



# Gender Equality Plans at Small and Medium-Sized Enterprises in One of the Most Sparsely Populated Areas in Europe: the Province of Teruel

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## Abstract

This study examines the voluntary adoption of practices related to gender equality plans (GEPs) at rural enterprises. It focuses on small and medium-sized enterprises (SMEs) in the province of Teruel, one of the most depopulated regions in Spain and catalogued by the European Union as a sparsely populated area. The analysis focuses on 2018, the year before enactment of a new regulation in Spain that extends the requirement to implement GEPs to enterprises with 50 or more employees, and it explores the factors that influence small companies to voluntarily draw up equality plans. Using data from the database of the System of Analysis of Iberian Balances (SABI), we conducted an electronic survey in 2018 and obtained responses from 141 SMEs. A logistic regression model was applied to determine the relationship between the voluntary implementation of a GEP and several organizational characteristics. The results show that implementing a GEP is positively related to the aspects of innovativeness and environmental concern at rural enterprises. These findings have important implications for the competitiveness and sustainability of the rural business sector, and they highlight the relevance of the stated aspects in fostering gender equality initiatives in sparsely populated regions.

**Keywords** Diversity · Rural · Spain · Teruel · Emptied Spain · Gender equality plan

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## 1 Introduction

Depopulation of the rural environment is a severe problem in Spain, and it has structural characteristics that must be taken into account by the public administrations (Díaz-Lanchas et al., 2021; Loras-Gimeno et al., 2025; Federación Española de Municipios y Provincias (FEMP), 2017). Given that rural towns are losing their populations and that in those towns there are 76.3 per cent more men than women, the view of the Spanish government is that having women who live in rural areas is essential for sustainable development and territorial cohesion (Ministerio para la Transición Ecológica y el Reto Demográfico, 2020). And even though this issue affects several parts of the Spanish territory (Delegate Viñas, 2019), the situation is more of a concern in the Province of Teruel than in other areas (Renau & Pizarro, 2013). This area, threatened by depopulation, is a part of the so-called “empty Spain”, a phenomenon that constitutes “an extremely urgent national issue” (Cobano-Delgado & Llorent-Bedmar, 2020, p. 1). According to the European Union, Teruel is categorized as NUTS 3, defined as a sparsely-populated region. The Province of Teruel lost 6.6 per cent of its population between 2010 and 2024 (INE, 2025), thereby reflecting the issue of rural depopulation and the demographic challenge (Delgado Viñas, 2019; Losa Muñoz & Vaquero García, 2020), a particularly pressing problem in the mountainous areas of the province (Renau & Pizarro, 2013). For some authors, the issue of Teruel and other inland Spanish areas lies in the belated development of the welfare state (Escalona-Orcao & Díez-Cornago; Esteban-Salvador et al., 2020). In any event, the future is bleak in areas that have a low population density, where there is an “unbalanced age, gender and qualifications structure [... and] lack an urban system as a mainstay of the territory” (Pinilla & Sáez, 2017, p. 3). Within this context, the expression “empty or emptied Spain” refers to the emptying of towns due to an ageing population, due to people moving to the cities and due to a lack of opportunities. As a solution to depopulation, some authors have proposed measures such as attracting immigrants, preventing women from emigrating to the city and creating female employment (García Marín & Espejo Marín, 2019).

The problem of the Province of Teruel is that there is a low percentage of people living in small and isolated settlements, where they are at risk of social exclusion and situations of injustice due to poor accessibility, in addition to “the fact that these settlements are distributed throughout an extensive territory, [which] gives it a very low level of accessibility and highlights the magnitude of the problem” (Escalona-Orcao & Díez-Cornago, 2007, p. 307). Furthermore, a recent study on women in rural areas of the region of Aragón, where the Province of Teruel is located, observed a more significant population gender gap in rural areas than in urban areas and found it difficult to determine the statistics on the working-age population, especially among women (Duarte et al., 2021). Women tend to participate less in the labour force of predominantly rural regions than in the economy as a whole (Eurostat, 2018). Moreover, Teruel is among the provinces in Spain with the highest percentage of males,<sup>1</sup> which also offers a particular context to studying gender equality issues.

Another issue related to gender came to light during the recent pandemic caused by the SARS-CoV-2 virus, whose impact varied according to gender (Brini et al., 2024; Fisher & Ryan, 2021; Parry & Gordon, 2021). “Policy-makers must [therefore] pay attention to the effects of this pandemic on women and consider what can be done to prevent the long-term erosion of previous gains in gender equality” (Peck, 2021, p. 493). As a result, one of the

<sup>1</sup> The fourth highest percentage by province according to the National Institute of Statistic (INE, 2022).

Spanish government's objectives for cushioning the impact of the pandemic has been to use European funds to reverse the depopulation trend in unpopulated areas.<sup>2</sup> Within this context, the results of the Oxfam survey on the consequences of the pandemic should be noted. That survey involved 295 economists from 79 countries, with 87 per cent of the respondents expecting income inequality to grow and gender inequalities to increase (Oxfam International, 2021). The SARS-COV-2 situation, technological change and the development of teleworking could serve to mitigate inequalities between rural and urban areas by attracting businesses and workers to unpopulated areas (Gutiérrez et al., 2020). Some indicators in Spain after the pandemic showed a possible change in decisions about where to live (Banco de España, 2020), although there are doubts about the extent to which the increase in the ruralisation observed in that year will continue over the long term (Gutiérrez Chacón et al., 2022). The pandemic, therefore, does not appear to have been an opportunity to reverse rural depopulation (Esteve et al., 2021).

In Spain, since 2008 public administrations have regularly offered grants and subsidies to help small and medium-sized enterprises prepare an equality plan if they don't have one. In this regard, it should be recalled that rural areas require special attention with respect to gender equality issues so that depopulation can be prevented. And in rural areas, the business sector is composed mainly of SMEs: they represent 99.8 per cent of the total number of businesses in Spain and provide 61.64 per cent of the employment (DGIPYME, 2024). In this study, we attempt to understand the status of gender equality plans at SMEs located in the rural areas of a sparsely populated province. Greater knowledge of rural entrepreneurship could ultimately prevent or help in creating measures that avoid the disappearance of small municipalities. Therefore, an analysis of the situation of women at companies in these unpopulated territories becomes vital because their presence could slow down depopulation, especially in the case of young women with children. The contribution from enterprises located in the rural world to structuring the territory and fighting against depopulation is vital. One of the ways they can contribute is through gender sustainability, which involves policies that contribute to effective equality for women at businesses. Therefore, the answer to the following question is crucial: are the businesses of emptied Spain implementing such equality plans, even though they are not obligated to do so?

Why are we analysing the province of Teruel? The answer to that question begins with one of the challenges currently faced by Spain, which is to solve the demands of a citizen movement claiming rights for the population that resides in "emptied Spain". This movement emerged in the Province of Teruel over twenty years ago, calling itself "Teruel Does Exist". In the 2019 national elections, Teruel Does Exist decided to run for election as a separate group from the traditional parties, with the aim of giving voice to urgent demands from the rural world of Teruel. This group won one seat in the Spanish Congress of Deputies and two in the Senate, and the vote of the congressman who represents this movement was decisive in forming the current Spanish government. Ever since Teruel Does Exist presented a candidate in the 2019 elections, numerous associations and platforms from other Spanish provinces with a depopulation problem have become staunch supporters of this citizen movement. It's even possible that an association of voters could be created to represent the

<sup>2</sup> This was stated by the then First Vice President and Minister of the Presidency of the Government of Spain, Carmen Calvo, when taking office as the new head of the Civil Guard in the Province of Teruel in 2021. See <https://www.elperiodicodearagon.com/aragon/2021/04/05/teruel-horizonte-gobierno-descentralizar-instituciones-46446471.html> (accessed 27 April 2021).

entire national territory, which would change the current spectrum of political parties in Spain.

This study seeks to learn more about depopulated areas from different points of view. More specifically, the paper explores the behaviour of SMEs with respect to developing voluntary equality plans between men and women in this sparsely populated and primarily rural territory. This research complements other studies conducted in the same province, such as one that analyses environmental practices in isolated rural areas (Esteban-Salvador et al., 2020), but in this case the analysis is from a gender perspective. In addition, this work provides information that could be useful for establishing contingency plans at enterprises, given that knowing past behaviours can be useful for making future decisions. The study also reinforces others that analyse large enterprises, especially those that are publicly traded and usually located in urban areas or areas with a higher population density (Beji et al., 2021; Calzón-Menéndez et al., 2023; Konadu et al., 2022). Finally, to determine the awareness of rural firms, we examined the practices carried out by those firms that implement voluntary equality plans versus those that do not implement them. In doing so, we analysed rural SMEs only up to the year before such plans became mandatory for certain businesses.

The structure of this article is the following: The next section reviews Spanish regulations on gender equality plans, as well as literature related to gender equality. We subsequently present the methodological framework in which we explain the samples, the variables used and the binary logistic regression model that is applied. Consequently, we define the research questions, the sample and the statistical techniques that are used. We then state the main results, and finally, we present the most significant conclusions, as well as the limitations of the study and ideas for future research.

## 2 Equality Plans and a Review of Literature

Equality is essential in sustainable human resource management (Yu et al., 2021). Thus, enterprises should include policies that promote gender equality, including “gender equality plans for organisations combined with measures targeted at women to improve their competitive position through opportunities for training and development, mentoring and networking” (Kassinis et al., 2016, p. 408).

The European Commission Communication on “A Reinforced European Research Area Partnership for Excellence and Growth” (European Commission, 2012) requested that Member States invite their research stakeholder organisations to use gender equality plans in order to not only conduct impact assessments of practices and procedures and thereby identify gender bias but also to implement innovative strategies for the purpose of correcting any discrimination and to establish targets and monitor progress using indicators. Through the European Institute for Gender Equality (EIGE),<sup>3</sup> the European Union (EU) promotes both gender equality and the Gender Equality Strategy 2020–2025 as part of a wider agenda on equality and democracy (Debusscher, 2022; European Commission, 2020). Other countries outside of the EU have established other entities that oversee gender equality, such as the Workplace Gender Equality Agency in Australia. The Australian government has also enacted regulations to promote gender equality, such as the Workplace Gender Equality Act 2012 (amended in 2016). Globally, “achieving gender equality and empower-

<sup>3</sup> See <https://eige.europa.eu/> (accessed 26 April 2022).

ing all women and girls” is one of the Sustainable Development Goals (SDGs) of the 2030 Agenda (United Nations, 2015).

In 2007, Spain took a significant step forward in equality policies with the approval of Organic Law 3/2007, of 22 March, for the effective equality of women and men. In accordance with Article 45 of this regulation, enterprises are obligated to respect equal opportunities and equal treatment at work. Companies have therefore had to adopt measures that are negotiated with the legal representatives of employees, and enterprises that have more than 250 employees have had to develop and apply an equality plan. For all other companies, implementing such plans is voluntary. Still, to encourage firms to voluntarily implement equality plans, the provisions of Article 49 of that law set forth measures to promote the necessary technical support. Twelve years later, Article 45 of Organic Law 3/2007, regarding equality plans, was amended by Royal Decree-Law 6/2019, of 1 March, on urgent measures to guarantee equal treatment and opportunities between women and men in employment and occupation. The new regulation gradually reduces the number of employees from 250 to 50 as the number as from which an equality plan must be developed and implemented, thereby increasing the number of enterprises with an equality plan. Another novelty of this new regulation is that it establishes a register of such plans. Royal Decree 901/2020, which regulates equality plans and the registration thereof,<sup>4</sup> was approved one year later. This law extends the obligation to implement an equality plan to companies that have fifty or more employees.<sup>5</sup> Implementing an equality plan is voluntary for all other businesses. As it is stated in section III, the implementation of equality plans seeks to advance in achieving the SDGs of the United Nations 2030 Agenda,<sup>6</sup> specifically SDG 5, “Gender equality”, and SDG 8, “Decent work and economic growth”. Another critical step in terms of equality came from Royal Decree 902/2020, on equal pay between men and women, whose purpose is to establish specific measures that effectively implement the right to equal treatment and non-discrimination between women and men in matters of pay, therefore developing mechanisms to identify and remedy discrimination in this area. It stipulates that companies that draw up an equality plan must include pay audits in such a plan.

To help implement equality plans at enterprises, the Sub-Directorate General for Entrepreneurship, Equality in Business and Collective Bargaining for Women created a guide to help businesses develop equality plans (Instituto de las Mujeres, 2021). That same institution also prepared a document of good practices for attracting and engaging talent and for professional promotion with a gender perspective through the initiative, “More women, better enterprises” (Instituto de las Mujeres, 2020). According to the “Equality at the Company Bulletin”,<sup>7</sup> if the gender perspective had been ignored during the pandemic, the consequences, both economic and social, would have had repercussions on inequality due to the unequal impact between women and men regarding the healthcare overload, essential

<sup>4</sup> Royal Decree 901/2020, of 13 October, regulates equality plans and the registration thereof and amends Royal Decree 713/2010, of 28 May, on the registration and deposit of collective bargaining and other labour agreements.

<sup>5</sup> Article 3 of this regulation clarifies how to quantify the number of workers at companies.

<sup>6</sup> See <https://sdgs.un.org/2030agenda> (accessed 2 October 2021).

<sup>7</sup> See “Equality at the Company” Bulletin No. 60 Gender Equality and COVID-19, at [https://www.igualdad.laempres.es/actualidad/boletin/docs/BIE\\_60\\_Igualdad\\_Genero\\_COVID19.pdf](https://www.igualdad.laempres.es/actualidad/boletin/docs/BIE_60_Igualdad_Genero_COVID19.pdf) (accessed 22 September 2021).

services, domestic care, violence against women and the increase in unemployment. Businesses should therefore include the gender perspective through their contingency plans.

Regarding the effective implementation of equality plans in Spain, several studies at universities indicate that progress has been slow (Arteaga et al., 2020; Pastor Gosálbez et al., 2020). One such survey suggests that even though equality plans do exist, they are often outdated and sometimes have no budget allocated for implementation. Moreover, there is no solid institutional commitment to developing initiatives, programmes and policies designed to change the current androcentric structure (Pastor Gosálbez et al., 2020). Management teams must be committed to applying all regulations that develop equality between women and men (Arteaga et al., 2020).

In business, the gender equality issue has become an increasingly important part of corporate social responsibility (CSR) (Velasco-Balmaseda et al., 2024), which is defined as the integration of social and environmental tasks into business activities and relationships with stakeholders on a voluntary basis (Commission of the European Communities, 2001). There is some research that focuses on whether a company's level of gender awareness might be related to its environmentally friendly behaviour, which could lead to synergies between human resource management and a company's environmental policy (Kassinis et al., 2016). Some research on gender, environment and development has shown that women have a more environmentally friendly behaviour than men (Shiva, 1989; Svarstad et al., 2006). Previous research has also demonstrated that sensitivity toward the environment and related to pro-environmental actions is greater in women than in men (Ramstetter & Habersack, 2020; Zelezny et al., 2000). In addition, some studies find that women show higher levels of social responsibility than men and that they exhibit an extended "other orientation", which involves taking responsibility for alleviating social and environmental problems (Zelezny et al., 2000). On the other hand, some research has found a positive relationship between gender diversity on boards of directors and the level of carbon disclosure (Liao et al., 2015; Konadu et al., 2022). Yet other previous studies do not find conclusive relationships between gender and the environment (Hayes, 2001). Some authors have found that women are more involved than men in conscientious environmental activism at organisations (Wehrmeyer & McNeil, 2000) and that the presence of women in top management leads to increased environmental performance (Burkhardt et al., 2020). Other authors refer to the potential "signalling" value of gender policies to potential investors, thereby considering that a company involved in promoting gender diversity is also likely to be interested in environmental sustainability (Kassinis et al., 2016). And regarding the voluntary publication of information on practices carried out by businesses, in other countries such as the UK, some companies have addressed the impacts of human-induced climate change on the viability of their businesses and have publicly reported their efforts, in the absence of mandatory independent reporting requirements (Liao et al., 2015). This voluntary approach is in line with the broader idea that businesses that implement progressive policies – such as equality plans – often engage in environmental practices as well.

Within the context of rural SMEs, particularly in sparsely populated areas, the adoption of high environmental standards can serve as a competitive advantage and a means of sustainable business development. Given the evidence that links gender equality measures to corporate environmental responsibility, we propose the following hypothesis:

**Hypothesis 1.** The voluntary implementation of an equality plan at rural SMEs is related to carrying out environmental practices.

The relationship with local communities is one of the most relevant dimensions of CSR, with the concern for gender equality at businesses extending beyond the boundaries of an organization. Due to the division of labour between genders, women are responsible for the majority of direct care work within the family and the community. Moreover, gender equality is a very significant issue regarding the social capital and development of rural areas (Surjono et al., 2015), given that gender equality and community development are closely related. In fact, the National Rural Development Programme (2014–2020) established by the Spanish Government (2015) underscores the importance of equal opportunities between men and women for sustainable development. The EU also promotes gender mainstreaming in rural development policies, given that retaining women in rural areas is crucial for the long-term viability of such areas (Bock, 2015).

One of the specific actions whereby a company can express its social dimension is through the development of a GEP (Revuelto-Taboada et al., 2021), which is also a way for businesses to be socially responsible and improve their image in the eyes of stakeholders. Public opinion and institutional pressure are consequently related to the equality behaviour of companies. This is important, given that the dimensions of CSR include relationships with local communities and that respect for equality and diversity enhances a company's openness to its community, thereby gaining legitimacy in the eyes of its stakeholders (Castro & Álvarez, 2011). Moreover, a positive relationship is assumed to exist between gender equality and social concerns related to a company's impact on the society where that company runs its business. Therefore, the following hypothesis postulates a positive relationship between the voluntary implementation of an equality plan and concern about the development of a rural community.

**Hypothesis 2.** The voluntary implementation of an equality plan is related to the desire to contribute to the development of a territory.

Innovation is a critical factor for the competitiveness of businesses and the territories where they are located, and even more so in rural areas (Moseley, 2000). Strategic human resources management and high-performance labour systems, including innovation, equality and diversity strategies, are associated with organizational performance (Flood, 2008). Miller and Triana (2009) found a positive relationship between gender diversity on the board of directors and expenditure on innovation. Also, gender diversity increases loyalty among customers, investors and employees (Mory et al., 2016), thereby providing a company with more information, knowledge and greater flexibility and adaptability (Castro & Álvarez, 2011).

The capacity to adapt to change allows companies to be aware of the importance of diversity and equal opportunities and therefore allows them to contribute to adopting practices and proposals related to gender equality. Moreover, innovation is finally becoming understood as a broad and systematic activity resulting from complex relationships with different agents (Macgregor & Fontrodona, 2008). Innovativeness is related to having access to a diversified pool of knowledge, which requires a variety of human resources so that the creation of new ideas at a company can be absorbed and reinforced. According to several



studies, gender diversity and innovation are closely related (Alsos et al., 2013; Díaz-García et al., 2013; Ritter-Hayashi et al., 2019).

The third hypothesis covers this aspect and is stated as follows:

**Hypothesis 3.** The voluntary implementation of an equality plan is linked to innovation.

Finally, several studies have found a positive relationship between socially responsible practices and financial performance (Choi et al., 2010; Herrera Madueño et al., 2016; Kuzey et al., 2021; Orlitzky et al., 2003). While there is no clear conclusion about the sign of the correlations, some authors highlight that “the social is profitable and that the profitable is social, thereby originating a positive feedback virtuous circle” (Rodriguez-Fernandez, 2016, p. 137). Consequently, achieving higher returns will allow greater investments in social projects. Research by Callan and Thomas (2009) and by Simpson and Kohers (2002) also found a positive relationship between CSR and company performance.

The voluntary adoption of practices related to gender equality can influence financial performance. Some authors find that at publicly traded firms, “companies that make additional efforts to erase gender biases and barriers have much to gain, not only in terms of financial performance but in environmental sustainability as well” (Kassinis et al., 2016, p. 109). Progress in gender equality not only has many positive impacts on individuals but also on society as a whole. According to the European Institute for Gender Equality (EIGE, 2017), progress in gender equality would have a positive impact on the sustained growth of Gross Domestic Product (GDP), on employment levels and on productivity, and it could address the challenges of the EU’s ageing population.

The perception of economic benefits derived from socially responsible behaviour serves as a stimulus to further develop measures that strengthen CSR, such as the adoption of gender equality plans by a company. We have summarized these aspects in the fourth hypothesis, which is the following:

**Hypothesis 4.** The voluntary implementation of an equality plan is related to the perception of a positive effect by responsible practices on company profits at rural SMEs.

### 3 Method

The research is based on all the SMEs in the province of Teruel, which amount to 1,652 enterprises. These companies were taken from the SABI database, owned by the company Informa-Bureau van Dijk. This database constitutes the Spanish input for the Amadeus and Orbis dataset that is used worldwide, and it provides information on Spanish companies that submit information to the Register of Companies. We sent a first questionnaire in an initial study to the whole population of companies via e-mail and received a response from 511 enterprises (31.6 per cent response rate and 3.55 estimation error percentage, with a confidence level of 95 per cent). These 511 businesses formed our study population – we discarded the remaining businesses that did not respond to the questionnaire in the initial study after having sent several reminders. We then sent a second questionnaire in 2018, which was the year right before the increase in the legal requirements regarding the number of employees as from which enterprises were obligated to draw up an equality plan. A total



of 141 companies responded to the second questionnaire, which represents a response rate of 27.59 per cent of the businesses that responded to the first questionnaire sent to the total population of SMEs in the province. The respondents were informed that their responses would be kept confidential.

The first objective of the 2018 survey was to identify the proportion of enterprises that stated that they had voluntarily implemented an equality plan without being obligated to do so. To determine whether organizations had a GEP, we asked them directly if they had one. It should be recalled that, up to 2018, only companies that had over 250 employees were obligated to implement a GEP, and the rest could do so voluntarily. It was therefore essential to analyse the characteristics of those companies that had implemented a GEP even though they were not obligated to do so, and as well as analyse the features of any such plans.

According to the preceding literature review, we chose four items to identify the factors that led companies to have an equality plan between men and women. These four items (I1, I2, I3 and I4) were measured on a 5-point Likert scale, where 1 means strongly disagree and 5 means strongly agree. The control variables used in the analyses were the number of employees and the industry. The questions asked of respondents represent the predictor variables (Table 1).

After performing an exploratory analysis of the data, we decided to build a binary logistic regression model to test our hypotheses, given that this kind of model is not as strict when the variables do not follow a normal distribution, as in the case of a multiple linear regression (Dewberry, 2004; Verma, 2013). Moreover, there is no clear consensus on how many predictor variables are advisable according to the sample size. We consequently followed Martínez Arias (1999), who indicates that the minimum requirement is having between 5 and 10 cases per independent variable.

We focused on the relationship between the voluntary implementation of an equality plan according to the 4 categorical variables in the survey (I1, I2, I3 and I4) and the two control variables, one continuous (number of employees) and the other measured by three sector dummy variables (industry). The dependent variable is dichotomous: the two cate-

**Table 1** Question items

| Variable                    | Description  | Scale          |
|-----------------------------|--|----------------|
| Dependent variable:         | 1=The enterprise has a gender equality plan voluntarily implemented<br>0=The firm does not have a gender equality plan voluntarily implemented | Dummy<br>0–1   |
| <b>Predictor variables:</b> |  |                |
| I1                          | The enterprise carries out environmental practices   | Ordinal<br>1–5 |
| I2                          | When choosing the location of the enterprise, the desire to contribute to the development of the town or region was important                  | Ordinal<br>1–5 |
| I3                          | The enterprise innovates with products and processes   | Ordinal<br>1–5 |
| I4                          | Carrying out responsible practices helps the enterprise improve its income statement   | Ordinal<br>1–5 |
| Control variables:          | Number of employees  | Metric         |
|                             | Industry   | Dummies<br>0–1 |

ries of implementing a GEP are represented by one if the company does have an equality plan voluntarily implemented and zero otherwise. By previously constructing the model, we checked that the number of variables is within the recommended number for the sample size to improve the accuracy of the model.

Furthermore, we performed multicollinearity diagnoses with all the predictor variables using the Variance Inflation Factor (VIF) to avoid multicollinearity problems. No coefficient exceeded the commonly accepted VIF threshold of 10 (Hair et al., 2004), and no tolerance value was less than 0.10. Additionally, the condition index showed low values. All this indicates that multicollinearity was not a potential concern. The general form of a logistic regression equation in which  $P(Y)$  is the probability of  $Y$  occurring,  $e$  is the base of natural logarithms and  $\beta$  are the coefficients is the following:

$$P(Y) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_{ni} x_{ni})}}$$

Consequently, for a given enterprise,  $P(Y)$  will be a value of between zero and one, where zero means that there is no possibility that the enterprise has an equality plan voluntarily implemented and one means that the company does indeed follow a voluntarily implemented equality plan.

We developed the logistic regression equation with the predictor and control variables as follows:

$$\begin{aligned} \ln(\text{odds of voluntarily implemented equality plan}) = & \beta_0 + \beta_1 I_1 + \beta_2 I_2 + \beta_3 I_3 + \beta_4 I_4 + \beta_5 \\ & \text{Number of employees} \\ & + \beta_6 \text{Industry1} + \beta_6 \text{Industry2} \\ & + \beta_6 \text{Industry3} + \varepsilon \text{ Model} \end{aligned}$$

The odds ratio ( $\text{Exp}(B)$ ) of an event occurring is defined as the probability of an event occurring divided by the likelihood of that event not occurring. Odds ratios are standardized measures that allow comparing the relative strength of predictor variables on a dependent variable. They provide an intuitive interpretation of the size effect: values of greater than one indicate that an increase in the predictor variable is associated with a greater likelihood of implementation of an equality plan, while values of less than one suggest a lower likelihood.

$$\text{Odds} = \frac{P(\text{event})}{P(\text{no event})}$$

$$\frac{P(\text{event } Y)}{1 + e^{-(\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_{ni} x_{ni})}}$$

Given that this study is based on a sample of companies that responded to a survey sent to all the SMEs in the Province of Teruel, the data, while valuable for understanding trends within the analysed group, should nevertheless be interpreted with caution because they do not allow generalization to the entire SME population. We therefore stress the magnitude and direction of the coefficients and the odds ratios for identifying meaningful patterns among

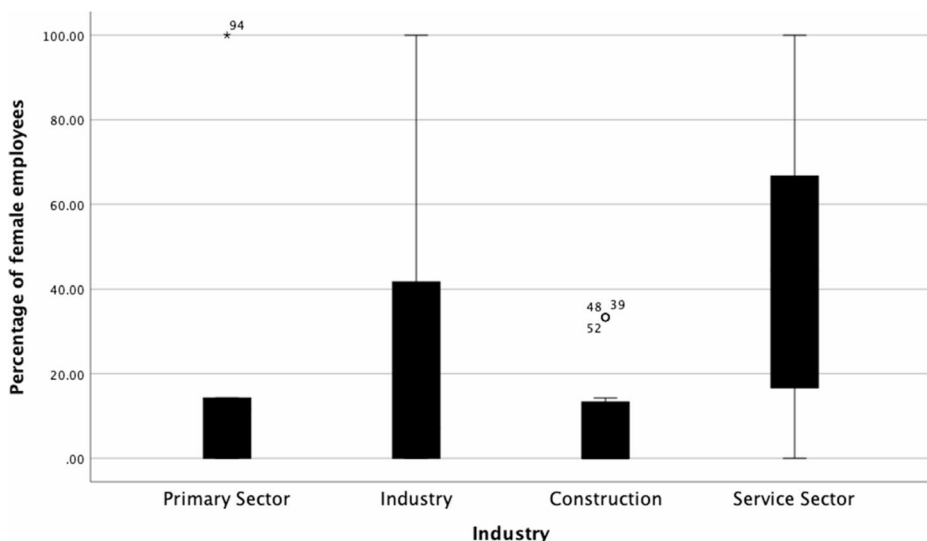
the companies that responded to our survey. This approach allows us to assess which factors are associated with higher or lower odds of voluntarily implementing an equality plan, thereby offering insights into the practical implications of the findings for SMEs within this specific context.

## 4 Results

Table 1 provides statistics for the number of employees at the analysed companies. When we collected the data in 2018, only one company was required to present an equality plan. We observed that there was an average of 19.05 workers among the 141 enterprises that responded to the questionnaire, with a very high standard deviation of 127.40. The median was three employees, and the mode was two. Consequently, all the companies were very small and were not required to present an equality plan, barring one company that had over 250 employees, which would therefore be the only one obligated to have an equality plan during the time of the study. Half of the employees of that one company are women, and given that it is the only one obligated to have an equality plan, it was eliminated from the analyses, consequently keeping those that might have a voluntarily implemented equality plan. As a result, the average number of employees is reduced by more than half, from 19.05 to 8.47 people, while the standard deviation is decreased by a factor of nearly six. With the new sample, the average number of women (2.74) drops to nearly one third of the initial figure. Conversely, the change in the percentage of women employees is negligible, as is the change in the median, the mode and the standard deviation.

Therefore, given that this study focuses on the voluntary implementation of gender equality practices, we selected all the companies in the study area with fewer than 250 employees because they were not legally obligated to implement a GEP. We consequently excluded one company, which was the only one that was subject to this obligation. As a result, if any of the remaining enterprises had an equality plan, it was because those plans were voluntarily implemented and not because the enterprise was required to do so in accordance with regulations. The comparison of means regarding the total number of employees shows that, after excluding the only enterprise that was obligated to implement an equality plan, the mean of female employees at the remaining enterprises ( $M=2.74$ ) is less than half of the sample that includes all the firms ( $M=8.04$ ).

The survey asked the companies whether they belonged to one of the following four sectors: primary sector, industry, construction or services. The highest percentage of companies in the sample, 66 per cent, corresponded to the service sector. The industrial and primary sectors had the same number of enterprises, at 14.9 per cent each, with the primary sector being the least represented (only 4.3 per cent of the enterprises). Graph 1 shows the percentage of women employees at businesses in the study area with fewer than 250 employees (men and women), which businesses were therefore not obligated to implement equality plans up to 2018. In 2019, Spanish regulations established transitional periods of adaptation, which progressively made it mandatory for companies with more than 50 employees to implement equality plans Figure 1. The highest concentration of women was observed in the service sector, surpassing men. These figures confirm the results of other studies on rural areas of Aragón, which show the horizontal segregation of women in service activities, and



**Fig. 1** Graph 1. Percentage of female employees at enterprises with fewer than 250 employees (men and women), by sectors

therefore high feminisation (Duarte et al., 2021). Conversely, the primary and construction sectors, except for some atypical values, have the lowest percentages of female employees, at less than 20 per cent.

We asked all the companies that were not obligated to implement a GEP if they nevertheless had an equal opportunity plan for men and women. The result was that more than half of the enterprises reported having a voluntarily implemented equality plan (Table 2). In other words, these small businesses in rural areas had drawn up a GEP without being obligated to do so.

Table 3 shows the descriptive statistics of the variables included in the questionnaire. The number of employees is slightly higher, on average, at enterprises that voluntarily have a GEP ( $M=9.57$ ) compared to those that do not have a GEP ( $M=7.17$ ). However, the standard deviation is higher at enterprises with a GEP. At enterprises that have voluntarily implemented an equality plan, on average they have a score of 3.94 out of 5 with respect to implementing environmental practices, while at companies that do not have a GEP, this fig-

**Table 2** Statistics of the total number of employees at the analysed companies

|                  |       | Total number of employees (men and women) |        | Number of female employees |       | Percentage of female employees |         |
|------------------|-------|---|--------|----------------------------|-------|--------------------------------|---------|
| No. of companies | Valid | 141                                       | 140    | 141                        | 140   | 141                            | 140     |
| Mean             |       | 19.05                                     | 8.47   | 8.04                       | 2.74  | 35.76                          | 35.66   |
| Median           |       | 3   | 3      | 1                          | 1     | 33.33                          | 33.33   |
| Mode             |       | 2   | 2      | 1                          | 1     | 0                              | 0       |
| Std. Deviation   |       | 127.40                                    | 21.38  | 63.26                      | 6.44  | 34.81                          | 34.92   |
| Variance         |       | 16231.46                                  | 457.01 | 4001.52                    | 41.50 | 1212.08                        | 1219.33 |
| Minimum          |       | 1   | 1      | 0                          | 0     | 0                              | 0       |
| Maximum          |       | 1500                                      | 233    | 750                        | 40    | 100                            | 100     |
| Sum              |       | 2686                                      | 1186   | 1133                       | 383   | 5042.83                        | 4992.83 |

**Table 3** Does the enterprise have a gender equality plan?

|              |       | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|--------------|-------|-----------|------------|------------------|-----------------------|
| Valid        | No    | 54        | 38.6       | 39.7             | 39.7                  |
|              | Yes   | 82        | 58.6       | 60.3             | 100                   |
|              | Total | 136       | 97.1       | 100              |                       |
| Miss-<br>ing |       | 4         | 2.9        |                  |                       |
| Total        |       | 140       | 100        |                  |                       |

ure is lower ( $M=3.17$ ). Likewise, enterprises that have voluntarily implemented an equality plan consider that carrying out responsible practices helps the enterprise improve its bottom line ( $M=3.48$ ). Conversely, enterprises that do not have equality plans give this question a lower score ( $M=2.98$ ). Regarding the question that seeks to determine whether an enterprise innovates in products and processes, the score was 3.24 for those businesses that do not have equality plans, while the score was 3.85 for those that do have equality plans. The highest relative score for all enterprises was related to the statement about the importance of contributing to the development of the town or region when choosing a location. However, at companies that have equality plans, the figure for this score exceeds four points on average ( $M=4.19$ ), while for all others the score is somewhat lower ( $M=3.74$ ). As shown in Table 4, the enterprises that do not voluntarily implement a GEP scored less overall in all the questionnaire questions than those enterprises that are committed to equality practices.

Table 4 shows the main results of the logistic regression model in our research. The full model significantly predicts the voluntary implementation of a GEP (Omnibus chi-square=23.61,  $df=8$ ,  $p<0.00$ ). The model accounts for between 17 per cent and 23 per cent of the variance on having voluntarily implemented an equality plan, and it successfully predicts the voluntary implementation of an equality plan in 73.8 per cent of the cases. Table 4 gives the coefficients, the Wald statistic and the associated degrees of freedom, as well as the odds ratio values for each of the predictor variables. The value of the coefficients of I1 (The enterprise carries out environmental practices) reveals that an increase in the value of this predictor is associated with an increase in the odds of having a voluntarily implemented

**Table 4** Descriptive statistics. Does the company have a gender equality plan?

| Dependent Variable | Independent Variable | No. of companies | Minimum | Maximum | Sum | Mean | Std. Deviation |
|--------------------|----------------------|------------------|---------|---------|-----|------|----------------|
| No                 | Number of employees  | 54               | 1       | 47      | 387 | 7.17 | 9.34           |
|                    | I1                   | 54               | 1       | 5       | 171 | 3.17 | 1.54           |
|                    | I2                   | 53               | 1       | 5       | 198 | 3.74 | 1.36           |
|                    | I3                   | 51               | 1       | 5       | 165 | 3.24 | 1.49           |
|                    | I4                   | 52               | 1       | 5       | 155 | 2.98 | 1.53           |
|                    | Valid N (listwise)   | 48               |         |         |     |      |                |
| Yes                | Number of employees  | 82               | 1       | 233     | 785 | 9.57 | 26.90          |
|                    | I1                   | 82               | 1       | 5       | 323 | 3.94 | 1.26           |
|                    | I2                   | 81               | 1       | 5       | 339 | 4.19 | 1.14           |
|                    | I3                   | 82               | 1       | 5       | 316 | 3.85 | 1.28           |
|                    | I4                   | 82               | 1       | 5       | 285 | 3.48 | 1.33           |
|                    | Valid N (listwise)   | 81               |         |         |     |      |                |

equality plan. Furthermore, according to the corresponding odds ratio, item I1 suggests that the likelihood of voluntarily implementing an equality plan is 1.483 times greater when a company carries out environmental practices than when a company does not carry out environmental practices, all other variables remaining constant. Variable I3 (The enterprise innovates with products and processes) also offers interesting results. According to its odds ratio, innovating with products and processes means that the odds of having a voluntarily implemented equality plan at a company are increased by 1.282.

Other factors, such as I2 (When choosing the location of the enterprise, the desire to contribute to the development of the town or region was important) and I4 (Carrying out responsible practices helps the enterprise improve its income statement), do not exhibit strong associations with voluntarily adopting an equality plan, given that their coefficients are small and their odds ratios are closer to 1, thereby indicating a minimal change in likelihood. Similarly, the number of employees does not appear to be a decisive factor in explaining the variation in the implementation of equality plans within the group of analysed SMEs Table 5. The results therefore largely support hypothesis 1, which states that the voluntary implementation of an equality plan at rural SMEs is related to carrying out environmental practices ( $p < 0.01$ ). Likewise, support is also obtained for hypothesis 3, albeit with a tighter level of significance ( $p < 0.1$ ). We cannot, however, show conclusive results for the other hypotheses that are posed.

## 5 Discussion

This research studies the voluntary adoption of gender equality plans among small and medium-sized enterprises (SMEs) in Teruel, a province characterized by significant depopulation. The findings show that these enterprises are proactive and have policies that are aligned with EU initiatives that not only seek to identify gender biases but also seek to implement innovative strategies that correct any discrimination, that set targets and that monitor progress by means of indicators related to gender equality plans (Debusscher, 2022;

**Table 5** Variables in the equation

|                                      | B        | S.E.  | Wald  | df | Exp(B) |
|--------------------------------------|----------|-------|-------|----|--------|
| Number of employees                  | 0.003    | 0.008 | 0.153 | 1  | 1.003  |
| I1                                   | 0.394*** | 0.146 | 7.247 | 1  | 1.483  |
| I2                                   | 0.24     | 0.169 | 2.008 | 1  | 1.271  |
| I3                                   | 0.25*    | 0.148 | 2.808 | 1  | 1.282  |
| I4                                   | 0.154    | 0.148 | 1.079 | 1  | 1.167  |
| Industry                             |          |       | 4.790 | 3  |        |
| Industry1                            | -1.057   | 0.925 | 1.305 | 1  | 0.348  |
| Industry2                            | -1.018   | 0.644 | 2.500 | 1  | 0.361  |
| Industry3                            | -0.907   | 0.557 | 2.647 | 1  | 0.404  |
| Constant                             | 2.909*** | 0.946 | 9.406 | 1  | 0.055  |
| Cox & Snell R Square=0.17            |          |       |       |    |        |
| Nagelkerke R Square=0.23             |          |       |       |    |        |
| Chi-square=23.61 (df=8. $p < 0.00$ ) |          |       |       |    |        |
| Classification % correct=73.8        |          |       |       |    |        |

Variable(s) entered in step  
1: Total employees. When  
choosing the location, the desire  
to contribute to the development  
of the town or region was  
important. The company  
carries out actions to care for  
the environment. Carrying out  
responsible practices helps the  
company improve its income  
statement. The company  
innovates with products and  
processes. Industry. The  
levels of significance are  
\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ;  
\*\*\*\* $p < 0.001$

European Commission, 2020). This is particularly relevant in a rural context, where integrating women, especially young women, is crucial for reversing the population decline and sustaining local communities. The problem of depopulation in the rural areas of this province is troubling, and there is even the risk that many small villages could disappear. All of this highlights the urgency of promoting gender equality to thereby foster a more inclusive environment that is able to attract and retain talent and enhance the vitality of a community in such sparsely populated areas. The findings reveal that even within a framework in which GEPs are not mandated, nearly two-thirds of the surveyed companies reported having voluntarily adopted such plans and having applied gender equality measures, thereby indicating a proactive approach to gender equality and a commitment to the intangible benefits that such policies can yield (Meil et al., 2008). In addition, it should be noted that equality policies at enterprises where women and girls are empowered contribute to achieving Sustainable Development Goal 5 (SDG5) of the 2030 Agenda (United Nations, 2015).

The magnitude and direction of the estimated effects in the logistic regression analysis among the 141 firms from Teruel indicate that carrying out environmental practices is the factor most strongly associated with the voluntary implementation of an equality plan. Companies that carry out environmental practices have substantially higher odds of adopting such plans, with an odds ratio of 1.483. This suggests a significant relationship between corporate social responsibility (CSR) and gender equality initiatives. The results support the hypothesis that enterprises that are committed to environmental sustainability may be more inclined to adopt gender equality policies and may be more open to implementing structural changes to promote such policies, consequently reflecting an organizational culture that values both sustainability and equity. This echoes previous literature that emphasizes the interconnectedness between social and environmental responsibility (Temiz & Acar, 2023). In addition, these results are in line with those reached by other authors such as Ramstetter and Habersack (2020), Zelezny et al. (2000) and Konadu et al. (2022).

There is also a positive relationship between innovation and the adoption of gender equality plans by the analysed businesses, with an odds ratio of 1.282. This suggests that innovative businesses are more likely to recognize the importance of diversity and gender equality, which in turn would have an influence on a company's decision to voluntarily implement an equality plan. And this result is consistent with others that have previously confirmed the relationship between innovation and gender diversity (Flood, 2008; Miller & Triana, 2009). However, the significance of this factor is relatively low, indicating the need to further explore how innovation drives gender equality initiatives in rural contexts. Companies should have the objective of creating work environments that are more humanized, productive, higher quality and gender-balanced (Meil et al., 2008). Additionally, from a public policy point of view, policies should focus on creating more innovation-friendly environments, given that they not only boost competitiveness but also promote gender equality among local businesses. This would help avoid emigration by women to cities from rural areas with little population, given that in rural areas women face complex personal dilemmas that drive them to migrate, such as choosing between living with their families and neighbours in their towns or having a decent productive job, having greater access to essential services or having more leisure opportunities, not only for them but also for their offspring (Cobano-Delgado & Llorent-Bedmar, 2020).

On the other hand, even though gender equality efforts appear to be widespread among the analysed small rural enterprises, our results reveal that the voluntary implementation



of gender equality actions in this area are not necessarily linked to expected improvements in financial performance. In this regard, it is important to note the controversy surrounding the motives for undertaking CSR actions, which can range from a company's genuine commitment to society and gender equality to the pursuit of reputational benefits, social legitimization, compliance with societal norms and performance rewards (Deegan et al., 2000; Miras-Rodríguez et al., 2015). Even though prior studies provide support for the relationship between the voluntary implementation of social responsibility practices and improvements in the financial performance of an organization (Orlitzky et al., 2003), this does not seem to be the main reason for gender equality at the rural SMEs in our analysis. Rather, the commitment to gender equality seems to be driven more by a social mandate than by a directly utilitarian purpose. Therefore, this research highlights the significant role of gender equality plans as a mechanism for promoting sustainability in rural, depopulated regions like Teruel. The findings suggest that while environmental practices and innovation are positively associated with the adoption of GEPs, the underlying reasons for these initiatives are multifaceted. This result contributes to the ongoing debate about the motivations behind voluntary gender equality actions and underscores the need for further research into the specific dynamics of sparsely populated rural areas in the adoption of gender equality measures.

## 6 Conclusions

There is an emerging consensus that gender equality and the empowerment of women are important goals not only from a human rights perspective but also for achieving economic and social development in rural areas. This is because women are the driving force behind maintaining, preserving and developing such territories. Our study contributes to earlier literature on gender equality and rural development, while focusing on a sparsely populated area where boosting development is more important than ever. The research studies the voluntary application of gender equality plans by using a series of variables that characterize the businesses that adopt them without being obligated to do so. The study confirms previous research that suggests that the most socially responsible businesses, in terms of gender, are sensitive to the environment in sparsely populated rural areas (Esteban-Salvador et al., 2020).

As Duarte et al. (2021) indicate, in rural areas of Aragón, promoting female labour in the early stages of the professional careers of women and support for work-life balance can be vital for consolidating their long-term economic stability, which in turn fosters local development. In smaller municipalities, many women plan to remain in the future, thereby reinforcing the need for policies that enhance their professional opportunities and social well-being. Gender equality measures are therefore crucial for strengthening local economies and mitigating rural depopulation. Moreover, broader discussions on rural governance highlight the importance of inclusive decision-making processes, given that local participation enhances the legitimacy of national and international conservation goals (Svarstad et al., 2006). In addition, the lack of gender equality in local decision-making processes related to protected areas represents a democratic shortcoming (Svarstad et al., 2006). Gender diversity improves the ethical assessment of a business and contributes to its long-term sustainability, whereas gender inequality represents an obstacle to the sustainable development of an organization (Valls Martínez et al., 2020).

Despite their limited size, many SMEs report a clear commitment to gender equality. This suggests that implementing equality practices does not depend as much on the availability of financial resources as it does on the commitment of a company and its management team, and possibly on non-financial support and assistance from public consulting firms. The government's actions to encourage training for SMEs may have facilitated the implementation of equality plans by small rural enterprises. Article 49 of Organic Law 3/2007 states that "the Government shall establish promotion measures, especially aimed at SMEs, which shall include the necessary technical support" to encourage the voluntary adoption of equality plans. Policymakers and the persons responsible for equality policies at SMEs must recognize the importance of supporting gender equality policies and practices in rural territories. In fact, a few measures already exist: some companies that are not required by law to have equality plans nevertheless have them because these plans are a prerequisite or a valued criterion for obtaining public contracts or tenders.

In brief, this study sought to demonstrate the positive association between the voluntary implementation of gender equality practices and several organizational characteristics of SMEs in rural areas. We also attempted to clarify this relationship by showing internal and external measures. The results indicate that implementing a GEP is positively related to both the implementation of environmental practices and the implementation of innovation processes at small rural enterprises. To the best of the authors' knowledge, this is one of the first studies on this topic in a sparsely populated area. We therefore hope that this analysis will stimulate future empirical research on this underdeveloped topic. Further research into these dynamics is essential to understanding how rural enterprises can effectively integrate gender equality into their strategies, thereby ultimately contributing to community resilience in the face of depopulation challenges.

Furthermore, subsequent studies could address some of the limitations of this article. For example, future research could complement the associations identified between variables in the logistic regression analysis by using qualitative methods to explore the motivations and barriers that companies face when adopting equality plans. Expanding the dataset to include a more representative sample, such as by including other unpopulated regions in Europe, could also allow for a more generalized examination of the relationships. Subsequent studies could also gather more information by using qualitative research through in-depth interviews with business owners who are in charge of implementing gender equality plans, thereby overcoming potential bias through the triangulation of different methods and sources of data. Other studies could also analyse the legislation of other countries, particularly regarding workforce size thresholds for the mandatory implementation of equality plans or regarding the indicators that must be developed, or they could analyse how businesses in unpopulated areas behave. Moreover, future research could examine the potential implications of the COVID-19 crisis on inclusion and diversity within these organizations. Finally, any mistakes made in previous crises must not be repeated, wherefore it must be ensured that gender-sensitive policies and actions, such as collecting sex-disaggregated data or promoting policies that support an equitable distribution of gender roles (del Río Lozano & García Calvente, 2020), are integrated into recovery strategies.

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## Declarations

**Conflicts of interest** The authors declare that the article is their own work and that no direct or indirect conflicts of interest relating to the research, authorship, funding or publication of this article exist.

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