

CG closinggap

Opportunity cost of the gender gap in innovative entrepreneurship

EXECUTIVE SUMMARY

May 2024



This report, the **sixteenth** in a series of monographic studies, analyses and quantifies the **gender gap in innovative entrepreneurship**, with the aim of encouraging necessary debate in our society in order to learn from the evidence and implement measures to correct the inequalities that currently exist.

To this effect, the report is based on a definition of innovative entrepreneurship as the action of starting an independent business or project with a technological focus, whose aim is to validate a clearly innovative product, service or business model, and that has a great potential for growth.

Thus, innovative entrepreneurship is established as an essential pillar for both individual and collective development

and well-being. Through innovative entrepreneurship, people are not only searching for solutions to everyday problems, but also contributing to economic and social development, driving technological advances and improving quality of life.

Although there is no “unique recipe” for success in this field, a combination of technical knowledge, management skills and an open and adaptable mindset are required. Therefore, although traditionally not directly associated with specific fields of study, the interdisciplinary nature of innovative entrepreneurship requires continuous training and learning, covering everything from technical to business.

Causes of inequality between women and men in innovative entrepreneurship

No biological causes have been identified to explain the gender gaps that exist in innovative entrepreneurship. Instead, these gaps are the result of constructions, conventions or social practices that form part of the collective imagination and that are rooted throughout society. Thus, gender stereotypes and expectations that exist in society as a whole – both more or less organized or institutionalized – regarding the role that men and women have to play, are present and part of decision-making processes, with varying degrees of visibility or awareness.

The following are the fundamental causes of gender inequality that have been observed in innovative entrepreneurship:

- Under-representation of women across all educational stages.
- The low number of self-employed women, as well as their low likelihood to go into entrepreneurship.
- Greater under-representation of women among entrepreneurs in activities of technological intensity and as founders of *startups*.
- Inequality in the presence of role models from university faculties to business management.
- The lower volume of private financing for business ventures led by women, and the reduced access to public funding for this purpose.
- The rupture in personal, professional and family life caused by the lack of shared responsibility in the exercise of care.
- The lack of affirmative measures and actions to correct existing inequalities between women and men.

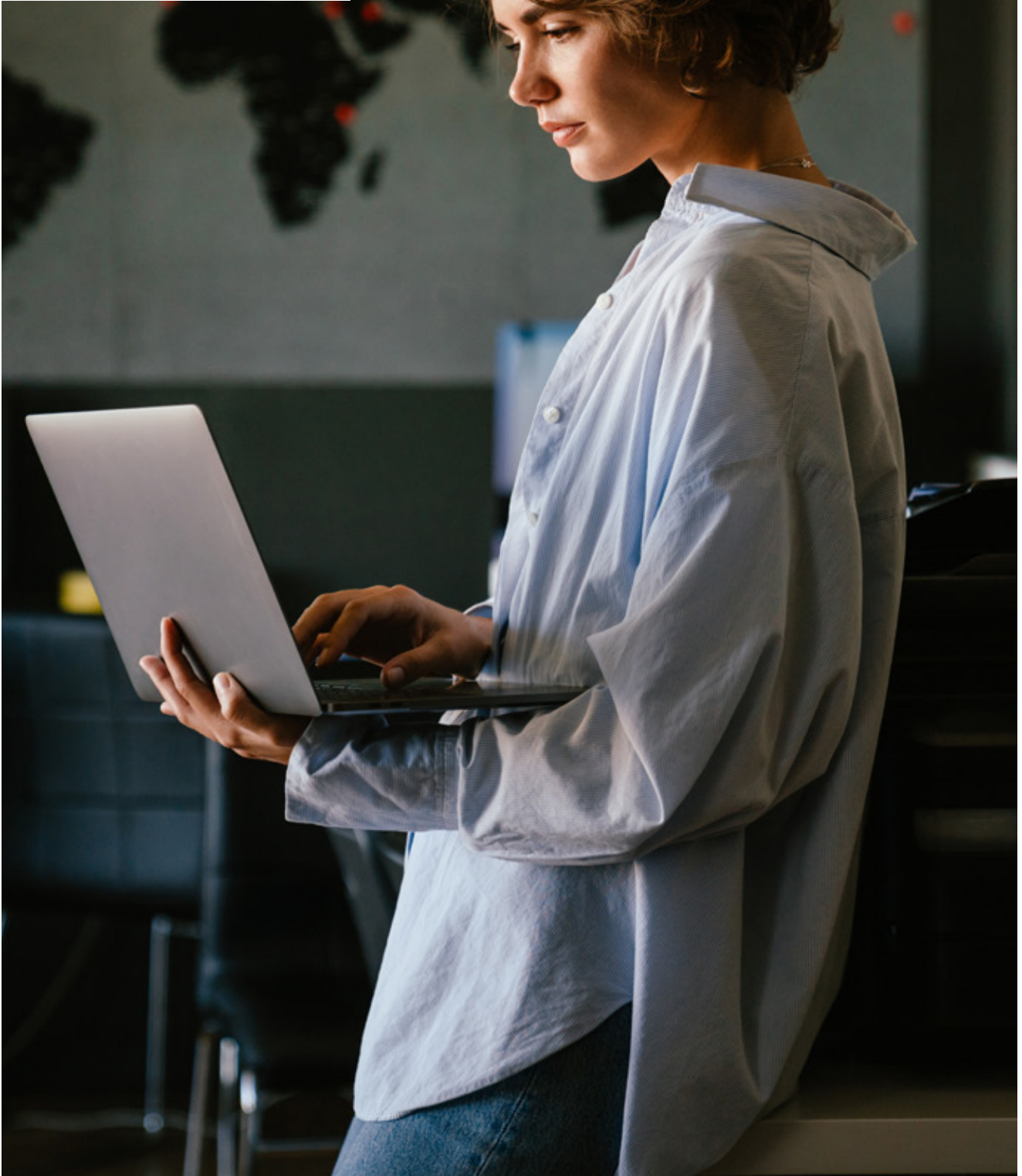


What added value does this study provide compared to other reports?

Numerous publications have explored the gender gap in entrepreneurship from general, digital, technological and innovative points of view. Although these works represent key bibliographic references and have provided crucial context for this research, this report takes a closer look at several key aspects:

1. It presents an analysis of both general and innovative entrepreneurship.
2. It considers the entire life cycle of innovative entrepreneurship starting with training. However, the most distinctive and revealing element of this report is the analysis of the opportunity cost that the gender gap involves for the economy.
3. It pays special attention to Professional Training, considering it as a fundamental knowledge base for entrepreneurs.
4. It brings together a collection of bibliographical sources that show self-perception of financial knowledge and the lack of role models.
5. It quantifies the opportunity cost of the gender gap in innovative entrepreneurship for the current economy.
6. It proposes hypothetical scenarios regarding the path to follow considering the gender gap in entrepreneurship.

In short, this report seeks to enrich existing literature on entrepreneurship and innovative entrepreneurship. Its multifaceted approach aims to serve as a valuable source of reference for research, education and policy drafting, promoting a positive change in the entrepreneurship ecosystem. The study also aims to promote women's participation in leadership positions within the entrepreneurial sector, highlighting and addressing the challenges they face.



Gap 1

Women do not study entrepreneurial disciplines with an innovative focus



Training and skills acquisition through education are key elements that determine entrepreneurial capability and success in entrepreneurship. In 2021, 2.8 million students enrolled in a variety of academic programs that included professional training, university degrees, master's degrees and doctoral degrees. Of this total, 52% were women, which shows a significant participation in classrooms.

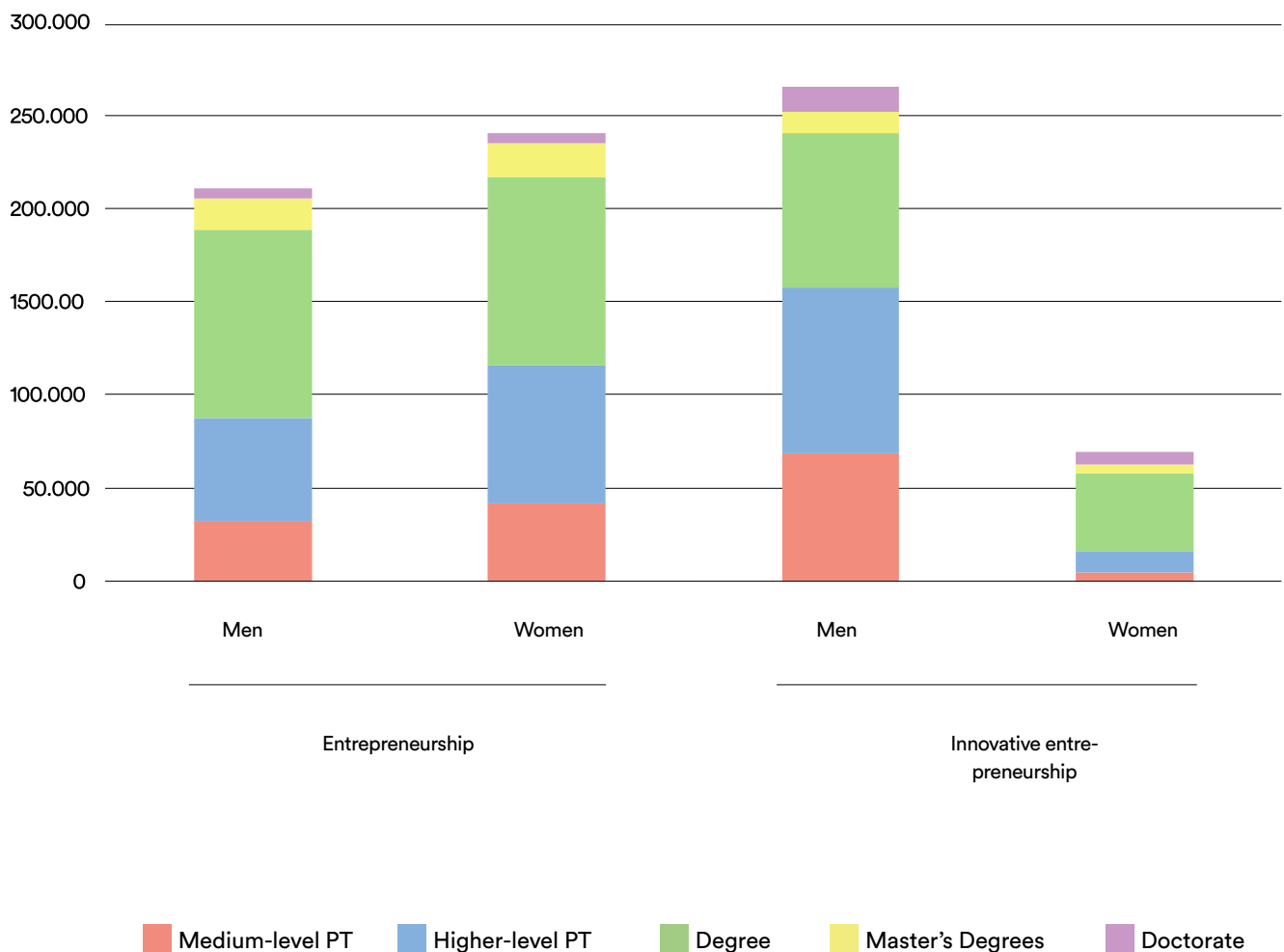
However, there are notable differences when it comes to type of discipline. **Although men and women show comparable interest in entrepreneurship, women tend to move away from fields with a strong entrepreneurial component that are deeply rooted in technology.** In this respect, although 53% of students enrolled in areas with an entrepreneurial focus¹ were women, this figure was only 21% in areas with a focus on innovative entrepreneurship².

1 Degrees aimed at entrepreneurship are considered to be those related to administration, management, finance, commercial activities, marketing, economics and other social sciences.

2 Degrees that promote innovative entrepreneurship are considered to be those linked to the development of software, applications, databases, networks, telecommunications, audiovisual, mathematics, biotechnology, and biomedicine, among others.

Figure 1. Students in university and professional training by type of qualification

(Number of enrolments), 2021-2022



Source: Afi, via the Ministry of Education and Professional Training and the Ministry of Universities.

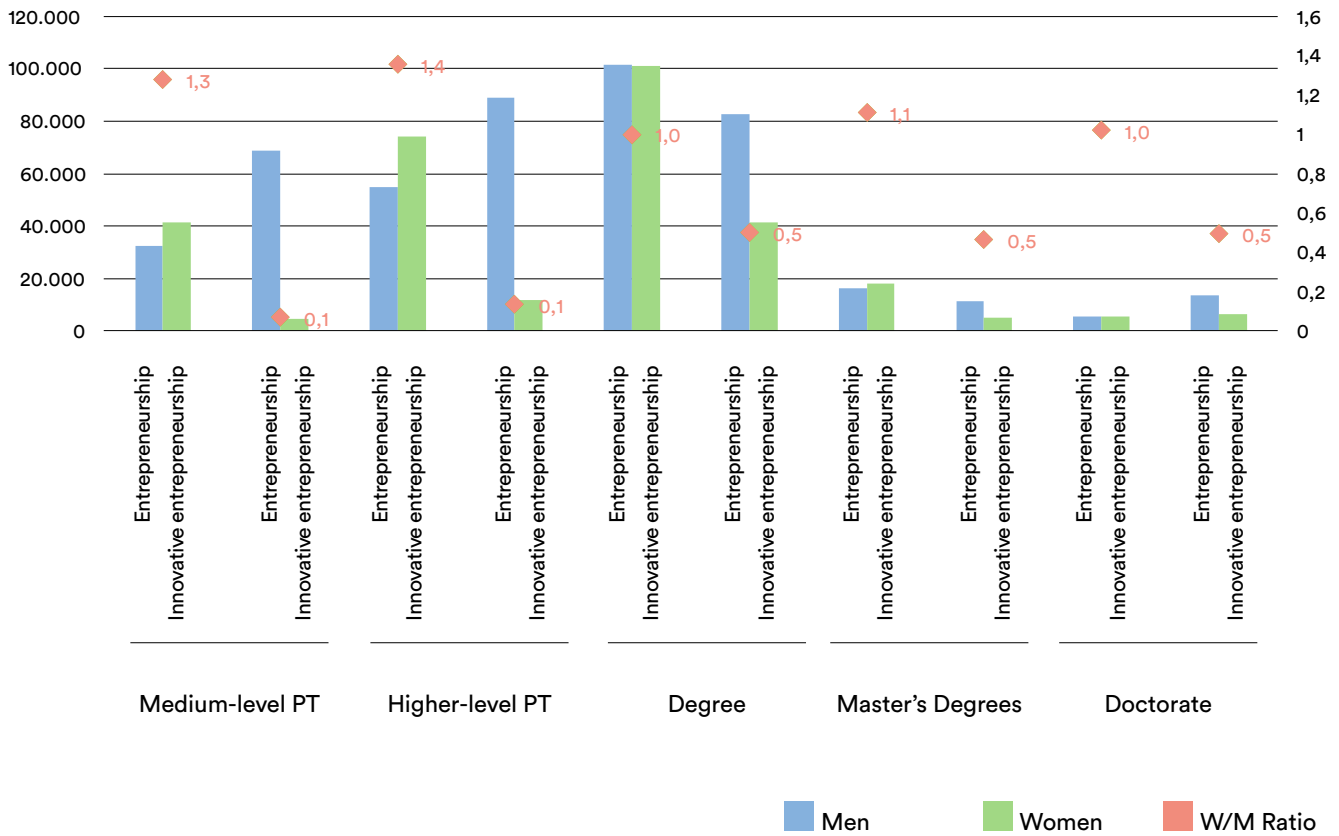
Gender inequality in studies related to innovative entrepreneurship is significant in professional training courses (PT): for every man studying a medium- and higher-level programme in disciplines related to innovative entrepreneurship, there are 0.1 women (6.2% in middle-level PT; 11.6% in higher-level PT), whereas the proportion of women in entrepreneurial disciplines is 56.0% in middle-level programmes and 57.5% in higher-level programmes.

In the university sector, **women's participation is more equitable compared to men in fields related to entrepreneurship**, representing 49.9% of university degree enrolments, 52.6% in master's degrees and 50.4% in doctoral degrees. However, in disciplines specifically aimed at **innovative entrepreneurship**, there is a marked difference, with **men doubling the female presence in the classroom**. For every man enrolled in these disciplines, there are approximately 0.5 women.



Figure 2. Students in professional training by type of qualification

(Left axis: number of enrolments; Right axis: W/M ratio), 2021-2022 academic year

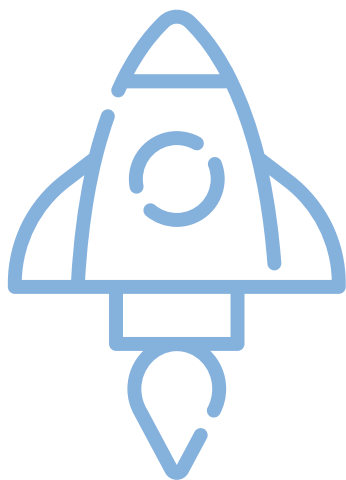


Source: Afi, via the Ministry of Education and Professional Training and the Ministry of Universities.



Gap 2

Women participate in entrepreneurial activities in lower numbers than men



Once people have entered the labour market, entrepreneurship³ can be analysed. Currently, **women's participation in entrepreneurial activity is considerably lower than men's**. In concrete terms, there are 1,150,000 self-employed women compared to 2,063,000 self-employed men, which indicates that **there are almost twice as many men as women working for themselves**.

The gender gap between self-employed professionals is significantly lower among young people under 35 years old, and in those with higher education, in particular university degrees. In fact, 41% of self-employed professionals under 35 years old, and

43% of self-employed professionals with university training, are women. These figures are higher than the general average for self-employed professionals (35.7% of all self-employed professionals are women).

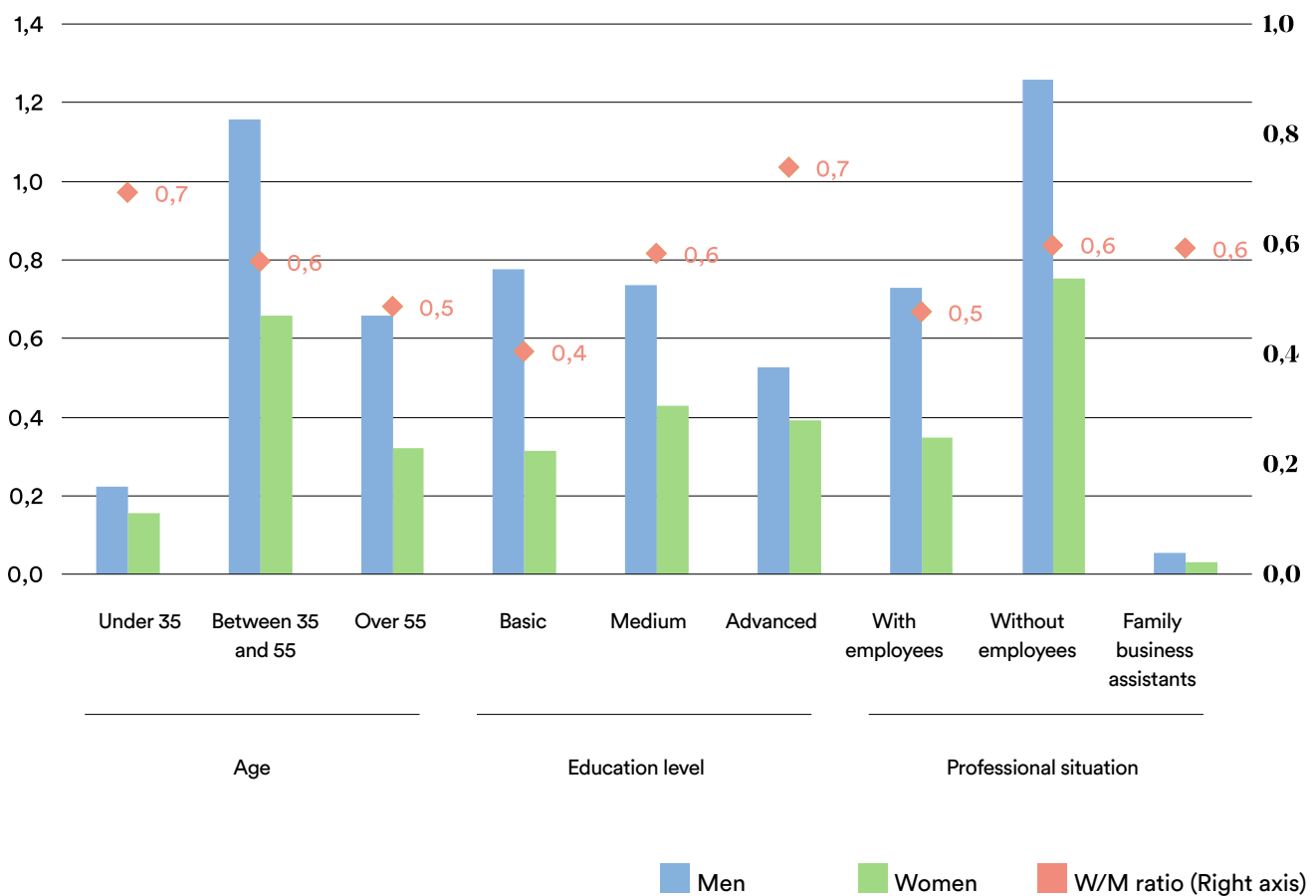
As for sector distribution, **women concentrate their entrepreneurial activity in areas such as services, education and healthcare**, representing 65% of self-employed professionals in these fields. On the other hand, **men have a dominant presence in sectors such as industry, transport and ICT related activities**, where they make up more than 80% of self-employed professionals.

3

Process of starting or developing a project or idea, aimed at creating social and economic value.

Figure 3. Socio-demographic characteristics of self-employed professionals in Spain

(millions and W/M ratio right axis), 2023



Source: Afi, from microdata from the Labour Force Survey (LFS).

It is also noted that **men are twice as likely as women to become entrepreneurs⁴** (0.66% compared to 0.38%). However, **this gender gap has fallen in the last decade**, from 0.41 percentage points (p.p.) difference observed in 2014 to **0.29 p.p. in 2023**.

It is important to note that **the gender gap in entrepreneurship exists in all groups**, regardless of their previous employment situation. Thus, whether coming from an employed position, unemployment or inactivity, women consistently go into entrepreneurship at lower rates than men. This **pattern reflects the additional barriers** faced by women, such as a lack of sharing care responsibilities, limited access to financial resources and support networks, and inadequate representation in sectors dominated by traditionally high rates of entrepreneurial activity.

⁴ The likelihood of entrepreneurship is defined as the likelihood of a transition in working situation from employment, unemployment or inactivity to self-employment.

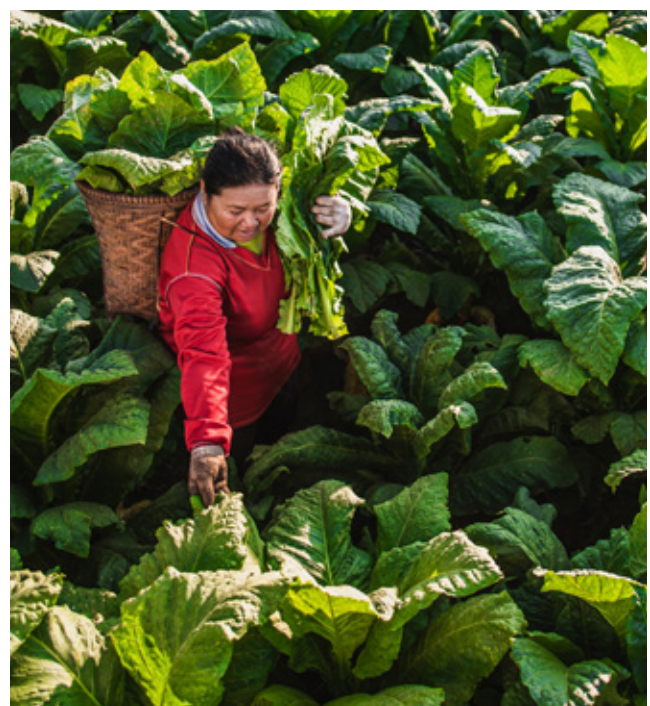
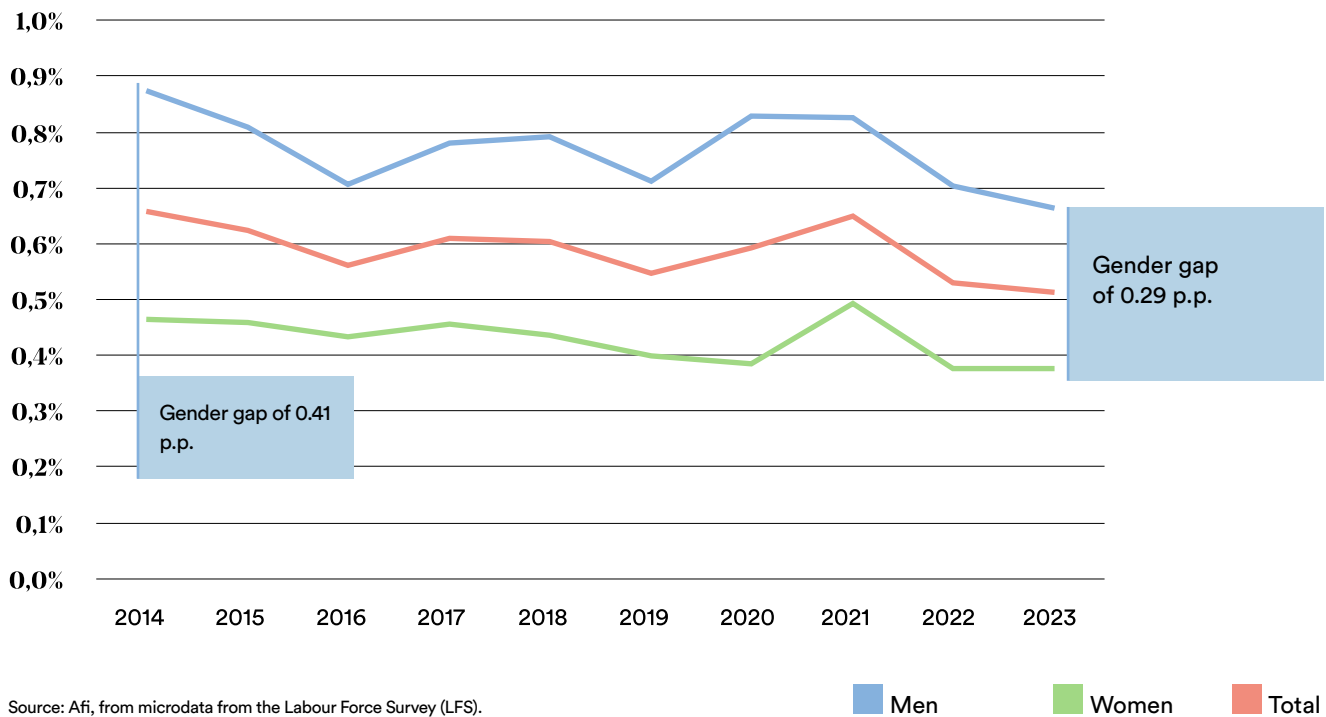


Figure 4. Evolution of the likelihood of entrepreneurship by gender



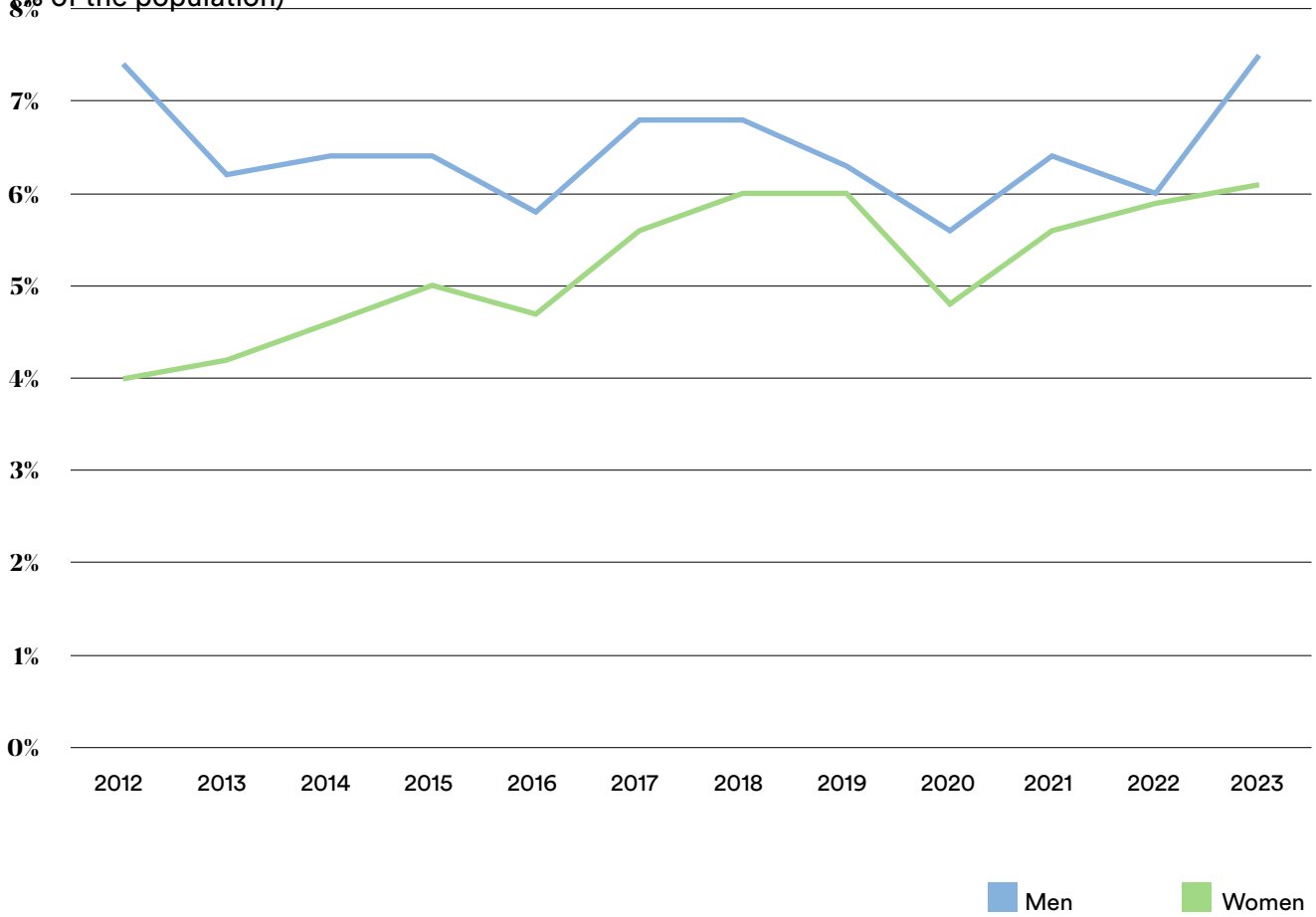
In 2023, 7.5% of Spanish men went into entrepreneurship (more than 1.1 million) compared to 6.1% of women (922,000). Both rates are much lower than the European Union average (10%). In this respect, promoting women's participation in the entrepreneurial ecosystem would not only generate new business models, but would also strengthen Spain's position within the European framework.

Among the main factors that limit the development of business initiatives is the perception of business opportunities. Only one-third of entrepreneurs clearly identify a business opportunity, with 32% of women and 35% of men sharing this vi-

sion. In addition, fear of failure emerges as a significant barrier to entrepreneurship for both women and men, affecting women at a slightly higher rate than men. Indeed, it is observed that 44% of women claim to be fearful of failure, compared to 42% of men. Implementing policies aimed at mitigating these concerns and promoting entrepreneurial activity could be key to increasing entrepreneurship rates, especially among women.

Figure 5. Evolution of the proportion of the population going into entrepreneurship in new initiatives by gender

(% of the population)



Source: Afi, from Global Entrepreneurship Monitor.



Gap 3

Women's participation is very modest in innovative professions in general and as entrepreneurs in particular



Innovation is the driving force behind economic development, competitiveness and the resolution of social problems. In this context, activities with a high technological intensity concern sectors and processes where innovation, whether in products, services or business models, occurs at a significantly higher rate and that generates a significant impact on other fields.

Economic sectors with high innovation intensity⁵ account for 8.0% of total employment in Spain, where **one in four employees are women**. This first conclusion sets the foundation for all the analyses carried out below, where women acquire a secondary role when compared with men's performance.

The gender gap in activities with high innovation intensity persists regardless of the type of employer: salaried or self-employed. However, given that the purpose of the study is to outline the profile of the entrepreneur in innovative sectors, it will study self-employed workers in greater detail. In this respect, **of the more than 99,000 self-employed professionals in activities with high innovation intensity, only 26% were women** (26,000 women compared to 73,000 men).

Of these self-employed professionals, both men and women, **70% are dedicated to services such as programming or telecommunications, sectors that have a wider gender gap than the industry in general**. Thus, in services of high technological intensity, the proportion of self-employed women is only 0.3 for every self-employed man, a figure that contrasts with that of the high-tech industry, with a ratio of 0.5 women for every man.

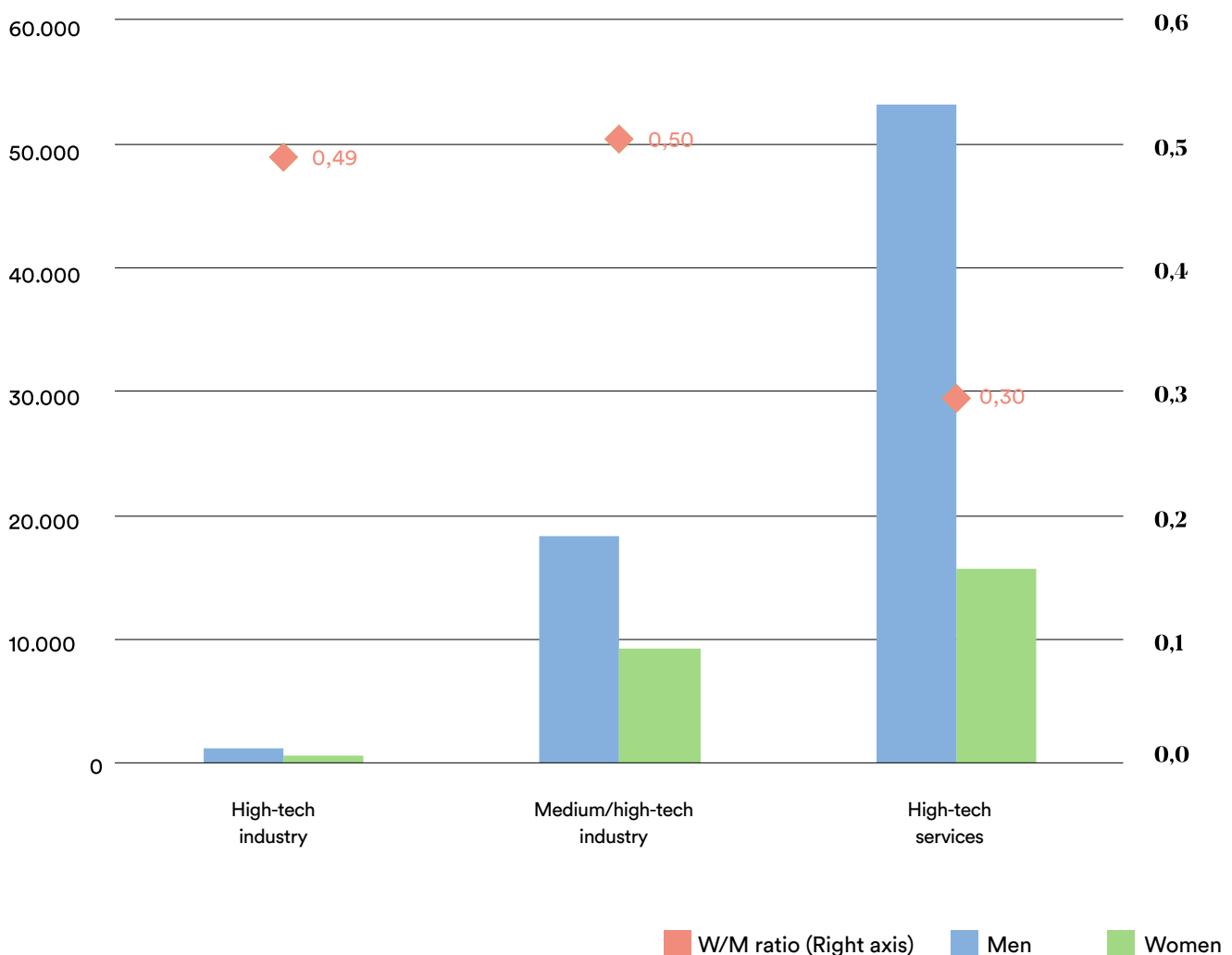


5

According to the criterion of the methodology proposed by the OECD and also endorsed by the INE.

Figure 6. Self-employed professionals in high-tech sectors by type of activity

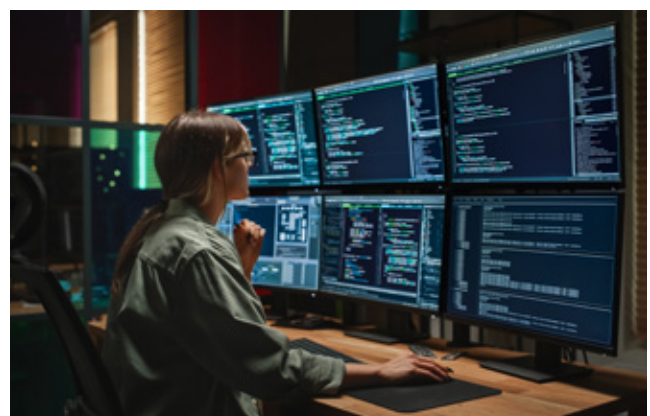
(number of workers; W/M ratio right axis), 2023



Source: Afi, from microdata from the Labour Force Survey (LFS).

The entrepreneurship ecosystem in Spain also includes *startups*⁶. In 2023, more than 9,200 *startup* founders were registered, of which 19.4% were women (approx. 1,500 female entrepreneurs versus 7,700 male entrepreneurs), according to statistical information published by El Referente. Thus, for each male *startup* founder, there were 0.2 women founders.

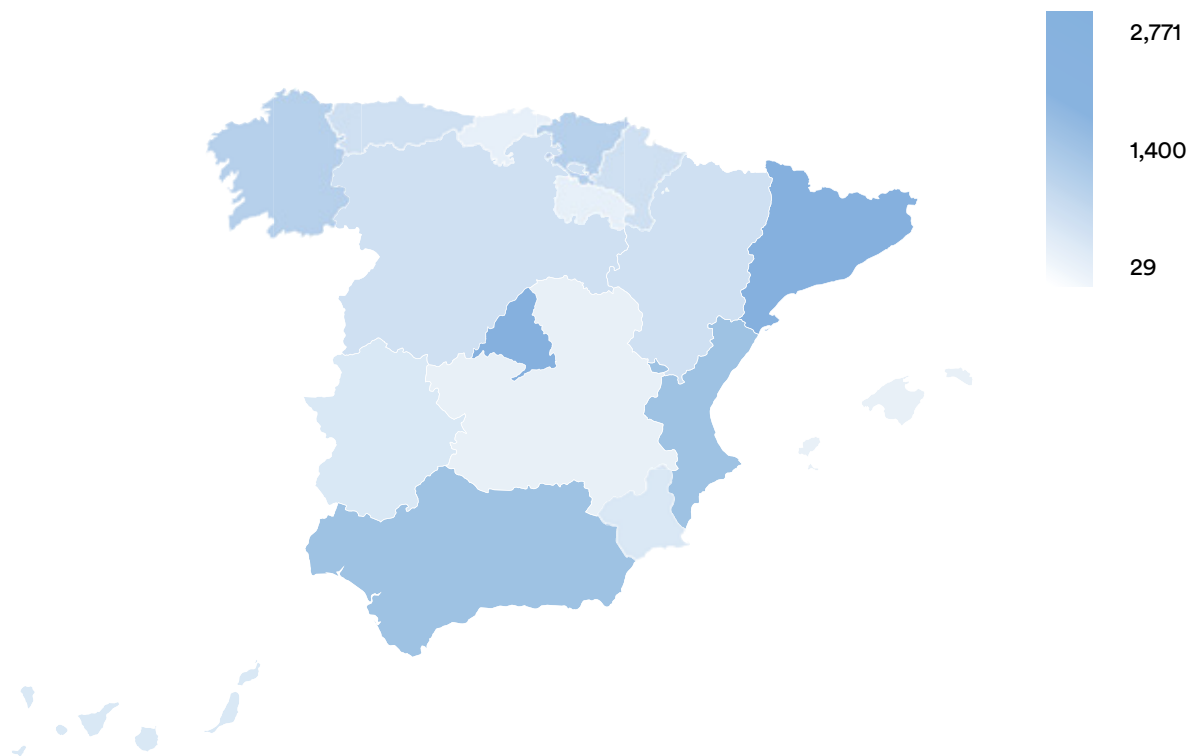
Most of these startups, specifically six out of ten, are concentrated in Madrid or Catalonia. In the Basque Country and Galicia, a greater presence of women entrepreneurs has been observed, with 18.8% and 17.9% of founders, respectively, in the *startup* sector. This varied regional landscape is due to factors such as local policies to promote entrepreneurship and greater accessibility to infrastructure, support networks and financing.



6 A *startup* is a newly created or early stage company that offers great growth possibilities and markets products and services through the use of information and communication technologies.

Figure 7. Founding population of *startups* in Spain

(number of workers) in 2023



Source: Afi, from El Referente.

Having observed this unequal distribution in the entrepreneurial landscape in terms of gender, it is crucial to analyse the impact of this disparity on the economy and society. To this end, **the opportunity cost of gender inequality in general and innovative entrepreneurship has been calculated.**

In short, the statistics mentioned in the report show that there are 1.1 million male entrepreneurs in Spain compared to 922,000 female entrepreneurs. This gender disparity translates directly into an economic loss. In concrete terms, **the Spanish economy is prevented from receiving more than 16.4 billion euros, which represents an opportunity cost of 1.34% of GDP (Gross Domestic Product) in 2023.**

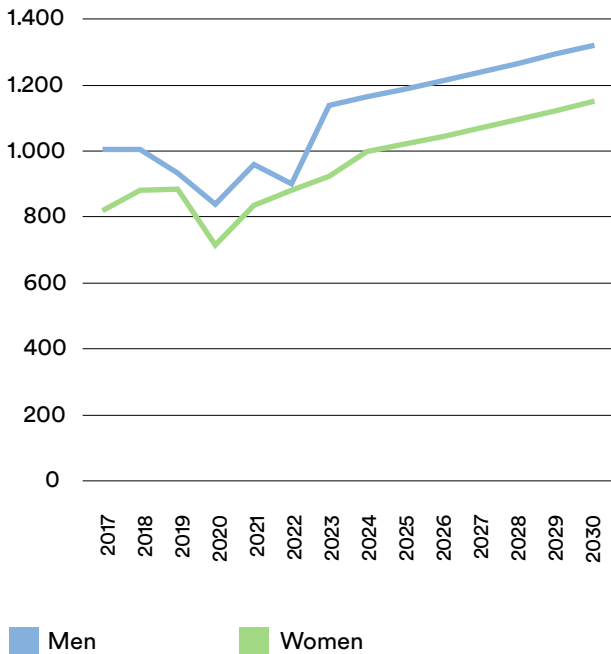
The **innovative entrepreneurial environment** also shows a higher gender gap, where for every man going into activities of high innovative intensity there are 0.36 women in the same situation (73,000 men and 26,000 women). This gender gap comes at cost to the economy, which amounts to **more than 5.3 billion euros, equivalent to 0.43% of Spain's GDP in 2023.**

It is also important to investigate what will happen to the gender gap in entrepreneurship and innovative entrepreneurship in the near future. In this regard, the following exercise is set out below. To start, the horizon has been set at 2030, a key date for achieving the Sustainable Development Goals (SDGs) and especially significant for the goal of achieving gender equality and empowering all women and girls (SDG 5).

According to the trends observed in the last seven years, and under the optimistic hypothesis of moving towards parity in the likelihood of entrepreneurship among men and women in the coming seven years, the number of male entrepreneurs is expected to reach 1,320,000, while the number of female entrepreneurs is estimated at 1,153,000. Therefore, although the gender gap in entrepreneurship is falling, moving from a ratio of 0.8 in 2023 to 0.9 women for every male entrepreneur in 2030, there is still a way to go to close it completely. However, this progress represents a significant step towards gender equality in entrepreneurship.

Figure 8. Expected evolution of the number of entrepreneurs by gender (thousands of people), 2017-2030.

Afi estimate 2024-2030.



Source: AFI, estimate based on LFS and GEM microdata.

In the field of innovative entrepreneurship, characterised by highly technological and innovative activities, the projection based on trends observed in the last seven years reveals a challenging landscape for gender equality. Even assuming that the likelihood of women working in these fields would be equal to men, the gender gap would be reduced less significantly than expected, with a ratio of 0.42 women for every man operating in these activities. Under this scenario, the number of women entrepreneurs would barely reach 39,000, while the number of men would exceed 93,000, showing a substantial difference.

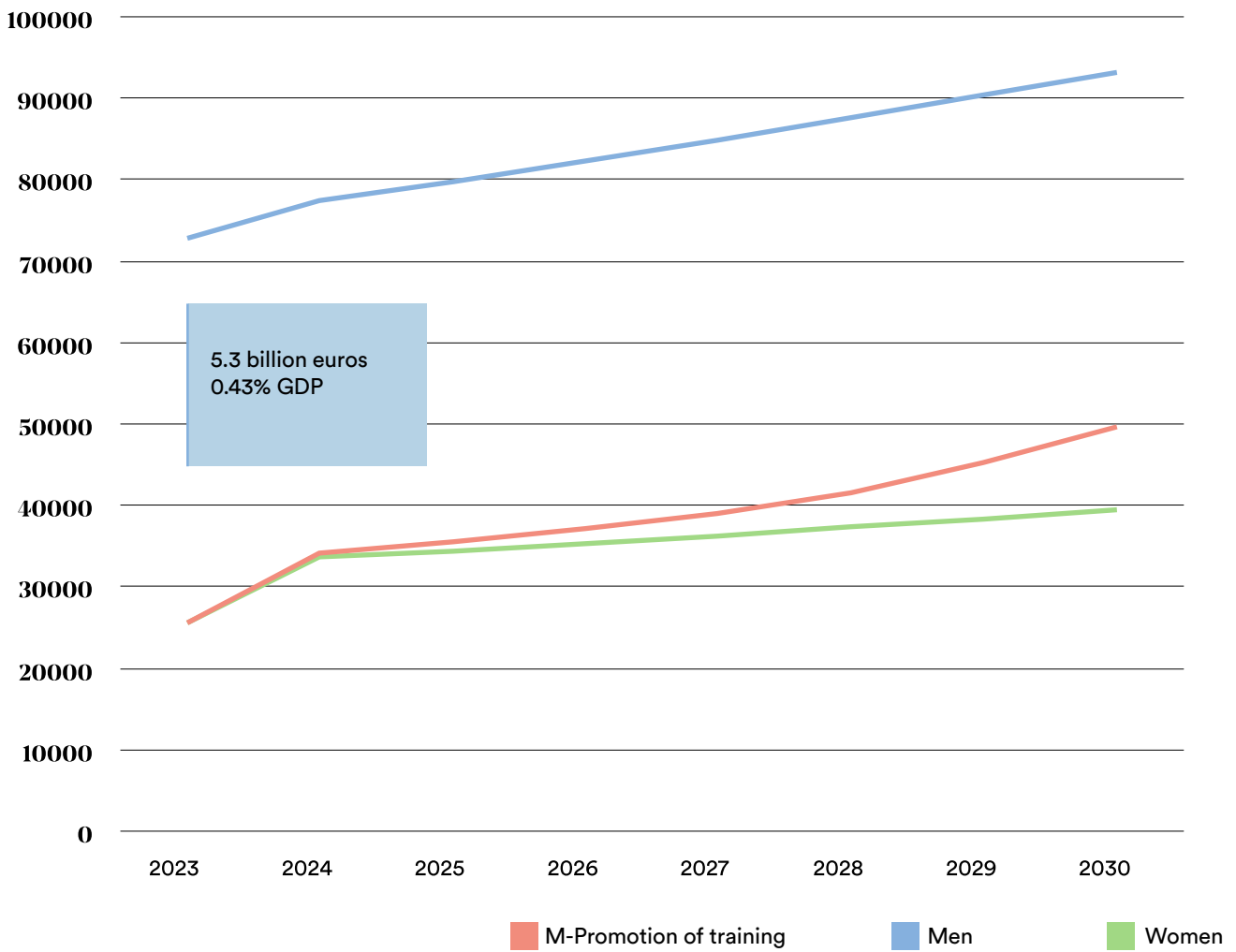
These findings highlight the need to implement specific strategies that not only promote entrepreneurship among women, but also address the specific barriers that limit their participation in innovative entrepreneurship. An example of this would be to encourage participation in training courses aimed at innovative entrepreneurship.

In this respect, if women were encouraged to choose studies related to innovative entrepreneurship until parity of male and female students was achieved, there would be more than 50,000 women entrepreneurs, which would represent 35% participation in this area in 2030, compared to 26% in 2023. It is thus noted that **even with equal starting conditions, the gender gap in innovative entrepreneurship will continue to persist.** To the extent that there are **external factors** that affect women's decisions and opportunities to go into entrepreneurship, such as **gender stereotypes and lack of access to funding or visible role models, the gap will not close.**



Figure 9. Expected evolution of the number of entrepreneurs in highly innovative activities by gender

(people), 2023-2030



Source: Afi, estimate based on microdata from LBS, GEM, Ministry of Education and the Ministry of Universities.
 Note: Afi estimate 2024-2030.



Gap 4

Women entrepreneurs risk more by not requesting or receiving the same amount of funding as men

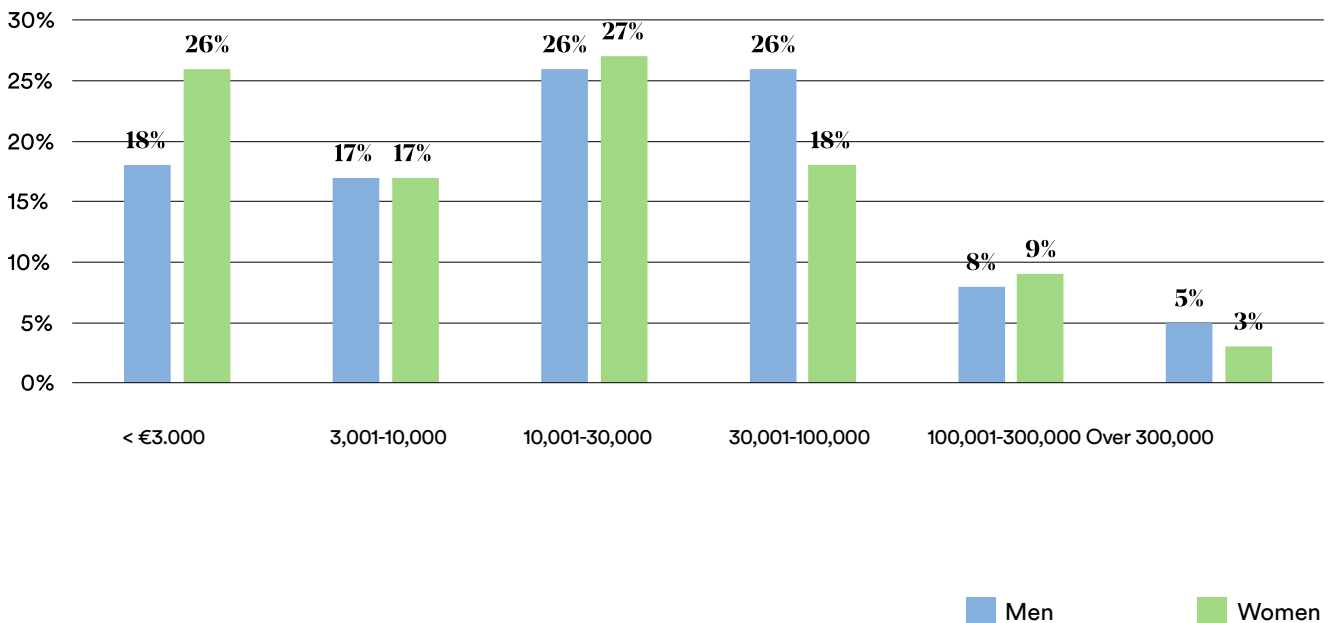


In 2023, only **7% of all European funding rounds were obtained by teams founded exclusively by women**. Similarly, only 18% of rounds were allocated to companies with at least one woman as founder or co-founder, which means that **75% of rounds were granted to teams made up solely of men**. In monetary terms, the figures are even more discouraging. In the same year, teams founded exclusively by **women managed to capture only 3% of the total capital**, while mixed teams obtained 15% of financing, leaving 82% of the capital in the hands of entirely male teams. In Spain, despite the lack of specific statistics addressing this problem, it is possible to determine the entrepreneurial situation both in the private and public spheres. According to GEM, in Spain, **the launch of an innovative entrepreneurial activity led by a woman requires, on average, 67,279 euros, representing 11% less than the 74,779 euros required by enterprises founded by men**.

There, it is possible to observe that **women tend to require less initial capital to launch their innovative businesses**: 26% of women entrepreneurs need less than 3,000 euros to start, in contrast to 18% of men. On the other hand, a higher proportion of men need significantly higher amounts: 40% require more than 30,000 euros to start their projects, compared to 30% of women. This difference in the seed capital required is attributed to **a greater ambition expressed by men**, which can reflect both differences in the scale or scope of the projects undertaken and variations in access to financial resources.

Figure 10. Distribution of innovative entrepreneurs by amount of seed capital received by each gender

(% of the total number of people receiving funding), 2022



Source: AFI, from GEM-Spain APS 2022-2023.

Persistent gender disparity in access to funding is evident even within the framework of government aid, with women participating less in these grants than men. An example of this is the grants from the State Research Agency (AEI), where only 33.6% of the proposals received were led by women. Similarly, only 33.3% of the projects ultimately selected to receive funding assistance were run by women. Therefore, **the proportion of women who actually received this funding is a reflection of their lower participation in the application process.**

Recognising the specific obstacles faced by women in financing their projects, **several public initiatives aim to stimulate innovative entrepreneurship among women.** These include loans from the National Innovation Company, S.A., ENISA, specifically designed to support digital entrepreneurship projects led by women; the Women's Talent Attraction programme at EOI Business School; the NEOTEC programme for Women Entrepreneurs at the Centre for the Development of Industrial Technology, CDTI; and the Entrepreneurship Skills Development programme, also from EOI.

One case considered successful is the aforementioned NEOTEC programme for Women Entrepreneurs, which proposes to subsidise up to 70% of the investment in new innovative business projects led by women up to a maximum of 250,000 euros, which allowed the proportion of women receiving support to rise from 25% in 2021 to 27% in 2022.



Gap 5

Visibility, representation and self-perception: gender stereotypes and imposed roles increase and perpetuate the gap between women and men in innovative entrepreneurship

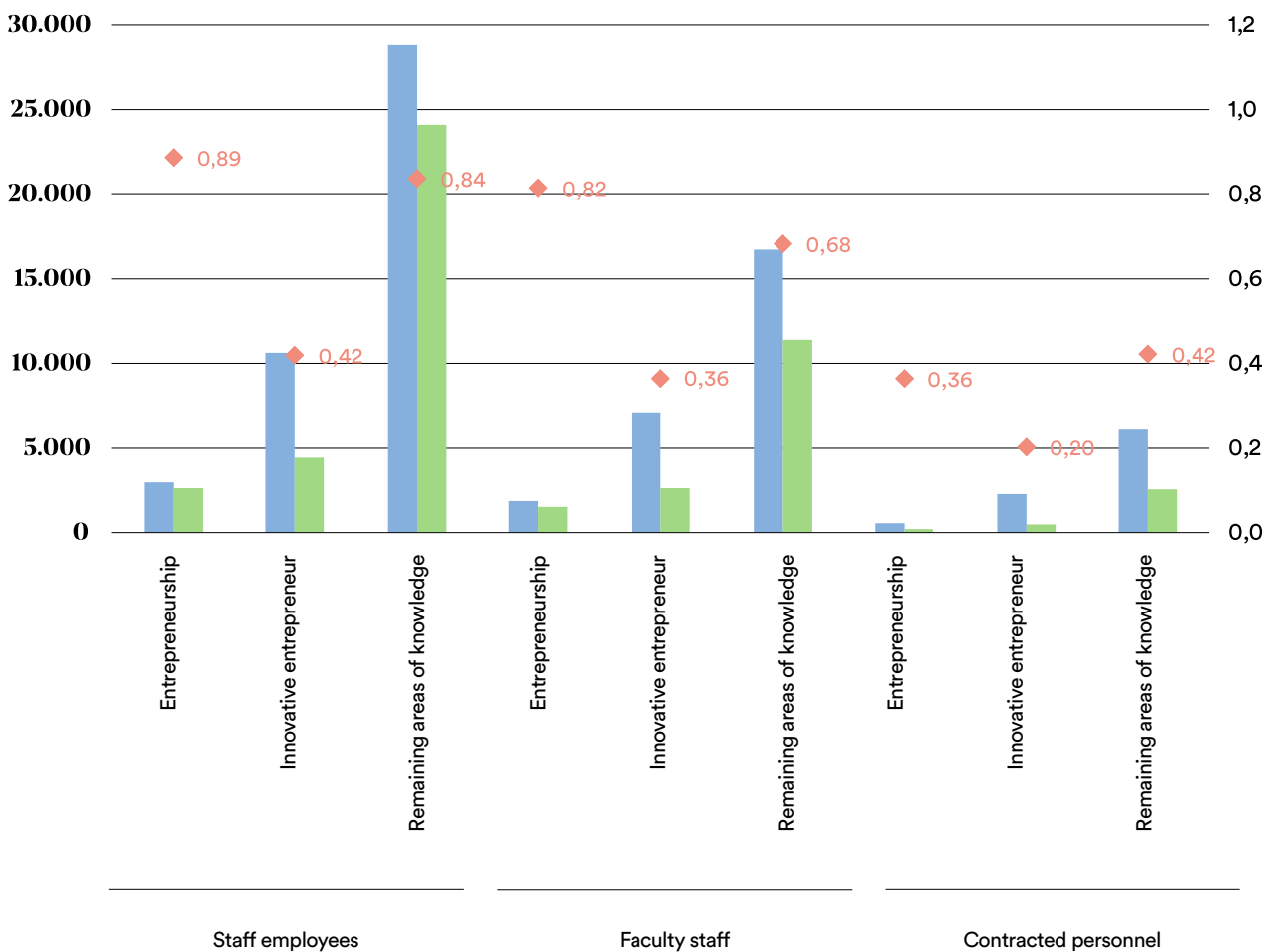


Examples of **women entrepreneurs and innovators often do not receive the visibility they deserve, which is largely due to inadequate communication to society** in general. Although the most widespread social belief is that there are no tangible obstacles to entrepreneurship due to being a woman, **the limited number of women who are leaders and who are socially aware of innovative entrepreneurs has an impact on the self-perception that women have of their own knowledge, skills and potential for growth in areas of leadership, innovation and entrepreneurship.** In addition, the persistence of problems with work-life balance due to a large extent to the lack of shared responsibility, gender discrimination and practices such as mansplaining, result in innovation being seen in many cases as a male activity.

The under-representation of women in university classrooms where disciplines related to innovative entrepreneurship are taught is not only limited to students, **but is also observed among the teaching and research staff (PDI).** Indeed, only 29.5% of teachers in university centres who teach subjects related to innovative entrepreneurship are women (0.42 women for every man). This gender gap in teaching disciplines related to innovative entrepreneurship is widening among the faculty (0.36 women for every man) and it also extends to contracted staff (0.20 female teachers for every male teacher).

Figure 11. Research and Teaching Staff by area of knowledge and category

(Research and teaching staff by category;W/M ratio right axis), 2021-2022 academic year



Source: Afi, from the Ministry of Science, Innovation and Universities.

W/M Ratio Men Women

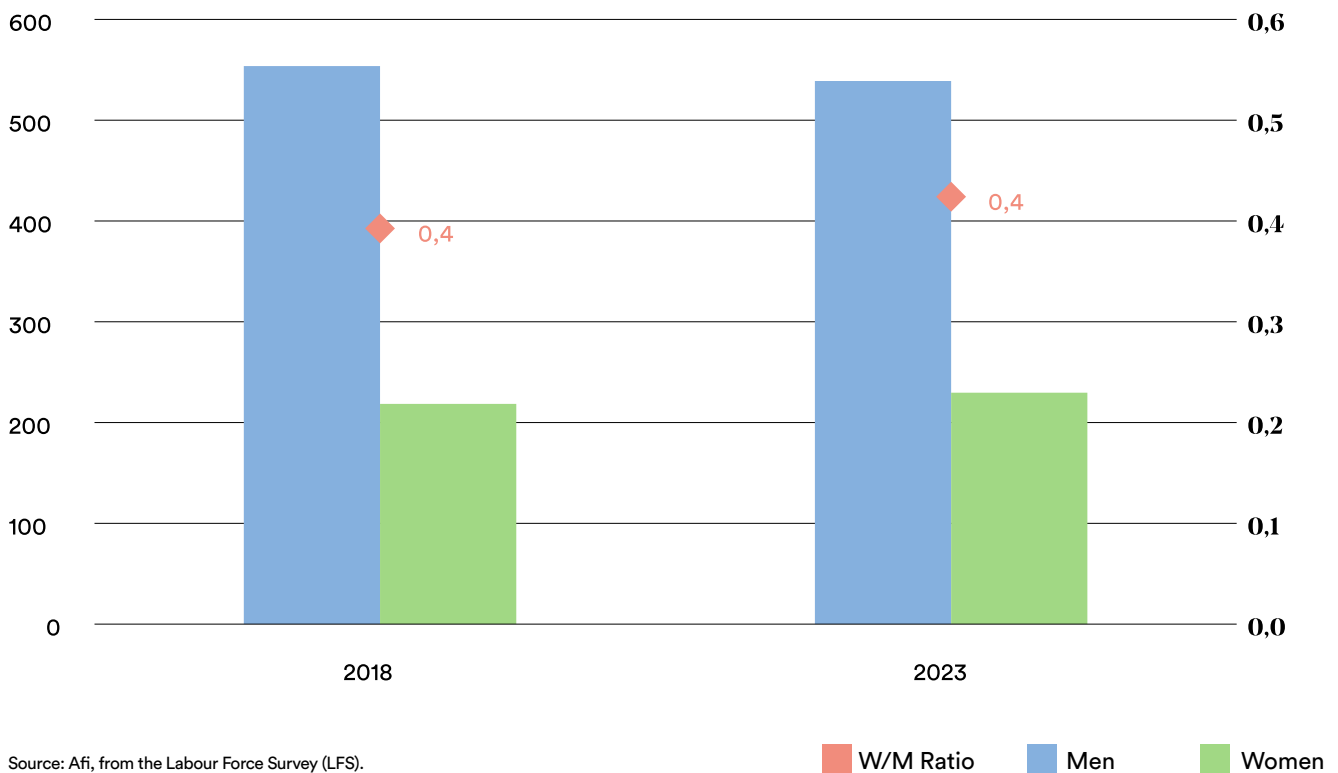
In addition to the lack of role models in universities, there is **limited representation in management or director positions** (0.4 women for every man in the same situation), as well as **limited visibility in influential forums (#AllMalePanels)**. Furthermore, in the case of the foundation of *startups*, gender differences are even more pronounced. Indeed, 82% of the **newly created companies and technology-based companies** established in Spain in 2022 had a management team made up of only men; or, in fact, less than one in five new national companies have a woman on their founding team. Companies with mixed teams in their leadership at the time of foundation make up 10%, with *startups* that have women driving their development representing 8%.

Despite this low level of female representation, **it is evident that women are excellent in leadership roles, showing themselves to be effective managers**. Indeed, *startups* founded by women **generate 10% more revenue** than those founded by men and **fail in 27% less** of the cases. This phenomenon also has consequences for the success achieved when it comes to an exit: women founders succeed in selling their companies in 27% more cases than men do.

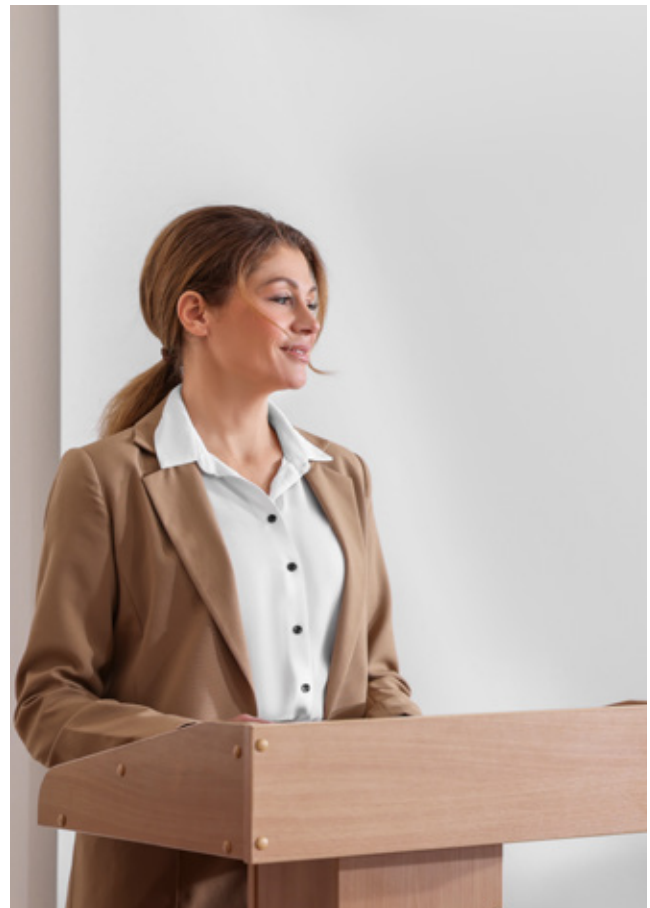


Figure 12. Women and men entrepreneurs who occupy managerial or director position

(thousands of people; W/M ratio right axis), 2018 - 2023



In addition to all of these obstacles in entrepreneurship, access to financing can also be considered. **Half of women in innovative entrepreneurship processes noted accessing credit as their main difficulty.** In fact, according to the Women's White Paper, due to the difficulty in accessing credit, projects led by women who achieve financing are usually more highly scrutinised and therefore more likely to be viable. This would challenge the stereotypical notion that women are more risk averse or more cautious in their ventures, but rather that they have more difficulties to overcome than men.



Conclusions

There are numerous conclusions that can be drawn from this report, and the analysis carried out in this study has allowed us to unveil the gender gaps that exist in innovative entrepreneurship in Spain. The five gaps identified, analysed and quantified focus on five aspects that accompany the life cycle of people in their training and professional endeavours, starting (gap 1) with regulated training in post-compulsory stages and continuing (gap 2) with their integration into the labour market as entrepreneurs (working for themselves, in accordance with its description in public statistics). This continues with the establishment of an entrepreneurial endeavour focused on innovation (gap 3), whose optimum deployment and equal conditions for

women and men is hindered by aspects such as lack of access to financing for female entrepreneurs (gap 4); and the differences in self-perception that women and men have of their own skills and knowledge, as well as the unequal visibility and public awareness observed between women and men (gap 5), which prevents them from enjoying, learning and drawing inspiration from leading women, and responds to the prevalence of gender stereotypes and biases that act as obstacles, and which, unless they are eliminated, compensated or corrected, will prevent the gender gap in innovative entrepreneurship from closing.



ClosinGap

1. What is ClosinGap?

ClosinGap is a Spanish non-profit association, run by Lucila García, that was created to promote economic growth from a gender equality perspective.

Formed by 12 large companies (Merck, MAPFRE, Repsol, BMW Group, Mahou San Miguel, PwC, CaixaBank, Grupo Social ONCE, KREAB, Fundación CEOE, Telefónica and Redeia) united behind the goal of accelerating the transformation in favour of equal opportunities for women and men and achieving the Sustainable Development Goals using a three-pronged strategy:

- Promoting knowledge and debate on inequality from an economic perspective.
- Serving as a source of innovative initiatives connected to the economy and women.
- Acting as a driver of social and economic transformation through initiatives that help to close these gaps.

2. Who has joined this association?

The member companies of the Association are Merck, MAPFRE, Repsol, Mahou San Miguel, BMW Group, PwC, CaixaBank, Grupo Social ONCE, KREAB, Fundación CEOE, Telefónica and Redeia.

ClosinGap Board of Directors

President: Marieta Jiménez (Merck) Antonio Huertas (MAPFRE), Carmen Muñoz (Repsol), Manuel Terroba (BMW Group), Eduardo Petrossi (Mahou San Miguel), Manuel Martín (PwC), Gonzalo Gortázar (CaixaBank), Miguel Carballeda (Grupo Social ONCE), Eugenio Martínez (KREAB), Fátima Báñez (Fundación CEOE), José María Álvarez-Pallete (Telefónica) and Beatriz Corredor (Redeia).

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3. What kind of work are we doing?

The Association publishes detailed reports on the impact on Spanish GDP of the persistence of different gender gaps in various areas such as health, pensions, work-life balance, information technologies, consumption, leisure, positions of power, employment, disability, mobility or tourism, among others, in addition to developing other common actions.

4. Our objectives

To promote social transformation from the business realm in the area of women and the economy, in close collaboration with the public and private sectors. To generate knowledge and spark debate, to become a source of innovation, as well as a driving force and agent of change.

5. Where can you learn more about us?

You can find more information by going to www.closingap.com or our LinkedIn, X (Twitter), @Closingap, and Instagram, Closingap_



Acknowledgements

This ClostinGap report on the opportunity cost of the gender gap in innovative entrepreneurship has been promoted by Redeia and prepared by International Financial Analysts (Afi).



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