEBS women designers' participation increase

Figure 1 - Women designers rate in CEBS region, 2008-2021



This trend indicates **a positive shift towards greater gender equality in industrial design**. The increasing presence of women designers not only enriches the design landscape with diverse perspectives but also reflects broader societal changes towards gender equality in professional domains. Efforts to support and promote women in this field appear to yield results, fostering a more inclusive and diverse design community.



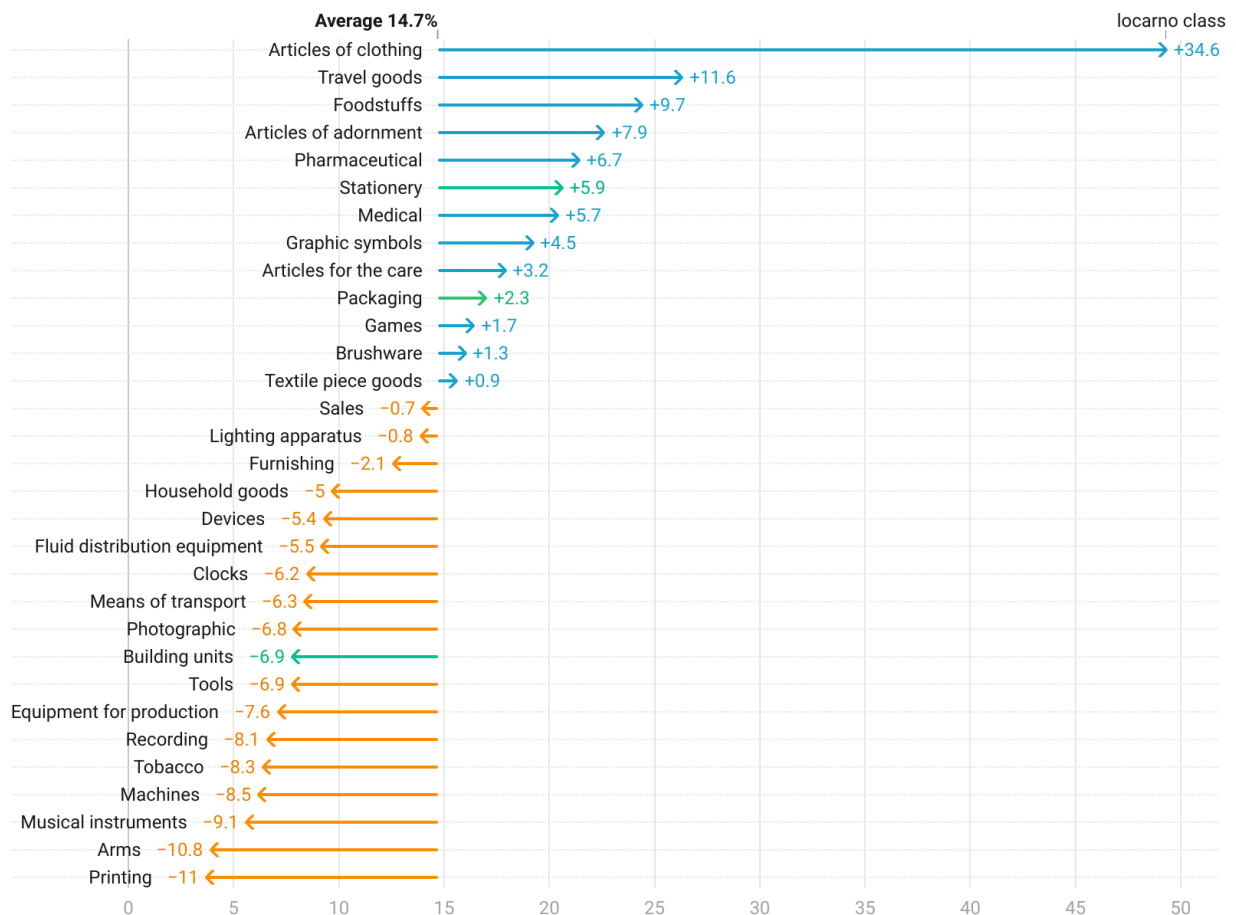
## WOMEN DESIGNERS PARTICIPATION VARIES ACROSS INDUSTRIES

Between 2008 and 2021, the participation rate of women in the CEBS region was approximately 15%. Compared to the region average, **women are proportionally more present in designs related to clothing industries, which almost reach gender parity with a participation rate of 49%** (Figure 2).

In addition, women exhibit substantial representation in health-related classes, including *travel goods* (26%), *foodstuffs* (24%), and *articles of adornment* (23%). Other well performing industries include *pharmaceutical* (21%), *medical* (20%), *stationery* (21%), *graphic symbols* (19%) and *articles for the care* (18%).

### Health and Textile designs display higher participation of women

Figure 2 - Women designers rate in CEBS region by Locarno class, 2008 - 2021



Stationery, Packaging and Building units are the three Locarno classes where the CEBS region overall designs the most.

Conversely, women are almost not present in industries such as *tobacco* (6%), *machines* (6%), *musical instruments* (6%) *arms* (4%), and *printing* (4%).

## WOMEN PARTICIPATION VARIES ACROSS THE REGION

Women participation varies across the CEBS region (Figure 3).

Notwithstanding, **Lithuania (31%) and Latvia (28%) more than double the region's average (14.7%)** followed by Georgia (20%), Romania (19%), Croatia (19%), and Estonia (17%).

At the same time, these countries have been actively tackling the gender gap through initiatives that target women entrepreneurs, enhancing their digital skills and fostering innovation. Lithuania, Latvia and Romania participate in the *Women4IT* initiative, which aims to boost women's employability in the ICT sector.<sup>1</sup> In 2017, Lithuania launched the *Women Go Tech* program providing mentorship, networking opportunities, and training with a special focus on industrial design.<sup>2</sup> This program has since expanded to include a broader regional focus, particularly on Ukraine, Poland, and the Baltic states. Similar initiatives have emerged throughout the region, including *Girls STEM Initiative* in Ukraine, *Riga Tech Girls* in Latvia, *Women Entrepreneur program* in Romania, *Women in Tech Slovakia*, *Technovation Girls* in Georgia, *Women in Tech Croatia*, and *Izbor Inženirka Leta* program in Slovenia.<sup>3</sup> Additionally, since the mid-2010s, the European Bank for Reconstruction and Development introduced its *Women in Business* program, further supporting female entrepreneurship in the area.<sup>4</sup> These initiatives and support measures, which often involve collaborations between countries, are instrumental in increasing the representation of women designers in the region and advancing gender equality.

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<sup>1</sup> Women4IT: <https://women4it.eu/>

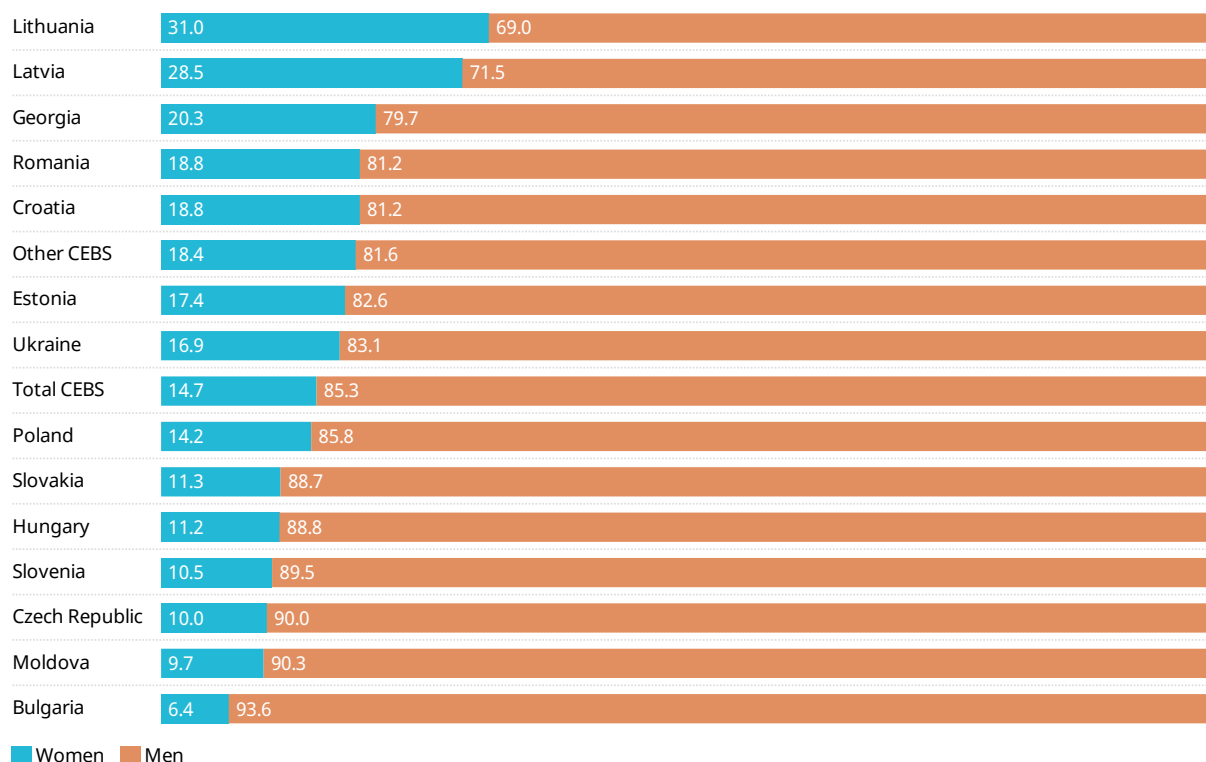
<sup>2</sup> Women Go Tech: <https://www.womengotech.com/>

<sup>3</sup> Girls STEM Initiative: <https://divchata-stem.org/>; Riga Tech Girls: <https://rigatechgirls.com/>; Women Entrepreneur Program: <https://imm-cluj.ro/services/femeia-manager-2022/>; Women in Tech Slovakia: <https://slovakwomenintech.aityvit.sk/en/home/>; Women in Tech Croatia: <https://www.wit-croatia.org/>; Technovation Girls: <https://technovationchallenge.org/>; Izbor Inženirka Leta <https://inzenirka-leta.si/>;

<sup>4</sup> Women in Business: <https://ebrdwomeninbusiness.com/>

## Lithuania and Latvia show the example in women designer participation

Figure 3 - Women and Male designers rate by CEBS country, 2008-2021



While the participation rate of the economies previously mentioned is above the region average, the CEBS countries that contribute to the largest absolute numbers of women designer are **Ukraine (9,478 women designers listed in 2008-2021), Poland (3,990), and Czech Republic (1,294)**

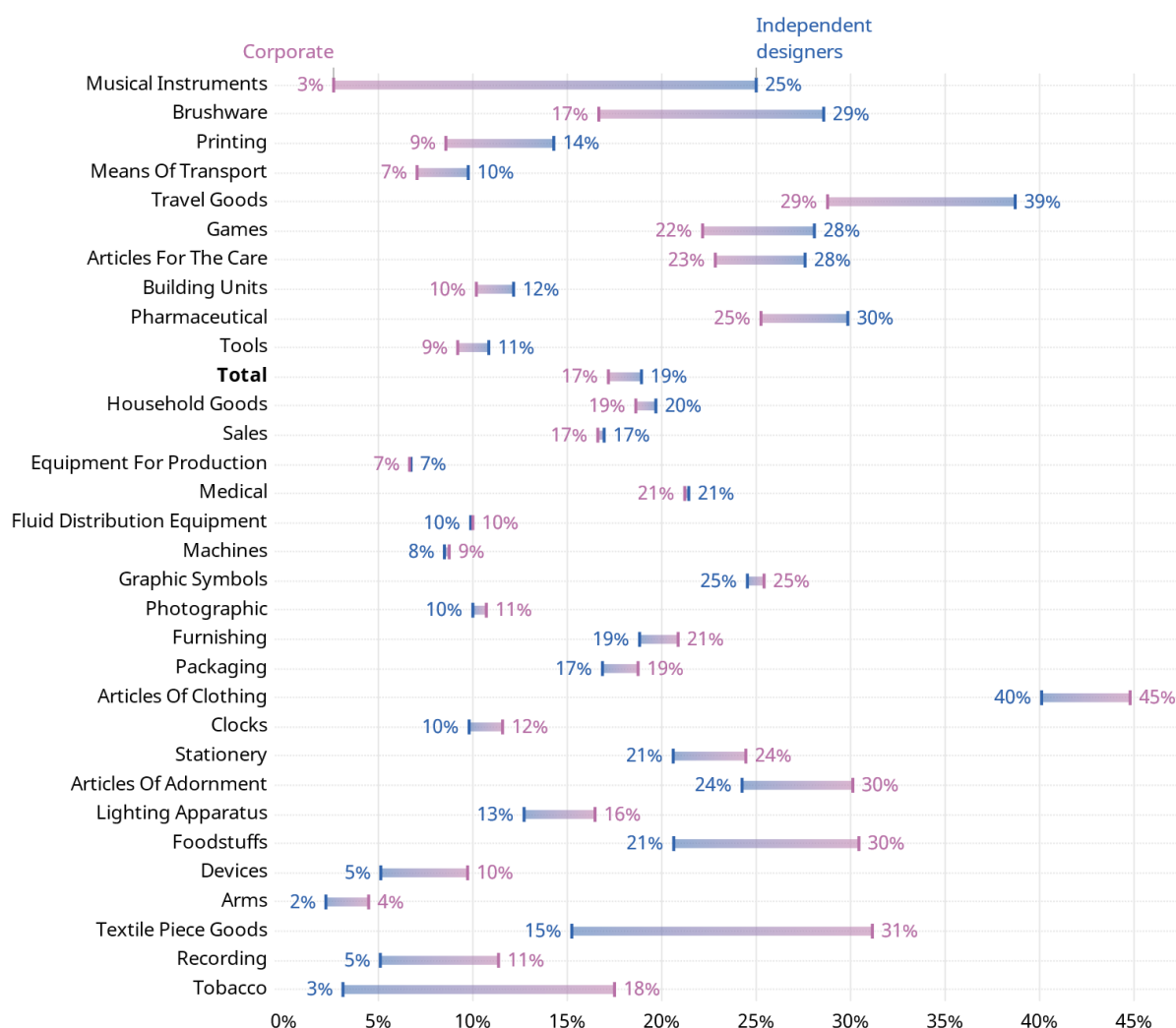


## WOMEN PARTICIPATION BY APPLICANT SIZE

As Figure 4 shows, although the rates are very close, **in the CEBS regions women are more present as applicants when they are independent designers (19%) rather than corporate entities (17%)**. The largest shares of women independent designers are found in *clothing* (40%) *travel goods* (39%) and *pharmaceuticals* (30%). The industries where women are more present as corporate applicants are *clothing* (45%), *textile* (31%) and *travel goods* (29%).

### Women's participation depends on the type of applicant and industry

Figure 4 - Women Designer rate by type of applicant and Locarno class, 2008-2021



Notes: Corporate = none of the applicants is a designer; independent designer = all applicants are designers

Musical instruments, textiles and tobacco are the industries where the difference between the participation of women as independent designers and corporate are the largest, above 15 percentage points. This suggests that the industries where women are more prolific as applicants, are those where women are the least represented overall. For example, the participation rate of women in musical instrument design is 6% but at the same time 25% of independent designers are women, while the percentage drops to only 3 percent for corporate applicants. This suggests that the barriers that hinder women's participation as designers could be the same that affect their employment in firms involved in industrial design.

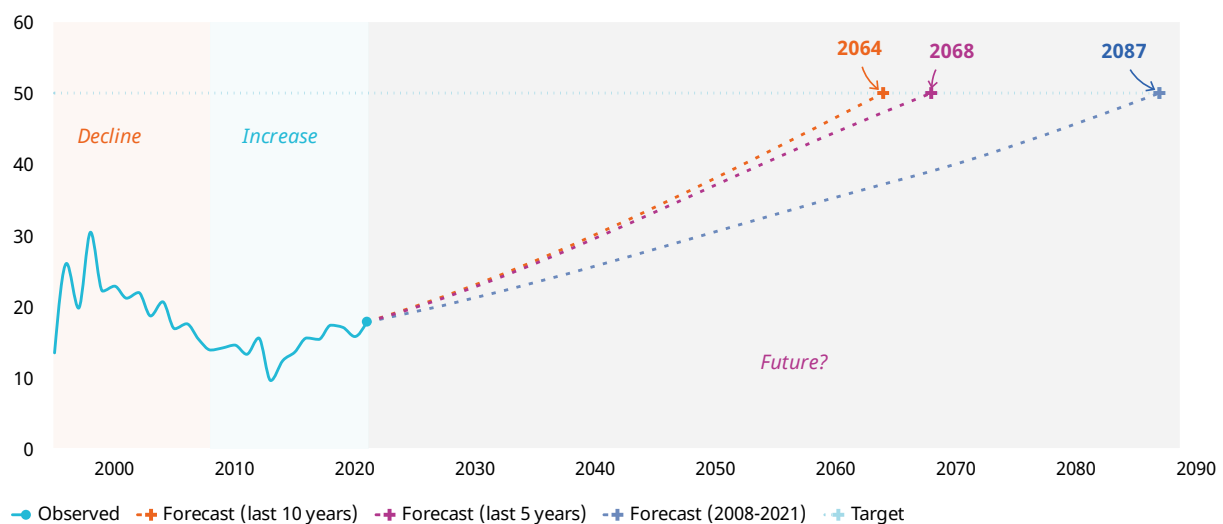
## PAST AND FUTURE OF CEBS WOMEN DESIGN PARTICIPATION

While the CEBS region has experienced a boom in industrial design over the past three decades, the participation of women designers has not followed at the same pace. **Despite an increase in the absolute number of women designers, their participation rates have not caught up with those of men** (Figure 5).

**Between the mid-1990s and mid-2010s, the gender gap in industrial design steadily widened** as the overall growth of this sector did not manage to remove the barriers hindering women's entry and advancement. Nonetheless, **since the mid-2010s, the CEBS region has seen a steady increase in the rate of women designers**, which suggests a positive shift towards greater gender equality in industrial design.

### Can past and recent trends predict the future of design gender gap in CEBS?

Figure 5 - Women designers rate in CEBS, observed and forecast, 1995-2021



What do past and recent trends tell us about the future of gender gaps in designs in CEBS countries? Forecasts show an optimistic picture. Projections based on data from the past five years indicate that the **CEBS region may reach parity in industrial designs in 40 years**. However, when extending the time frame to include data from 2008, the forecasts predict that it will take an additional 20 years.

## CONCLUSIONS

The gender gap in industrial design in the Central European and Baltic States (CEBS) region has undergone significant changes over the past three decades. While the overall number of industrial designs has surged dramatically, the participation of women has not kept pace. However, **latest trends show encouraging signs, with a steady increase in proportion of women designers** over the last thirteen years. Although disparities persist across industries and countries within the region, this progress represents a promising shift towards gender equality.

Looking ahead, **the future of gender parity in industrial design within the CEBS region presents an optimistic picture**. While past trends show a slow progression towards closing the gender gap, more recent years are characterized by an acceleration in the rate of women's participation. With the current trend, the region could achieve gender parity in industrial design within the next few decades. Achieving true gender equality will not only enhance the richness and diversity of the design sector but will also contribute to the overall economic and creative vitality of the CEBS region. Sustaining this momentum will require constant efforts to dismantle barriers and promote inclusivity.

Three key takeaways from the CEBS region's experience with the gender gap in industrial design are:

**1. Recent Progress Towards Gender Equality:** The rate of participation of women designers has notably increased over the past thirteen years. This progress underscores the effectiveness of targeted initiatives and policies aimed at supporting women in the field, indicating that continued efforts could further narrow the gender gap.

**2. Industry-Specific Participation:** Women's participation in industrial design varies significantly across industries. Higher representation in clothing and health products contrasts with lower participation in machinery and tobacco. This calls for interventions to address industry-specific barriers and encourage more women to move towards underrepresented sectors.

**3. Regional Disparities and Contributions:** Women's rates of participation in industrial design vary across the CEBS region. While Lithuania and Latvia boast high rates of women designers, other countries such as Ukraine and Poland, contribute more to increasing the absolute numbers of women designers. Understanding regional disparities is key to develop strategies tailored to local contexts, expand successful policy experiences, and ensure that efforts to promote gender equality are homogeneously effective and inclusive across the entire CEBS region.

## FURTHER READINGS

WIPO Innovation and Gender: <https://www.wipo.int/en/web/economics/innovation-gender-gap>

Carpentier, E., Brant, J., Bahl, U., and Kanellia, A. (2024). *Closing Innovation and Intellectual Property Diversity Gaps: A Global Literature Review*. World Intellectual Property Organization (WIPO) Economic Research Working Paper Series, (86). <https://www.wipo.int/publications/en/details.jsp?id=4743&plang=EN>

Carpentier, E and Raffo, J. (2023). *The Global Gender Gap in Innovation and Creativity: An International Comparison of the Gender Gap in Global Patenting over Two Decades*. World Intellectual Property Organization (WIPO) Economic Research Development Study. <https://www.wipo.int/publications/en/details.jsp?id=4653>

WIPO (2022). *Guidelines for producing gender analysis from innovation and IP data*. <https://doi.org/10.34667/tind.45020>

European Union Intellectual Property Office (2023) Women in design

## STATISTICAL ANNEX

### DATA COVERAGE

The previous analysis is based on 208,860 industrial designs filed worldwide from 1995 to 2021 by holders that are resident in the CEBS region. The data was sourced from WIPO's Global Designs Database and, whenever available, complemented by national data provided by IP offices from the CEBS region.

### Gender attribution is high, despite incomplete designer info

Figure A.1 - Coverage of industrial designs data by CEBS region holders, 1995-2021

| Holder country | Designs | % with Designer info | % with Designer gender |
|----------------|---------|----------------------|------------------------|
| Ukraine        | 77,024  | 100                  | 91                     |
| Poland         | 58,685  | 42                   | 96                     |
| Bulgaria       | 25,274  | 19                   | 87                     |
| Czech Republic | 14,773  | 62                   | 85                     |
| Moldova        | 9,507   | 92                   | 99                     |
| Romania        | 4,010   | 40                   | 95                     |
| Hungary        | 3,570   | 63                   | 96                     |
| Slovenia       | 3,248   | 69                   | 91                     |
| Slovakia       | 2,997   | 67                   | 95                     |
| Georgia        | 2,258   | 100                  | 91                     |
| Estonia        | 2,148   | 57                   | 92                     |
| Lithuania      | 1,416   | 57                   | 95                     |
| Latvia         | 1,327   | 69                   | 90                     |
| Croatia        | 1,135   | 66                   | 91                     |
| Other CEBS     | 1,488   | 82                   | 60                     |
| Total CEBS     | 208,860 | 67                   | 92                     |

Other CEBS: North Macedonia, Serbia, Albania, Bosnia and Herzegovina, Montenegro

Only 67% of the 208,860 industrial designs have information about the designers (see Figure A1). The distribution of industrial designs with designer information is not equal across each CEBS country, ranging from only 19% for Bulgarian holders to virtually 100% in Georgia and Ukraine. No rescaling of results was applied in this report.

Nevertheless, 92% of the region's industrial designs with designer information were found with a sex breakdown attributed. This proportion is relatively high across the larger countries in the region, ranging from 85% in Czech Republic to 99% in Moldova.



The other CEBS economies altogether have only 60% of industrial designs with designer information with a sex breakdown attributed.

## FORECASTS

We compute the forecasts, using the compounded average growth rate (CAGR) of designers over three reference periods (2011 to 2021, 2013 to 2021 and 2016 to 2021), as follows:

$$Rate_y = \left[ 1 + \left( \frac{M_{2021}}{F_{2021}} \times CAGR_p^{(y-2021)} \right) \right]^{-1}$$

$Rate_y$  corresponds to the forecasted rate for the year  $y$  and it ranges from the base year (2021) until the year when parity is reached.  $M_{2021}$  and  $F_{2021}$  are the number of men designers and female designers in 2021.  $CAGR_p$  is the compounded growth rate for the reference period  $p$ , and it is calculated as:

$$CAGR_p = \frac{1 + Mrate_p}{1 + Frate_p}$$

$Mrate_p$  and  $Frate_p$  correspond to the growth rates of men and women designers in each reference period  $p$ :

$$Mrate_p = \left[ \left( \frac{M_{2021}}{M_t} \right)^{\frac{1}{2021-t}} - 1 \right] \times 100$$

$$Frate_p = \left[ \left( \frac{F_{2021}}{F_t} \right)^{\frac{1}{2021-t}} - 1 \right] \times 100$$

Where  $t$  corresponds to the start year of each period (namely,  $t = 2011, 2013$  and  $2016$ ).