

DEVELOPMENT AND PRELIMINARY PSYCHOMETRIC PROPERTIES OF THE GENDER EQUALITY PERCEPTION SCALE FOR UNIVERSITIES (G.E.P.S.U.)

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Introduction

In recent decades, policies have been implemented in Europe to promote gender equality in higher education and in academic research. Although there has been some progress, as reflected in an increase in female academic staff at all levels, a situation of stagnation can be noted. The European Commission's "She figures 2021" report (European Commission, 2021) states that the presence of women is closely balanced at the lowest levels of higher education, with 47.1% of women in grade D, but it is still low at the highest level, being 26.2% in grade A. Likewise, in decision-making positions only 23.6% of heads of higher education institutions are women, and they are less successful than men in accessing research funding. In Spain, according to the last report by *Cientificas en cifras 2021* (Altamirano, 2021), only one in four professors are women, and the percentage of female vice-chancellors, deans, department and institute directors is 42%, 35%, 25%, and 23%, respectively. In the context of research, the report indicates that women have lower success rates in the evaluation of sexennial research and in the call for R+D projects, for which they receive proportionally less funding than their male homologues. These data highlight that universities as well as businesses also need bold and committed equality policies to continue advancing towards real equity.

The Spanish Organic Law 3/2007 for the effective equality of women and men contemplates Gender Equality Plans (GEPs) as a tool for companies and organizations to achieve this end. More recently, important advances have been made through two royal decrees that provide clearer and more detailed regulations on the minimum content that should be addressed in GEPs (Royal Decree 6/2019 of urgent measures to guarantee equal treatment and opportunities between women and men in employment and occupations; and the Royal Decree 901/2020, whereby GEPs and their registration are regulated).

Since the Law 3/2007, the implementation of GEPs in academia has been gradual and today 94% of public universities and 70% of private universities have had a GEP in force since 2020 (Altamirano, 2021). Nevertheless, more than 10 years later, the plans have been reported to lack effectiveness since the gender gap still persists in university structures. According to Pastor et al. (2020), GEPs are inadequate as regards the elements that ensure their effectiveness, such as: monitoring and evaluation of the implementation of actions; the inclusion of a schedule for execution and monitoring; the designation of university units or services committed to their fulfilment; and the approval of an adequate budget. These authors attribute these shortcomings to an insufficient institutional commitment to gender equality, which is reflected in the lack of resources and the powers of equality bodies within university structures.

One of the major concerns in any GEP is the initial diagnosis of the situation, which provides the basis for designing and implementing actions to reduce inequalities. The diagnosis is made considering the following areas as determined by the Organic Law 3/2007: selection and recruitment process; professional classification; training; professional promotion; employment conditions; conciliation of work, family and personal life; under-representation of women; earnings; prevention of sexual and gender-based harassment. Gender permeates all these areas, which are influenced by sociocultural and organizational discrimination factors. These are the factors that society internalises; what we think, value and feel as a result of living within a context of historical discrimination against women and an education based on stereotypes and gender roles. They are reproduced and passed on from one generation to the next, which is reflected in the fact that it is mostly women who continue to take on care responsibilities. These are seen as social expectations that women feel they must respond to, which means a physical overload and significant psychological effort for them (Ion et al., 2013). This situation conditions their possibilities of selection and promotion, which ultimately leads to their being unavailable to occupy higher positions and being able to take on more responsibilities, resulting in lower earnings (Jabbaz et al., 2019). This contrasts with the social expectation of men in a similar family situation, who are expected to achieve promotion with even greater commitment, since they have a family to maintain. Moreover, the strongly masculinized organizational culture that characterizes universities, which still persists, favours female under-representation in the highest posts. It has been demonstrated that women who have wanted to take on positions dominated by men have traditionally come up against strong opposition in a work culture (García de León, 2002) from which women are excluded (Bagilhole, 2006). All this leads to their being discouraged from participating

in the institution (Rebollo et al, 2011). According to Ely and Meyerson (2000), the failure of organisations to change prevailing work practices is due in part to the narrow conception of gender traditionally used to define and address problems, that don't recognize gender as a system of oppressive relations reproduced in and by social practices. In addition, the invisible and masculinized social networks of power, also known as "implicit networks of masculine power" (Gallego-Morón & Matus-López, 2018), give rise to systems that promote peers or those close to the decision-makers (mostly men) and bring into question the effectiveness of the meritocratic system (Sales, 2009).

A GEP diagnosis is mainly developed through secondary and objective data provided by the various university administration services. Complementary to this, a staff survey is carried out to better identify the problems in order to be able to focus on and gain a deeper insight into them. It should be noted that the staff's opinion on the equality or inequality they perceive in their workplace is of high importance. According to Fraser et al. (2015), in order to legitimate gender inequality, it is essential to first acknowledge it, and to do so one needs to be aware of it. In this sense, Matus-López and Gallego-Morón (2015) emphasise that the lack of awareness about this problem is an obstacle to success in obtaining equality policies or measures in universities. What is more, one of the current threats to the struggle for equality in the workplace is the false sensation of equality in today's society, making it difficult to detect sexism, and consequently its eradication (Axpe et al., 2020). In the same line, Skewes et al. (2019) demonstrates that perceived gender discrimination and attitudes to gender equality policy are positively related, so employees who are likely to be blind to sexism are contributing to its existence in the organization.

There are studies on perceived equality in society in general, the most relevant of these being the Scale of Modern Sexism (Swim et al., 1995) and Support for Discriminatory Practices Scale (Morton et al., 2009), as well as scales to assess gender equality specifically in labour contexts (Axpe et al, 2020). However, there have been few studies on perceived equality in university labour environments, and some of these use a qualitative methodology (Ion et al., 2013). The use of scales in universities has been limited to studies of perceived equality on general aspects (Etura et al., 2019) or very specific topics such as glass ceiling (Matus-López and Gallego-Morón, 2015). Currently, there is no scale available for assessing perceived equality of university staff that covers the areas that should be included in a GEP diagnosis. Moreover, the literature points out a need for adequate and periodical monitoring of the state of inequalities to measure

the impact, effects, and consequences of the implemented actions of the plan, which is one of the major weaknesses detected in GEPs in Spain (Pastor et al., 2020). Hence, this article includes two phases: 1) to develop a questionnaire for equality as perceived by staff in a university labour context so as to improve the situation diagnosis and GEP follow-ups; and 2) to explore its preliminary psychometric properties and describe how reliable the scale is and whether it is a valid tool for implementing GEPs in universities. In this respect, this scale could be a very useful tool for diagnosing the previous situation so as to apply equality actions and monitor the changes perceived as a result of the GEPs implemented in universities. In addition, this scale would make it possible to verify the impact of GEPs and the importance of the different structural changes and equality actions carried out by the universities through the perception that the staff have about these changes.

Material and Methods

Phase I: Development of the Gender Equality Perception Scale for Universities (GEPSU)

This scale was designed to assess perceived equality between women and men in university settings. The construction of the questionnaire was based on the test development guidelines by the International Test Commission (ITC, 2017) and compliance with them as proposed by Hernández et al. (2020). The steps are summarized as follows: 1) selection of a group of experts and compilation of data from reviews, 2) adjustment for target population and context, 3) collection of evidence on item content, adequate formats or rating scale and test instructions as well as testing feasibility, and finally, 4) design of the questionnaire format, administration instructions, items and response type. A summary of these four phases are shown in Figure 1.

(Insert Figure 1)

In the initial step, a group was formed of women researchers from the gender studies centre of the university where the study is being carried out who all have expertise in gender studies and experience and training in GEPs. Their task was to develop a scale for assessing the perception of equality between women and men in the university work context. To do so, the literature and the relevant legal documents were reviewed so as to identify the main aspects to be included. The expert group decided to follow the structure of the areas included in the law for the diagnosis of GEPs: selection and recruitment process; professional classification; training; professional promotion; employment conditions; conciliation of work, family and personal life; under-representation of women; earnings; prevention of sexual and gender-based harassment.

In the second step, each researcher individually provided a list of possible items that should indicate both equality and inequality to be included in each of the areas. In accordance with the literature, the design of the questions or items has considered both the gender factors that may have an influence - pregnancy, being a mother or a father, being a man or a woman -, and the different consequences that certain actions or events may have on women and men, such as less professional development or greater stress due to difficulties in reconciling work life with family or personal life (Ely and Meyerson, 2000; García, 2002; Bagilhole, 2006; Sales, 2009; Gallego-Morón & Matus-López, 2018 among others)

All the items provided were analysed by the discussion group, by sending the documents prepared and holding several meetings via meet for their evaluation and subsequent selection of items, until a consensus was reached on the content and classification area. Next, we asked experts from other university gender studies centres to evaluate the relevance and quality of the items. A preliminary proposal of item content, formats or rating scale, and instructions were described in a homogenous document with 39 items corresponding to the specific areas, and an additional item to assess global equality perception between women and men.

The third step consisted of a feasibility study through an interview to evaluate the comprehension and adequacy of the test and items, the difficulties in completing it, and the response time used, following the recommendations by Iraossi (2006). According to what the literature suggests for assessing clarity of instructions, item wording, acceptability of formatting, and easy administration, a sample of ten or fewer may sufficient (Hertzog, 2008). Five women and five men from Research and Teaching Staff (RTS, n=4),

Administration and Services Staff (ASS, n=4) and Research Staff (RS, n=2) participated in this consultation. The group of experts analysed the results and adjusted or eliminated items that caused confusion or were difficult to understand. Four items were too specific for women or men with children or caring for someone, and they did not cover the complexity of all aspects involved in the conciliation area. Therefore, they were removed to ensure that the scale and the conciliation area could be applied to a broader range of people with different ages, family models, or circumstances that could affect conciliation. Finally, the expert group considered that three items should be reassigned as global questionnaire measures. One of them was related to the degree of awareness and importance given to sexist behaviour at work and the other two items focused more on equality actions that should be implemented in the University context (the need to acquire knowledge about gender equality and use of inclusive language). The four Equality Global Items and the 32 items of the initial GEPSU are shown in Tables 1 and 2.

The fourth step consisted of designing the definitive test instructions, questionnaire format and rating scale correction for inverse items. Thus, the GEPSU and the equality global items were designed to answer how far the subjects agree or disagree with each of the assertions on a Likert response scale.

(Insert Table 1)

(Insert Table 2)

Phase II: Preliminary Psychometric properties of the GEPSU

This study was carried out at a Spanish Public University, with a staff of 2,063: 1,190 were Research and Teaching Staff (RTS), 574 Administration and Services Staff (ASS), and 299 corresponded to Research Staff (RS). All the directors of departments, research centres, research institutes, and all services at the university under study were contacted by email. They were informed about this research and asked to distribute the questionnaire among staff, so female and male employees could participate voluntarily and anonymously through Google Form survey. This study is part of a larger project assessed by ethical committee of Miguel Hernández University (Reference: DTA.AMO.01.20)

Participants

A total of 270 people under contract answered the Google Form survey. Most of the sample were women (n=161; 59.6%) and the rest were men (n=109; 40.4%). Interviewees' age ranged from a high percentage (65.6%) of employees between 36 and 55 (n=87), 12.5% between 25 and 35 (n=32), 20% between 56 and 64 (n=54), and 1.9% were over 65 (n=6). Interviewees' employment included a high percentage (64.4%) who had been working at the university for more than 10 years (n=174), 14.4% for between 5 and 9 years (n=39), and 21.1% for less than 5 years (n=57). Staff categories included 132 RTS (48.9%), 117, ASS (43.3%), and 21 RS (7.8%). Slightly more than half the sample (52.2%) were civil servants (n=141), 13% had an indefinite employment contract (n=35) and 34.8% had a temporary contract (n=94). Lastly, with respect to employment status, the majority (86.3%) worked full time (n=233) and 13.7% worked part time (n=37).

Measures

- We collected information of *Sociodemographic and Employment Characteristics*: sex, age, years working at the University, staff category (RTS, ASS, RS), type of contract (civil servant, indefinite or temporary), employment status (full time and part time),
- *Equality Perception between women and men*: Participants answered the four Gender Equality Global Items in a University work setting (Table 1) and the 32 items of Gender Equality Perception Scale for Universities (GEPSU) on a Likert scale ranging between 0 (Totally disagree) to 10 (Totally agree). Higher scores in the questionnaire indicate more equality perception. Therefore, items that indicate inequality were calculated inversely to obtain the area score or total score of the questionnaire.

Data Analysis

We performed an Exploratory Factor Analysis (EFA) (Extraction method: Principal Component; Rotation: Varimax). We also established these criteria: KMO > 0.70 (Kaiser, 1974), Bartlett's test of sphericity with a value of $p < 0.05$ (Bartlett, 1950), and factor loadings with item values ≥ 0.40 (Williams et al., 2010) taking into account the theoretical sense of items for factor assignment. In addition, we

considered the scores of item-test correlation ≥ 0.20 to analyse the homogeneity of items (Frías-Navarro & Soler, 2020). The analyses of the scale's internal consistency (Cronbach's alpha and McDonald's Omega) are presented with a criterion of 0.70, which is universally used (Nunnally & Bernstein, 1994). Preliminary Kolmogorov-Smirnov (K-S) analysis was conducted to test normality distribution of samples and Wilcoxon Signed Rank was used as an alternative to paired sample t-test for differences and Spearman's rho for correlations. Interpretation of the effect size values for non-parametric differences were: small effect size (0.10), medium effect size (0.30), and large effect size (0.50) (Rosenthal, 1991). According to Schmidt & Finan (2018) a Linear Regression Analysis (Enter method) was performed testing for Multicollinearity (VIFs < 10 ; Kutner et al., 2004) to determine which of the scale items predict a global perception of equality between men and woman and some equality actions to improve it. All data were analysed using IBM SPSS Statistics v25.

Results

We tested an exploration of the dimensional structure or construct validity of the GEPSU through EFA and internal consistency. In addition, discriminant and criterion validity was verified for the gender equality global items of perception and actions in University work settings according to the ITC guidelines (2017) and the reviewed literature (Ramada-Rodilla et al., 2013; Hernández et al., 2020, COSMIN, 2023).

Construct Validity and Reliability

We were not able to reproduce the exact theoretical structure of the subscales according to the areas defined in GEPs in Spain. The results of the preliminary EFA without specifying the number of factors showed seven factors with an adequate fit index (KMO= .90 and Bartlett's significance $< .001$) and total Explained Variance (EV) of 67%. Moreover, according to Hair et al. (1995) and Pett et al. (2003), EV criteria indicated a cumulative percentage of 40% choosing three factors and interpretation of the graphical screen plot coincided with a 3-factor result (Cattell, 1995; 1978) (Figure 2). We performed an EFA with three-factor extraction, and KMO increased to .91 and Bartlett's significance was .000. Four items (7, 17, 21 and 31) did not load more than .40 in any factor. These items were removed and an EFA was conducted without them with satisfactory results for the three factors (KMO: .92; Bartlett's significance: .000 and EV:

56.1%). Therefore, the final GEPSU included 28 items. Items with load $\geq .40$ were assigned to more than one factor following a theoretical criterion (Table 3).

(Insert Figure 2)

(Insert Table 3)

The three factors are related to Labour Equality (Factor 1), Conciliation (Factor 2) and Motherhood/Fatherhood (Factor 3). We found high correlations between the three factors ($r > .69$; $p < .001$) and the results for their internal consistency were optimal. Cronbach's α and McDonald's ω were $\geq .80$ for the three factors. (Table 4).

(Insert Table 4)

Discriminant and Criterion Validity

We tested discriminant validity to determine how far the scale distinguishes different characteristics between groups, in this case women and men, in their perception of equality (Carvajal et al., 2011). We found the majority of items showed significant differences between women and men, indicating greater inequality perceived by women (Table 5). In Factor 1, men showed more disagreement with items of inequality related to *type of task assigned* (item 6; $U = 6058$, $p < .001$), *positions of free designation* (item 23; $U = 5482$, $p < .001$) or *having experienced sexist behaviour* (item 29; $U = 6792$, $p < .001$). On the other hand, men showed more agreement with items about *equal possibilities for promotion* (item 8; $U = 5808$, $p < .001$), *opportunities and options to earn the same* (item 24; $U = 6064$, $p < .001$) and even with the contemplation of some *needs for women in occupational health* (item 15; $U = 6520$, $p < .001$). In addition, most of these items revealed a medium effect size index for differences between groups ($Rbis > .30$).

In Factor 2, women showed more agreement with items focusing on *difficulties for women with children in their professional development* (item 14; $U = 5694$, $p < .001$), their *labour conciliation with family or personal life* (item 18; $U = 6004$, $p < .001$), the *stress produced by efforts made to conciliate work and family life* (item 19; $U = 5848$, $p < .001$) and difficulties in *putting themselves forward for positions of responsibility* (item 22; $U = 5005$, $p < .001$) showing a medium effect size of differences (Range $Rbis$: .32

to .43). Finally, in Factor 3 women also showed more agreement with the items, *maternity interferes with access to employment* (item 3; $U = 6722, p \leq .001$), *women with children have more difficulties in developing their professional career* (item 12; $U: 6592; p \leq .001$) and *being pregnant or a mother interferes with professional promotion* (item 9; $U = 6774$; item 10 $U = 6451; p \leq .001$).

(Insert Table 5)

As part of criterion validity, we analysed the prediction of GEPSU Factors (Labour Equality, Conciliation and Motherhood-Fatherhood) with respect to global items of Equality Perception and Actions. All global items of Equality showed a mean score of more than 6 for agreement (0-Totally disagree; 10-Totally agree). For items such as *where I work there is equality between women and men* and *any sexist behaviour is relevant*, the mean scores were 7.87 (sd=2.50) and 8.60 (sd=2.36), respectively. For the other two items focusing the on equality, actions *we should receive training on equality and gender perspective* and *we should use inclusive language in our tasks*, mean scores were 7.43 (sd=3.09) and 6.33 (sd=3.47), respectively.

On the other hand, the results of the Regression Analysis showed that F1: Labour Equality positively predicted the following item of Equality Perception: *In the University where I work there is equality between women and men* ($\beta=.69; t=11.76; p < .001$) with an EV of 55 %. In addition, F1 also negatively predicted the following global items about Equality Actions: *We should receive training on equality and gender perspective in our work context* ($\beta=-.36; t=-4.36; p < .001$); and *We should use inclusive language in our work tasks* ($\beta=-.32; t=-3.85; p < .001$). Finally, F2: Conciliation was a positive predictor of the Equality Perception global item *Any sexist behaviour is relevant* ($\beta=.67; t=4.97; p < .001$). (Table 6).

(Insert Table 6)

Discussion

The subject of this study has been of increasing interest since the enactment of the Spanish Organic Law 3/2007 for effective equality between women and men, which provided a legal framework for the

actions developed in Spain and the GEPs contemplated as tools for companies and organizations, including universities. This framework formed the basis of this paper, which focuses on the construction of a questionnaire to assess equality perception between women and men in a University setting (GEPSU) and to explore its preliminary psychometric properties. In the first phase, we followed the ITC guidelines (2017) and the steps described in the literature reviewed (Ramada-Rodilla et al., 2013; Hernández et al., 2020) to establish an adequate procedure for drawing up the questionnaire. This firstly entailed the development of the questionnaire by expert researchers, who then tested the data for suitability in a previous feasibility study, which ensured content and face validity of the scale. The feasibility of the scale was tested by ten participants who were asked to do the questionnaire. They reported that the questionnaire and items were understandable, there were no difficulties in completing it, and they expressed an interest in this equality measure being applied to a work setting.

The second phase addressed the psychometric properties and, specifically, construct validity. In this sense, the EFA showed three coherent factors representative of combined areas included in the Organic Law 3/2007 for the diagnosis of GEPs. One of these factors reflects most of the main and general aspects related to perception of equality between women and men in a university labour context (Factor 1; 13 items). The majority of representative items correspond to the theoretical areas of GEPs such as earnings, professional classification or prevention of sexual and gender-based harassment. The second factor shows how professional development is affected by work demands compared to other external circumstances or personal responsibilities (Factor 2; 7 items) and finally, a specific factor focuses on motherhood or fatherhood in a work setting (Factor 3; 8 items). Factor 2 was represented basically by items from the conciliation area of GEPs, and Factor 3 was formed by items about how opportunities of professional promotion and selection, or recruitment can be affected or interfered with by motherhood or fatherhood. Some items from the latter factor, referring to maternity, also coherently showed a high load in another factor (conciliation and or labour equality). Although their assignment was determined by the meaning of the content, these items could emphasize women's role conflict (inter-role) in carrying out work and maternal roles at the same time (Pedersen & Kilzer, 2014; Molina, 2021; Weibert, 2022).

Correlations between the different factors of the scale were also calculated as a part of the validity and reliability tests (Carvajal et al., 2011). The three factors showed high correlations between them, especially

Factor 1 (Labour Equality) with Factor 2 (Conciliation) and Factor 2 with Factor 3 (Motherhood/Fatherhood). These relationships highlight the possibility of mixed loading for some of the previously mentioned items as well as coherence between factors where the correlation between Motherhood/Fatherhood and Conciliation reached higher scores than the correlation between Motherhood/Fatherhood and Labour Equality. In line with Cohen's conventions on effect sizes (Cohen, 1988), an indicator of strong similarity in joint variability was considered if this was $> .50$, indicating convergent validity between subscales. The high correlation and convergence between factors confirm the strength of the scale's construct, which could suggest the possibility of using the scale's total score as an index of Equality Perception. However, at the same time, the optimal internal consistency ($\geq .80$) of each factor separately supports the multidimensionality measurement of the scale. In addition, these results for construct validity are consistent with similar studies, since the complexity and relationships between equality items could support mixed classification and shared content between different factors (Axpe et al., 2020).

The scale's Discriminant Validity demonstrates its usefulness by showing the differences in perceived equality between sexes. These were especially noticeable since men manifested less inequality or more equality than women in practically all the items. Undoubtedly, social context, feminist theories, and empirical literature have brought to light these differences in perception, and the inequality and discrimination suffered by women has already been demonstrated. This reality can explain why our sample of women are more aware of, concerned about, and also detect them in their own workplace. The results of this study coincide with those obtained by Matus-López & Gallego-Morón (2015), whose study concludes that in academia women perceive the glass ceiling as well as the barrier from having children more intensely, while men recognise this reality less. In addition, another study carried out by Etura et al. (2019) also showed that women were more sensitized and involved in equality issues and perceived greater labour discrimination than their male colleagues.

Finally, the regression analysis represents a way to test part of criterion validity, we analysed the prediction of GEPSU factors with respect to some global items related to Equality Perception and Actions. Although these items cannot be considered as single indicators of all the factors together in a multidimensional scale, the GEPSU has been related to global items of equality perception, sexism behaviours or equality actions in a coherent way. In general, the global items of Equality Perception at work

showed higher mean scores in agreements (> 7.8) than the need for Equality Actions (> 6.3). So, the perception of higher labour equality assessed through specific actions (FI) shows also higher general perceived equality between men and women in their workplace at the University, and a lesser need for training on gender perspective or using inclusive language. In contrast, more perceived conciliation was related to more awareness about the importance of taking into account any sexist behaviour. These results could indicate that equality perception at work, and not the structural variables of equality, is related to beliefs about the unnecessary implementation of equality strategies or actions. However, different studies and reports show that structural inequalities continue to exist in the university environment. For instance, there are differences between men and women in the professional classification of University staff, gender bias in career promotion and training or positions as lead researchers in projects, which are mainly occupied by men (Sánchez et al, 2011; Diaz et al., 2015; Pastor et al., 2020). For these reasons and with respect to these results, it is important to remember that when the perception or cognitive beliefs about the lack of equality between women and men are “normalized”, it is more usual to have an “illusion” of equality perception or even that it has already been achieved (Etura et al., 2019, Axpe et al., 2020).

Limitations and Future Research

The first limitation of this study is related to the sample composition and selection. This was a non-probability convenience sample, with a non-representative group of research staff and from only one public university. It would be interesting to explore other public and private universities and different groups from a different range of ages or staff, among other relevant sociodemographic characteristics or personal circumstances (beliefs, values or ideologies). Likewise, scale efficacy will depend on the results from future studies, which will corroborate its construct validity by confirmatory analysis of dimensions or factors of the scale as well as its convergent or divergent validity through associations to other constructs that are expected to be related or not. Future research and results will lead us to analyse the applicability of items in wider samples, to review or modify their formulations in a more parsimonious and direct way or to include new items according to the changes in the implementation of gender equality plans. In this sense, for instance, all aspects involved in the conciliation area (personal, family, care of children or dependent

adults, main caregivers) and the complexity of its relationships with equality perception and other structural variables at work should be explored in depth.

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Tables and figures

Figure 1: Steps to GEPSU development.

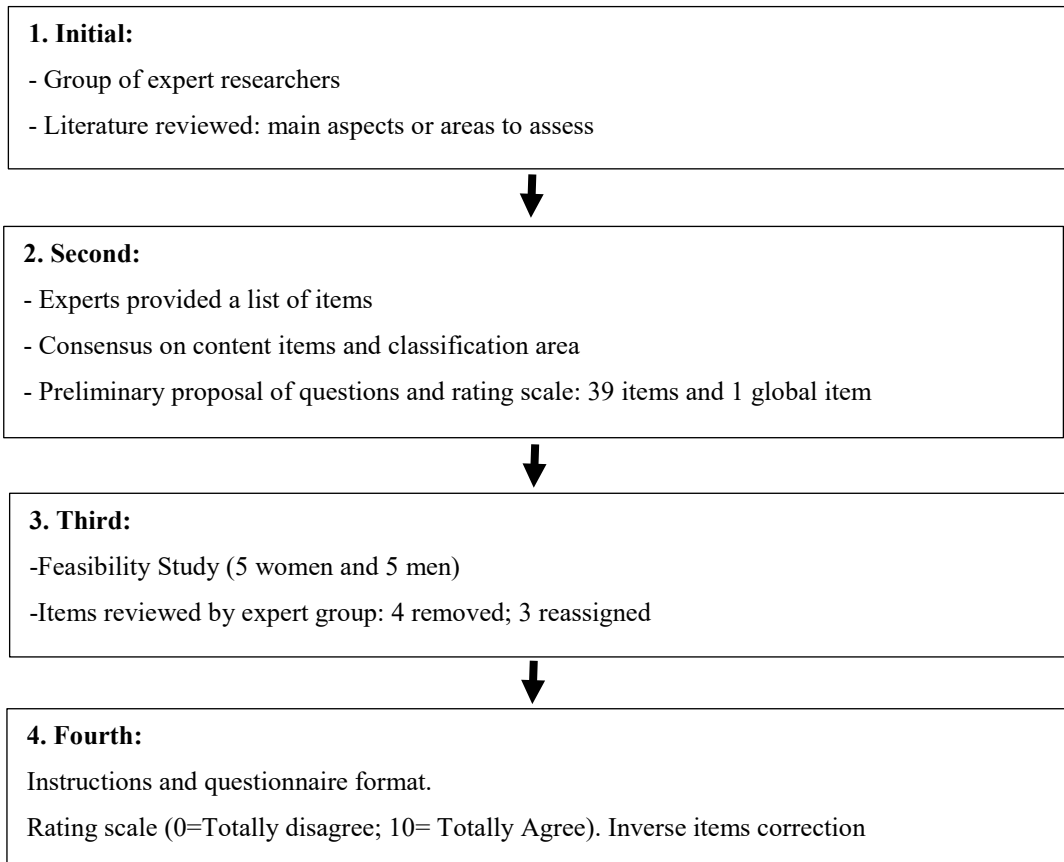


Table 1: Gender Equality Global Items in a University work setting.

Meaning of the items	N°	
Equality Perception	1	Where I work there is equality between women and men.
	2	Any sexist behaviour is relevant.
Equality Actions	3	We should receive training on equality and gender perspective.
	4	We should use inclusive language in our tasks.

Table 2: Items of the initial Gender Equality Perception Scale for Universities (GEPSU).

Area	N°	
Selection and recruitment	1	I believe that whether you are a man or a woman influences the selection or recruitment process in my organization.
	2	In my organization, I think that being pregnant can interfere with a woman's access to employment.
	3	In my organization, I think that being a mother interferes with a woman's access to employment.
	4	In my organization, I consider that being a father interferes with a man's access to employment.
Professional Classification	5	In my organization, I believe that in general being a woman or a man conditions whether you are offered more or fewer opportunities for professional development.
	6	In general, I think that in my job being a man or a woman conditions the tasks you are assigned.
Training	7	I consider that inclusive language is integrated in my organization's internal and external communications.
Professional promotion	8	It seems to me that the possibilities of promotion in my work environment are equal for men and for women.
	9	In my organization, I believe that a pregnancy interferes with a woman's employment promotion.
	10	In my organization, being a mother interferes with women's employment promotion.
	11	In my organization, being a father interferes with a man's employment promotion.
	12	In my organization, I believe that professional career development is more complicated for women with children than for women without children.
	13	In my organization I think that professional career development is more complicated for men with children than for men without children.
	14	In my organization, I believe that professional career development is more complicated for women with children than for men with children.
Working conditions	15	In my organization, I consider that occupational health and risk prevention contemplate the specific needs of women.
	16	In my opinion, my organization respects staff's working rights with respect to digital disconnection and enjoyment of free time.
	17	I believe that my organization creates problems for enjoying any leave of absence applied for
Conciliation	18	It seems to me that my professional development has been affected by difficulties in reconciling my work life with my family or personal life.
	19	I consider the effort to reconcile my personal, family and working life is an important source of stress for me.
	20	I believe that my organization offers many facilities for conciliation.
Under-representation of women	21	At some time, I would like or would have liked to hold a position of responsibility or to form part of the management teams.
	22	I think that women have more difficulties than men in putting themselves forward for positions of responsibility.
	23	I believe men are usually chosen more than women for positions of free designation in my organization (heads of services/ supervisor/ assistant),
Earnings	24	It seems to me that in my organization, men and women have the same opportunities and options to earn the same.
	25	I would say that men earn more in my organization because they have more salary supplements than women.
	26	I feel that my being a man/woman affects the salary supplements I could have/perceive.
	27	My personal situation affects or has affected the salary supplements that I earn.
Sexual and/or gender-based harassment	28	During the last 10 years, I have been aware of or experienced machoistic behaviours from someone who is hierarchically superior to me.
	29	During the last 10 years, I have been aware of or experienced machoistic behaviours from a colleague.
	30	I have been aware of, experienced or witnessed some type of harassment in my organization.
	31	In my organization, I would know how to act according to harassment protocol.
	32	If I were to experience or become aware of any situation of sexist harassment, I would inform my institution.

Figure 2: Graphical screen plot of Factors

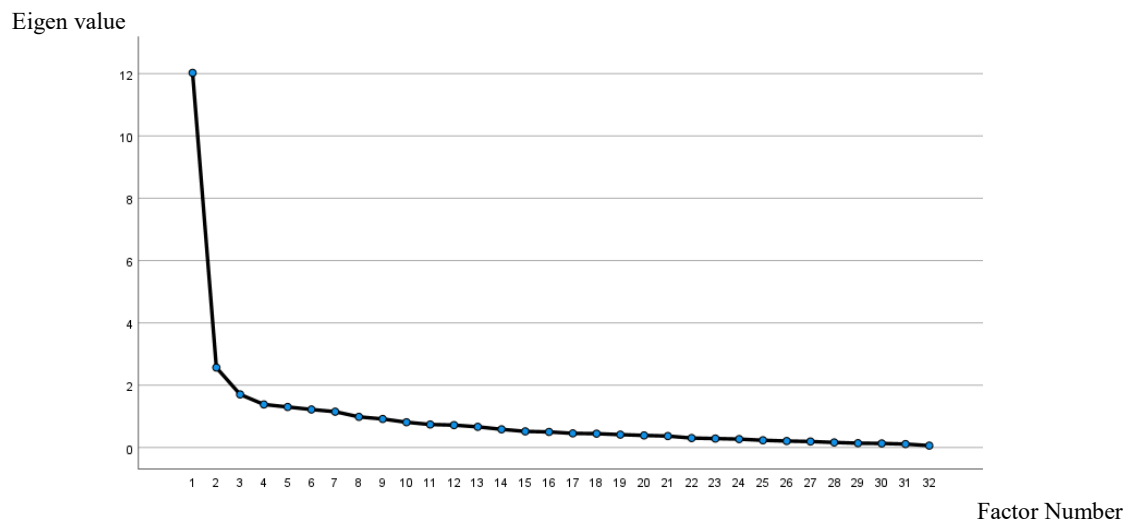


Table 3: Construct Validity of the final Gender Equality Perception Scale for Universities (GEPSU).

N°	ITEM	Factor	Factor	Factor
		1	2	3
		V%	V%	V%
		27.9	17.2	11.0
5*	In my organization, I believe that in general being a woman or a man conditions whether you are offered more or fewer opportunities for professional development.	.744		
6*	In general, I think that in my job being a man or a woman conditions the tasks you are assigned.	.766		
26*	I feel that my being a man/woman affects the salary supplements I could have/perceive.	.698		
25*	I would say that men earn more in my organization because they have more salary supplements than women.	.621		
24	It seems to me that in my organization, men and women have the same opportunities and options to earn the same.	.706		
8	It seems to me that the possibilities of promotion in my work environment are equal for men and for women.	.668		
15	In my organization, I consider that occupational health and risk prevention contemplate the specific needs of women.	.473		
1*	I believe that whether you are a man or a woman influences the selection or recruitment process in my organization.	.650		
29*	During the last 10 years, I have been aware of or experienced machoistic behaviours from a colleague.	.734		
28*	During the last 10 years, I have been aware of or experienced machoistic behaviours from someone who is hierarchically superior to me.	.766		
30*	I have been aware of, experienced or witnessed some type of harassment in my organization.	.606		
32	If I were to experience or become aware of any situation of sexist harassment, I would inform my institution.	.445		
23*	I believe men are usually chosen more than women for positions of free designation in my organization (heads of services/ supervisor/ assistant).	.662	.401	
27*	My personal situation affects or has affected the salary supplements that I earn.	.490	.432	
22*	I think that women have more difficulties than men in putting themselves forward for positions of responsibility.	.409	.604	
20	I believe that my organization offers many facilities for conciliation.	.428	.498	
14*	In my organization, I believe that professional career development is more complicated for women with children than for men children.		.682	
16	In my opinion, my organization respects staff's working rights with respect to digital disconnection and enjoyment of free time.		.455	
19*	I consider the effort to reconcile my personal, family and working life is an important source of stress for me.		.750	
18*	It seems to me that my professional development has been affected by difficulties in reconciling my work life with my family or personal life.		.764	
12*	In my organization, I believe that professional career development is more complicated for women with children than for women without children.		.749	.472
10*	In my organization, being a mother interferes with women's employment promotion.	.516	.503	.482
9*	In my organization, I believe that a pregnancy interferes with a woman's employment promotion.	.469	.505	.480
3*	In my organization, I think that being a mother interferes with a woman's access to employment.	.596		.505
2*	In my organization, I think that being pregnant can interfere with a woman's access to employment.	.559		.476
11*	In my organization, being a father interferes with a man's employment promotion.			.800
4*	In my organization, I consider that being a father interferes with a man's access to employment.			.793
13*	In my organization, I think that professional career development is more complicated for men with children than for men without children.			.609

(*) inverse item; V%: percentage of variance; Total Explained Variance: 56.1%

Table 4: GEPSU: Reliability and Factor's Correlation.

	Cronbach's α	McDonald's ω	r (p)	r (p)
Factor 1: Labour Equality	.909	.911	Factor 1 (p)	Factor 3 (p)
Factor 2: Conciliation	.826	.823	.70 (< .001)	.69 (< .001)
Factor 3: Motherhood/Fatherhood	.874	.879	.61 (< .001)	

r: Spearman correlation value; p= significance level

Table 5: Discriminant Validity. Differences between women and men in final GEPSU.

N°	Factor 1: Labour Equality ITEM	Women M (sd)	Men M (sd)	U (p)	Rbis
1	I believe that whether you are a man or a woman influences the selection or recruitment process in my organization.	2.98 (3.26)	2.17 (3.16)	6897 (.002)	.21
5	In my organization, I believe that in general being a woman or a man conditions whether you are offered more or fewer opportunities for professional development.	3.55 (3.30)	2.34 (3.23)	6601 (<.001)	.25
6	In general, I think that in my job being a man or a woman conditions the tasks you are assigned.	2.89 (3.23)	1.44 (2.55)	6058 (<.001)	.31
8	It seems to me that the possibilities of promotion in my work environment are equal for men and for women.	6.93 (3.17)	8.29 (2.85)	5808 (<.001)	.34
15	In my organization, I consider that occupational health and risk prevention contemplate the specific needs of women.	5.54 (3.03)	6.76 (2.65)	6520 (<.001)	.23
23	I believe men are usually chosen more than women for positions of free designation in my organization (heads of services/ supervisor/ assistant).	5.12 (3.45)	2.89 (3.27)	5482 (<.001)	.38
24	It seems to me that in my organization, men and women have the same opportunities and options to earn the same.	7,34 (2.93)	8.45 (2.71)	6064 (<.001)	.31
25	I would say that men earn more in my organization because they have more salary supplements than women.	3.37 (3.31)	1.84 (2.73)	6175(<.001)	.29
26	I feel that my being a man/woman affects the salary supplements I could have/perceive.	3.04 (3,23)	1.56 (2.58)	6173 (<.001)	.29
28	During the last 10 years, I have been aware of or experienced machoistic behaviours from someone who is hierarchically superior to me.	4.27 (3.85)	2.41 (3.43)	6140 (<.001)	.23
29	During the last 10 years, I have been aware of or experienced machoistic behaviours from a colleague.	4.29 (3.95)	2.85 (3.53)	6792 (<.001)	.30
30	I have been aware of, experienced or witnessed some type of harassment in my organization.	3.71 (3.95)	2.42 (3.54)	7316 (.024)	.17
32	If I were to experience or become aware of any situation of sexist harassment, I would inform my institution.	7.91 (2.70)	8.90 (2.22)	6454 (<.001)	.27
Factor 2: Conciliation					
14	In my organization, I believe that professional career development is more complicated for women with children than for men children.	6.02 (3.66)	3.65 (3.79)	5694(<.001)	.35
16	In my organization, I believe that professional career development is more complicated for women with children than for men children.	5.54 (3.20)	6.94 (3.12)	7397 (.027)	.16
18	It seems to me that my professional development has been affected by difficulties in reconciling my work life with my family or personal life.	6.16 (3.71)	3.32 (3.40)	6004(<.001)	.32
19	I consider the effort to reconcile my personal, family and working life is an important source of stress for me.	6.90 (3.34)	4.91 (3.49)	5848(<.001)	.33
20	I believe that my organization offers many facilities for conciliation.	6.13 (2.93)	6.98 (2.66)	7294 (.018)	.17
22	I think that women have more difficulties than men in putting themselves forward for positions of responsibility.	6.43 (3.48)	3.55 (3.62)	5005(<.001)	.43
27	My personal situation affects or has affected the salary supplements that I earn.	3.37 (3.39)	1.85 (2.80)	6216(<.001)	.29
Factor 3: Motherhood-Fatherhood					
2	In my organization, I think that being pregnant can interfere with a woman's access to employment.	3.33 (3.46)	2.98 (3.49)	8000 (0.28)	.08
3	In my organization, I think that being a mother interferes with a woman's access to employment.	3.52 (3.52)	2.55 (3.28)	6722 (.001)	.23
4	In my organization, I consider that being a father interferes with a man's access to employment.	1.35 (1.91)	2.51(2.51)	8664 (.85)	.01
9	In my organization, I believe that a pregnancy interferes with a woman's employment promotion.	4.51 (3.65)	3.25 (3.59)	6774 (.001)	.23
10	In my organization, being a mother interferes with women's employment promotion.	4.31 (3.62)	2.86 (3.52)	6451 (.001)	.27
11	In my organization, being a father interferes with a man's employment promotion.	1.27 (1.67)	1.75 (2.68)	8377 (.75)	.02

12	In my organization, I believe that professional career development is more complicated for women with children than for women without children.	6.24 (3.55)	4.56 (3.97)	6592 (.001)	.25
13	In my organization I think that professional career development is more complicated for men with children than for men without children.	2.53 (2.85)	3.60 (3.61)	7578 (.05)	.14

Note: For a better understanding of the measure, the means of each group are expressed even though a nonparametric rank analysis has been performed. M: mean; sd: standard deviation; U= Wilcoxon value; p= significance level; *Rbis*: effect size; rank-biserial correlation.

Table 6: Criterion Validity of final GEPSU

Equality Perception				
<i>In the University where I work there is equality between women and men</i>				
F1: Labour Equality	R²	B	t	P
	.56	.69	11.76	< .001
% E.V.:55; F= 108 (p<.001) VIFs < 2.3				
<i>Any sexist behaviour is relevant</i>				
F2: Conciliation				
	.42	.67	4.97	< .001
% E.V.: 39; F= 18.3 (p < .001); VIFs< 2.4				
Equality Actions				
<i>We should receive training on equality and gender perspective in our work context</i>				
F1: Labour Equality				
	.12	-.36	-4.36	< .001
% E.V. 11; F=12.1 (p< .001); VIFs< 2.				
<i>We should use inclusive language in our work tasks</i>				
F1: Labour Equality				
	.10	-.32	-3.85	< .001
%E.V.:9; F= 9.65 (p< .001); VIFs< 2.3				

E.V.: Explained Variance based in adjusted R²; VIFs=Variance Inflation factors; B= Beta estimate; p= significance level