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Testing the Obstacles to Women's Entrepreneurship Scale (TOWES): Adaptation and Validation of the TOP WOMAN Scale

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Women continue to face gender-related barriers in both accessing leadership positions and becoming entrepreneurs. For this reason, the present study focuses specifically on women in order to adapt the Testing the Obstacles to Promotion of Women to Management (TOP WOMAN) scale (Ramos et al., 2022), originally designed to measure perceived barriers to access to promotion, and to validate this adapted version – Testing the Obstacles to Women's Entrepreneurship Scale (TOWES) – in the context of entrepreneurship, using a sample of 281 Spanish women. The TOWES presents adequate psychometric properties, comprising the following six-factor structure: Motivational/Internal Barriers, Barriers related to Work-family Balance, Gender Stereotypes, Access to Influential Networks, Unequal Opportunities, and Business Culture. The six dimensions showed adequate reliability and construct, concurrent, convergent, and discriminant validity. Unlike the original scale, which consists of seven dimensions, in TOWES the barriers of Unequal Performance Appraisal and Unequal HR Practices are merged into just one. These findings support the validity and theoretical robustness of the adapted scale across different contexts. Moreover, they provide valuable insights for improving campaigns and training programs, identifying barriers to entrepreneurship among women in a specific population, developing objectives for raising awareness among female entrepreneurs, and providing job guidance for women.

Key words: entrepreneurship, gender, barriers, entrepreneurial intention

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Introduction

Women continue to face persistent discrimination in the workplace, despite significant progress toward gender equality. Although women generally do not have the same opportunities as men in accessing the labor market, the greatest challenges arise when advancing to leadership positions. Metaphors such as "glass ceiling" (Ragins et al., 1998) and the "labyrinth" (Eagly & Carli, 2007) remain relevant today, illustrating the complex barriers to women's access to top management positions. Similarly, the paradigm of "Think Manager – Think Male" continues to reflect the attribution of gender stereotypes to managerial roles (Koenig et al., 2011).

Entrepreneurship can be considered a positive career opportunity for women, offering an alternative to the barriers they face in traditional employment. However, despite its potential to provide greater autonomy and flexibility, women still encounter more obstacles than men when starting and sustaining their own businesses. The "Think Entrepreneur – Think Male" paradigm (Gupta et al., 2009; Laguia et al., 2019) also explains the gendered attribution of characteristics associated with entrepreneurship, similar to managerial roles.

While extensive research has explored the barriers preventing women from reaching top positions, studies focusing on the challenges of female entrepreneurship remain comparatively scarce. Entrepreneurship, like leadership, involves mobilizing resources, influencing others, navigating uncertainty, and enacting vision-driven behaviors – core elements that overlap significantly with many leadership frameworks (e.g., Renko et al., 2015). Research has increasingly highlighted that entrepreneurial success is strongly associated with leadership-like competencies (Walsh & Martin, 2023). The domains of entrepreneurship and leadership converge theoretically in multiple areas; however, entrepreneurship, as a comparatively younger field, stands to benefit from the more established body of leadership research (Cogliser & Brigham, 2004). Thus, adapting existing leadership and management instruments for entrepreneurial research allows scholars to build on established and validated measures while maintaining conceptual continuity. Nevertheless, it is essential to empirically test the adapted scale's validity and reliability in the entrepreneurial context. This includes conducting confirmatory factor analyses and assessing construct validity, to ensure that the adapted items capture entrepreneurial-specific expressions of the underlying constructs, which is the main objective of our manuscript. Therefore, this paper aims to validate an analytical framework originally designed to assess barriers to management and adapt it to the context of women's entrepreneurship. To do so, we focus specifically on women, not to evaluate the experiences of those who are currently entrepreneurs, but rather to examine the perceived barriers that may influence their likelihood of pursuing entrepreneurship.

Gender Discrimination in the Labor Market

Gender discrimination is still present in the labor market in general. In the European Union (Eurostat, 2024) the employment rate was higher for men (76%) than for women (66%), and 29% of employed women worked part-time, compared with 8% of men in 2021. Furthermore, only around a third (35%) of managers in the European Union were women. Particularly in Spain (Eurostat, 2024), where the present study was conducted, the employment rate was higher for men (70.7%) than for women (60.2%) in 2021; 23.1% of employed women worked part-time (6.7% of men); the unemployment rate was 16.8% for

women and 13.2% for men; and women represented 33% of managers.

In entrepreneurship, the trend follows the same pattern, with significant gender-based differences. As Laguía et al. (2022) noted, women's entrepreneurial activity rates are generally lower than men's in most regions. For example, Europe has the lowest rates of female participation in entrepreneurial activities, entrepreneurial intentions, and investment (Elam et al., 2019). Particularly in Spain, women (4.8%) had lower early-stage entrepreneurial activity than men (5.6%) in 2020 (Neira et al., 2021). There are twice as many self-employed men as women (Afi, 2024). In 2023, 7.5% of Spanish men engaged in entrepreneurial activities compared to only 6.1% of women. This gap is even more pronounced in innovative entrepreneurship, where there are only 0.36 women for every man engaged in high-intensity innovation activities.

In light of both national and international statistics, women are disproportionately affected by gender-based barriers in leadership and entrepreneurship. Therefore, this research focuses specifically on women, aiming to generate more targeted and contextually relevant proposals to support their entrepreneurial engagement and facilitate structural changes that respond to their lived experiences, as promoted by the TOP WOMAN scale through identifying barriers to women's promotion access in organizations (Latorre et al., 2025; Ramos et al., 2022).

Gender Barriers to Women's Advancement and Entrepreneurship

As previously mentioned, the underrepresentation of women in leadership positions continues to highlight the "glass ceiling" (Ragins et al., 1998) and "labyrinth" (Eagly & Carli, 2007) metaphors, which are widely documented in academic research. Although numerous studies have analyzed the barriers to women's advancement to management positions, there is broad agreement on the taxonomy of the main gender barriers, which are commonly classified into seven categories.

Women's career preferences and development include barriers related to self-confidence, motivation, and expectations of success, although arguments about women's lack of competence are now obsolete (García-Retamero & López-Zafra, 2008; Miller Burke & Attridge, 2011). Women's motivation and self-confidence in entrepreneurship are also lower than men's as a consequence of gender stereotypes. Additionally, the lack of female entrepreneurial role models and limited access to professional networks of women entrepreneurs are barriers to women's business development. Consequently, the presence of female role models could counteract these effects by strengthening women's entrepreneurial intentions. This, in turn, could contribute to increasing the number of women entrepreneurs in the future (Laguia et al., 2022).

Stereotypes and gender roles are identified as one of the most significant barriers. According to the theory of gender role congruence (Eagly & Karau, 2002), leadership is perceived as a masculine trait, leading to negative evaluations of women in leadership roles simply because they are women. This stereotype reflects the well-known "Think Manager – Think Male" phenomenon (Schein, 1973; Schein et al., 1996), a research paradigm that remains relevant today (Koenig et al., 2011). Additionally, Colella et al. (2017) showed that while masculine traits such as competitiveness align with leadership stereotypes, feminine traits such as emotionality do not, leading to biased evaluations of female leaders. In this regard, gender stereotypes also constitute a barrier to women's entrepreneurship. Entrepreneurship is predominantly associated with masculine traits (Gupta & Fernández, 2009;

Laguia et al., 2019), reflecting broader gender stereotypes in leadership and management. These traits include decisiveness, confidence, and risk-taking, while relationship-oriented attributes, often considered feminine, tend to be undervalued in entrepreneurial contexts. Gender stereotypes not only influence the perceptions of entrepreneurs but also affect women's entrepreneurial intentions and motivations, discouraging them from starting businesses (Laguia et al., 2022).

With respect to social networks and mentoring, women are often excluded from critical professional networks and mentoring processes, which are essential to career advancement. The lack of women in top leadership positions limits mentorship opportunities and reinforces the cycle of gender disparity (Diehl & Dzubinski, 2016; Howe-Walsh & Turnbull, 2016).

Human resources policies and practices, such as recruitment, promotion, organizational schedules, training, and career development processes, often favor men, reducing equal opportunities for women in leadership positions. Moreover, women are not valued as much as men (Soleymanpour Omran et al., 2015).

Additionally, there exists an unequal performance evaluation since women are held to *higher competency standards* yet receive less recognition for their contributions (Diehl & Dzubinski, 2016).

Regarding organizational culture, many organizations maintain a patriarchal culture that favors masculine values like competitiveness while excluding traits associated with femininity, making it harder for women to advance.

Last, work-family balance remains a major barrier to women's career advancement (Diehl & Dzubinski, 2016; Howe-Walsh & Turnbull, 2016). Women continue to bear the majority of caregiving responsibilities, creating additional barriers to career progression and reinforcing stereotypes about their work commitment.

Grounded in these categories, the *TOP WOMAN: Testing the Obstacles to Promotion of Women to Management*, a validated scale of barriers to women's promotion developed by Ramos et al. (2022), was adapted to the context of entrepreneurship to measure gender barriers. The original TOP WOMAN scale comprises 33 items categorized into seven dimensions: 1) Motivational/Internal Barriers (two items related to women's motivation and personality traits), 2) Work-family Balance (five items address women's family responsibilities and their impact on career dedication and promotion), 3) Gender Stereotypes (ten items which capture stereotyped beliefs about women's suitability for management activities and how these beliefs discriminate against women), 4) Barriers to Accessing Influential Networks (five items regarding women's access to the organizational networks that provide valuable information and decision-making opportunities, as well as access to mentoring), 5) Unequal Performance Appraisal (four items measuring the higher scrutiny and greater requirements that women face compared to men to demonstrate their performance), 6) Unequal Human Resources Practices and Policies (four items related to policies and practices that create gender-based discrimination in training, promotion, remuneration, and performance appraisal), and 7) Organizational Culture (three items addressing how agentic characteristics of organizational culture, such as competitiveness, as well as communal aspects, may hinder or facilitate women's advancement). Based on this scale, this paper aims to adapt and validate a tool to measure perceptions of women about gender barriers to female entrepreneurship. For this purpose, we made slight modifications to some items and changes to others to adapt the wording to women's entrepreneurship, the target of the adapted questionnaire (see Table 1 for full list of adapted items in English and Spanish).

Furthermore, to add evidence of concurrent validity of the adapted scale, this study examines the relationships between these barriers and Entrepreneurial Intention and its three antecedents within the theory of planned behavior (TPB; Ajzen, 1991) – Attitudes towards Entrepreneurship, Subjective Norm, and Entrepreneurial Self-efficacy. Behavioral attitudes are shaped by individuals' beliefs about the outcomes of a particular behavior, such as the cost of performing the behavior (Haus et al., 2013). To the extent that these attributes or outcomes have a positive valuation, individuals develop favorable attitudes, whereas a negative valuation leads to unfavorable attitudes (Laguia et al., 2022). Subjective Norms refer to the probability that individuals or reference groups approve or disapprove of the performance of a certain behavior, which in the case of entrepreneurship is the perceived social pressure to engage in entrepreneurship or not. Entrepreneurial Self-efficacy reflects individuals' confidence in their ability to succeed as entrepreneurs. Strong Self-efficacy expectations determine the initiation of coping behaviors, effort invested, and persistence when obstacles arise. Thus, women who believe they have the necessary skills and competencies to become entrepreneurs will exhibit greater Entrepreneurial Intention and behavior. Therefore, we expect that higher perceived barriers will lead to more negative Attitudes towards Entrepreneurship, lower perceived social support, reduced Entrepreneurial Self-efficacy, and consequently, weaker Entrepreneurial Intentions.

Method

Participants

The sample comprised 281 women aged 18 to 74 years (M = 36; SD = 13.26) with diverse employment statuses. Among them, 45.5% worked in private organizations, 21.1% in public organizations, and 3.6% in NGOs or similar; additionally, 10% were unemployed, 17.6% were students, and 2.2% reported having multiple employment conditions. Regarding educational background, 56.6 % held a university degree or higher (Master's or Ph.D.), 14.2% had completed higher vocational training, 22.8% had a high school diploma, and 6.4% had only compulsory education. In terms of work experience, 87.5% had previous professional experience. However, only 9.6% of participants had experience in entrepreneurship. Participants were recruited using a combination of convenience sampling and exponential non-discriminative snowball sampling. The only eligibility criterion was being female and 18 years or older.

Instruments

The instrument to analyze gender barriers in entrepreneurship was an adaptation of the *TOP WOMAN: Testing the Obstacles to Promotion of Women to Management* scale (Ramos et al., 2022). The adaptation consisted of changing the references from the organizational context and leadership to the entrepreneurial context and the entrepreneurs (see Table 1 for full list of adapted items in English and Spanish). The specific instruction was "Please indicate the extent to which you agree with the following statements." A five-point Likert scale was used to measure the degree of agreement with each statement, ranging from 1 (*not at all agree*) to 5 (*totally agree*).

To measure Entrepreneurial Intention and its three antecedents, we used the *Entrepreneurial Intention Questionnaire* (EIQ) developed by Moriano (2005) and validated in multiple countries. This questionnaire is organized as follows: Entrepreneurial Intention

(four items; e.g., "How likely do you think you are to start your own business within the next five years?"), Attitudes toward Entrepreneurship (six items; e.g., "Creating jobs for other people"), Subjective Norms (three items; e.g., "My immediate family – parents and siblings"), Entrepreneurial Self-efficacy (nine items; e.g., "Persisting in your business despite adversity").

We controlled for several sociodemographic variables (age, education, completion of an entrepreneurship course, labor experience, and entrepreneurial experience).

Procedure

To validate the adapted entrepreneurship barriers scale for women, we performed a Confirmatory Factor Analysis (CFA). This approach allowed us to compare the model fit against alternative models. Specifically, we tested a one-factor model against a seven-factor model to determine which provided a better fit. CFA was performed with MPLUS 8.1 (Muthén & Muthén, 1998-2017). The weighted least squares mean and variance adjusted (WLSMV) estimation method was used, which is adequate for ordinal variables, even when they do not follow a normal distribution (Finney & DiStefano, 2006). To assess model fit, we considered the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean squared error of approximation (RMSEA). Traditionally, values above .90 for CFI and TLI and below .08 for RMSEA and SRMR indicate an acceptable model fit (Hu & Bentler, 1999). Following Steiger's recommendations (2000), 90% confidence intervals of RMSEA were reported. Differences in practical fit indices were interpreted by comparing changes in ΔTLI and ΔCFI; values below .01 indicate negligible practical differences (differences in TLI not larger than .05 are also considered negligible; Cheung & Rensvold, 2002). Chen (2007) suggested that an RMSEA increase of less than .015 supports the selection of a more parsimonious model. Additionally, the χ^2 difference was tested using the difftest procedure to compare the free one-dimensional model with the more constrained model. When the difference was significant, the more constrained model was preferred.

Once the factor structure was adapted and validated after several factor structure comparisons and items analyses (see Online Supplementary Material), we chose the factor structure illustrated in Table 1. Analysis of items was done by each dimension, calculating descriptive statistics, item-total correlations, and Cronbach's alpha if an item was deleted. Items that did not meet the criteria were considered for removal. According to Kumar and Beyerlein (1991), acceptable item-total correlations ranged from .55 to .81, and Cronbach's alpha was used as a reliability index. Specifically, if removing an item increased reliability, we considered eliminating it. Items with factor loadings greater than .70 were retained (Hair et al., 2010).

Furthermore, convergent validity was assessed with the Average Variance Extracted (AVE). The AVE value ranges from 0 to 1, and values above .50 indicate adequate convergent validity (Fornell & Larcker, 1981). Discriminant validity was evaluated using the Fornell and Larcker criterion, which compares the square root of the AVE to inter-factor correlations. Validity is supported if each AVE square root exceeds these correlations (Fornell & Larcker, 1981). To provide evidence of concurrent validity, we examined the partial correlations between scale dimensions and Entrepreneurial Intention, Entrepreneurial Self-efficacy, Subjective Norms, and Attitudes toward Entrepreneurship, controlling for sociodemographic variables.

Results

We performed three CFA models, eliminating items based on item analysis and factor loading criteria (see Online Supplementary Material). Additionally, we merged two closely related dimensions: Unequal Performance Appraisal Barrier and Unequal HR Practices Barrier, due to their high intercorrelation and conceptual overlap, thus yielding six dimensions (instead of the original seven). The final factorial structure was supported by CFA and item analysis. Model 1, representing a six-dimensional structure, demonstrated a good fit (χ^2 = 271.423, df = 155, p < .01; CFI = .988, TLI = .985, RMSEA = .052 90% CI[.041; .062], SRMR = .064). In contrast, Model 2, a one-dimensional structure, showed poor fit (χ^2 = 2109.278, df = 170, p < .01; CFI = .795, TLI = .770, RMSEA = .184 90% CI[.194; .209], SRMR = .184). The differences in fit indices were sub-

Table 1 *Final adaptation of TOP WOMAN scale to Testing the Obstacles to Women's Entrepreneurship Scale (TOWES): Item descriptive statistics, reliability, and factor loadings*

		M	*SD*	Item-total *r*	Alpha if item is deleted	Factor loadings	S.E.
F1	*Motivational/Internal Barriers* (α = .81)						
T1	Women are not very interested in starting new businesses. *Las mujeres no están muy interesadas en emprender nuevas empresas.*	1.34	0.79	.69	-	.88	0.04
T2	Women show less professional ambition than men. *Las mujeres muestran menos ambición profesional que los hombres.*	1.36	0.82	.69	-	.95	0.03
F2	*Work-family Balance* (α = .83)						
T5	Work-life balance is considered to affect women more than men. *Se considera que la conciliación afecta más a las mujeres que a los hombres.*	3.80	1.34	.62	.84	.79	0.04
T6	Maternity interrupts and delays women's opportunities for advancement. *La maternidad interrumpe y retrasa las oportunidades de promoción de las mujeres.*	3.64	1.36	.71	.75	.82	0.03
T7	Women's family responsibilities hinder their dedication and career progression. *Las responsabilidades familiares de las mujeres dificultan su dedicación y progresión laboral.*	3.30	1.43	.76	.70	.96	0.03

Table 1 continues

Table 1 continued

		M	*SD*	Item-total *r*	Alpha if item is deleted	Factor loadings	S.E.
F3	*Gender Stereotypes* (α = .72)						
T8	Women do not have enough experience to start new businesses*. Las mujeres no tienen suficiente experiencia para emprender nuevos negocios*.	1.27	0.72	.55	.64	.87	0.05
T12	Women are less suited than men to creating new companies*. Las mujeres son menos adecuadas que los hombres para crear nuevas empresas.*	1.11	0.44	.55	.68	.80	0.06
T14	Women find it harder to make decisions*. A las mujeres les cuesta más tomar decisiones.*	1.47	0.91	.50	.70	.70	0.06
T16	Women tolerate the pressure of entrepreneurship less than men. *Las mujeres toleran menos la presión del emprendimiento que los hombres.*	1.26	0.63	.57	.63	.76	0.05
F4	*Barriers to Accessing Influential Networks* (α = .70)						
T18	Women have less access than men to power groups. *Las mujeres tienen menor acceso que los hombres a los grupos de poder.*	3.70	1.36	.54	--	.80	0.04
T21	Power networks or groups are made up of men. *Las redes o grupos de poder están formadas por hombres.*	3.43	1.31	.54	--	.74	0.04
F5	*Unequal Opportunities* (α = .91)						
T23	Women are held to a higher standard than men. *A las mujeres se les exige más que a los hombres.*	3.48	1.40	.79	.90	.91	0.01
T24	Women are evaluated more stringently than men. *A las mujeres se les evalúa con mayor exigencia que a los hombres.*	3.59	1.36	.85	.89	.96	0.01
T25	Women have to prove their abilities more than men. *Las mujeres tienen que demostrar su capacidad más que los hombres.*	3.64	1.33	.79	.90	.90	0.01

Table 1 continues

Table 1 continued

		M	*SD*	Item-total *r*	Alpha if item is deleted	Factor loadings	S.E.
T27	Women receive less training for entrepreneurship than men. *Las mujeres reciben menos formación para el emprendimiento que los hombres.*	2.47	1.32	.65	.91	.74	0.03
T28	Performance evaluation takes into account aspects that benefit men over women. *La evaluación del desempeño tiene en cuenta aspectos que benefician a los hombres frente a las mujeres.*	2.94	1.31	.72	.90	.78	0.03
T29	Women have more difficulties than men in starting new businesses. *Las mujeres tienen más dificultades que los hombres para emprender nuevos negocios.*	2.98	1.46	.73	.90	.80	0.02
T30	Women earn less than men. *Las mujeres cobran menos que los hombres.*	3.60	1.36	.65	.91	.73	0.03
F6	*Business Culture* (α = .86)						
T31	Business culture favors aspects such as authority and control. *La cultura empresarial favorece aspectos como la autoridad y el control.*	3.81	1.12	.76	--	.92	0.04
T32	Business culture favors aspects such as competitiveness. *La cultura empresarial favorece aspectos como la competitividad.*	3.99	1.00	.76	--	.90	0.03

Note. All factor loadings are statistically significant ($p < .001$). *r* – correlation. α – Cronbach's alpha. S.E. – standard error.

stantial (ΔCFI = .193, ΔTLI = .215, ΔRMSEA = .135), and the chi-square difference test was statistically significant ($\chi^2 = 756.697$, df = 15, $p < .01$), supporting the adequacy of the six-dimensional structure in effectively representing barriers to women's entrepreneurship. Table 1 presents the factor loadings from the CFA, which ranged from .697 to .963 and were all statistically significant ($p < .001$).

Descriptive statistics are also reported in Table 1. Item-factor correlations (homogeneity index) and Cronbach's alpha if an item was deleted were examined for each factor. Item T14 narrowly missed the recommended cut-off (Hair et al., 2010), with a loading of .697; however, it was retained due to its theoretical relevance. All remaining items after deletion (see Online Supplementary Material) met the

established criteria for reliability, homogeneity, and factor loadings. Therefore, the scale differs from the original version in its structure (six dimensions instead of seven) and in the number of items (20 instead of 33). As it is a brief scale, TOWES is more parsimonious than TOP WOMAN. Furthermore, some items were modified since TOWES was specifically focused on the most relevant aspects of entrepreneurship.

Regarding convergent validity, the AVE exceeded .50 for all dimensions (ranging from .598 to .838). Discriminant validity was confirmed using Fornell and Larcker's criterion, showing that the squared root of the AVE for each dimension was higher than the correlations between dimensions (see the diagonal in Table 2). Following guidelines from the AERA, APA, NCME (2014), we examined the relationships between barriers and variables related to Entrepreneurial Intention, Attitudes toward Entrepreneurship, Subjective Norms, and Entrepreneurial Self-efficacy.

As expected, Attitudes toward Entrepreneurship was negative and significantly related to Internal Barriers and Stereotypes, but it was not significantly related to Work-life Balance, Networking, Unequal Opportunities, and Business Culture (Table 2). Subjective Norms were negative and significantly related to Internal Barriers and Gender Stereotypes but showed no significant relationship with barriers in Work-life Balance, Networking, Unequal Opportunities, and Business Culture. Entrepreneurial Self-efficacy was negatively and significantly related to Internal Barriers and Stereotypes, but not related to Work-life Balance, Networking, Unequal Opportunities, and Business Culture. Entrepreneurial Intention only showed a significant but weak relationship with women's barriers related to Networking.

Therefore, there is evidence of discriminant, convergent, and concurrent validity. Discriminant validity was evaluated using the Fornell and Larcker criterion, which compares the square root of the AVE to inter-factor correlations. Validity is supported if each AVE square root exceeds these correlations. We calculated AVE values up to .50, which assured enough convergent validity of each dimension. To provide evidence of concurrent validity, we related our measure to other variables that were positively and negatively related in previous research.

Discussion

Leadership and entrepreneurship have both traditionally been perceived as masculine occupations. Consequently, women face more difficulties than men in accessing managerial positions and engaging in entrepreneurial activities. Although entrepreneurship can be a valuable opportunity for labor market access and career development, self-employment rates among women remain low compared to salaried employment (Bosma et al., 2021). To analyze perceived barriers that could hinder women from becoming entrepreneurs and considering that the underlying barriers are similar to women's access to management (i.e., Stereotypes, Work-life Balance), the aim of this study was to adapt and validate the TOP WOMAN scale – originally designed by Ramos et al. (2022) to measure perceived barriers to women's access to management positions – to the context of entrepreneurship.

The Testing the Obstacles to Women's Entrepreneurship Scale (TOWES) shows adequate psychometric properties when the barriers of Unequal Performance Appraisal and Unequal HR Practices were merged, thus considering six dimensions instead of the original seven: Motivational/Internal Barriers, Work-family Balance Barriers, Gender Stereotypes, Access to Influential Networks, Unequal Opportunities, and Business Culture.

Table 2 *Descriptive statistics, reliability, Average Variance Extracted (AVE) and correlations between study variables*

	Mean	SD	RHO	AVE	1	2	3	4	5	6	7	8	9
1. Internal Barriers	1.35	0.74	.91	.84	*.92*								
2. Barriers of Work-life Balance	3.58	1.19	.89	.73	.12*	*.86*							
3. Gender Stereotypes	1.28	0.51	.86	.61	.57**	.07	*.78*						
4. Barriers of Networking	3.57	1.17	.75	.60	.06	.46**	.09	*.77*					
5. Barriers of Unequal Opportunities	3.24	1.11	.94	.64	.09	.39**	.12*	.61**	*.80*				
6. Barriers of Business Culture	3.90	1.00	.91	.83	-.04	.29**	-.07	.42**	.45**	*.91*			
7. Attitudes toward Entrepreneurship	2.86	1.03			-.23**	.07	-.19**	-.02	-.02	.08			
8. Subjective Norms	2.70	1.09			-.20**	.03	-.24**	-.07	-.09	.03	.33**		
9. Entrepreneurial Self-efficacy	3.33	0.83			-.14*	.02	-.16**	-.03	.04	.03	.53**	.26**	
10. Entrepreneurial Intention	2.34	1.19			.02	-.04	.06	-.15*	-.09	-.08	.42**	.19**	.36**

Note. The square root of the Average Variance Extracted (AVE) is shown in italics on the diagonal. Control variables: age, education, entrepreneurship course, labor experience, and entrepreneurial experience.
*$p < .05$, **$p < .01$.

Additionally, we examined the relationship between these barriers and Entrepreneurial Intention and its three proximal antecedents within the theory of planned behavior (TPB; Ajzen, 1991): Attitudes towards Entrepreneurship, Subjective Norms, and Entrepreneurial Self-efficacy. Internal Barriers and Gender Stereotypes were negatively related to Attitudes toward Entrepreneurship, Subjective Norms, and Entrepreneurial Self-efficacy, while Networking-related Barriers were negatively related to Entrepreneurial Intention. Theoretically, only the three proximal antecedents influence Intention by mediating the impact of other possible variables (Ajzen, 2011); thus, higher perceived barriers related to more negative Attitudes towards Entrepreneurship, lower perceived social support, and reduced Entrepreneurial Self-efficacy lead to a hypothesis of lower entrepreneurial intentions and behavior.

The TOP WOMAN scale adapted to entrepreneurship complements other measures, such as those designed to assess the "Think Entrepreneur – Think Male" stereotype (e.g., Laguia et al., 2019). By specifically addressing the barriers women may perceive when starting a business, this scale provides deeper insights into the challenges they face. This represents a crucial first step toward developing strategies to promote women's entrepreneurship.

Theoretical and Practical Implications

This study has both theoretical and practical implications. Among the theoretical implications, it should be noted that the confirmation of the appropriateness of the TOP WOMAN scale in the context of entrepreneurship supports the suitability of the theoretical model on which the TOP WOMAN scale was based and developed by Ramos et al. (2022) in the context of women's access to management positions. Perceived barriers to women's professional development affect how women perform in the labor context. And these barriers are present in both leadership and entrepreneurship, so entrepreneurship research can benefit from theoretical development in the field of leadership, which has a greater tradition and development. However, while the TOP WOMAN scale consists of seven dimensions, in the TOWES the barriers of Unequal Performance Appraisal and Unequal HR Practices are merged into just one, resulting in six dimensions.

In terms of practical implications, the availability of a specific scale measuring perceived barriers across the six dimensions considered can be useful for promoting women's entrepreneurship, both through awareness campaigns and by showing examples of successful women entrepreneurs as role models. It can also be useful for career guidance services and for evaluating the effectiveness of training programs and other initiatives to promote women's entrepreneurship. These initiatives should focus on barriers perceived by women to effectively address them.

Limitations

All studies have limitations, which is important to recognize since it opens new avenues for future research. First, this study employs a cross-sectional design, so it is not possible to determine predictive validity. Second, it is limited to a sample in Spain, so cross-cultural validations in other countries are recommended, as well as in other Spanish-speaking countries such as Latin America. Third, we have worked only with a sample of women, thus, it is necessary to validate it with a sample of men, whether they perceive that these barriers affect both women and men or to what extent they apply only to women. Furthermore, this sample size is relatively small. The use of con-

venience and exponential snowball sampling introduces potential limitations related to self-selection and social network homogeneity. Finally, we consider it necessary to work with samples of women and men entrepreneurs to deepen the knowledge in how they perceive these barriers, if they have been relevant in their entrepreneurship, and to determine good practices to overcome them successfully. Moreover, other organizational variables should be considered to assess concurrent validity, such as job satisfaction, subjective success, or organizational justice (Ramos et al., 2022).

Conclusions

Given the persistent disparities in women's access to entrepreneurship across many countries, it is crucial to further explore the barriers that may be hindering their professional development in this field. By identifying six specific barriers, derived from extensive research on leadership and gender, and analyzing their impact on women's Attitudes toward Entrepreneurship, perceived Subjective Norms, and Entrepreneurial Self-efficacy, this study adapts and validates the TOP WOMAN scale, providing a valid and reliable measurement tool – TOWES – with strong psychometric properties to assess the barriers perceived by women. In this way, this new scale allows for research to focus on the development of policies and initiatives to promote women's entrepreneurship.

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