

Patriarchal Beliefs Scale: Psychometric properties of the Portuguese version

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Abstract: Patriarchal beliefs convey the power discrepancy between men and women in society. The current study examines the psychometric properties for the Patriarchal Beliefs Scale (PBS) in the Portuguese context, including its construct and convergent validity, measurement invariance, and reliability. A sample of 488 adults (66.8% women) with ages ranging from 18 to 77 years old ($M = 27.6$ years, $SD = 11.8$) participated in this study. The results confirmed the original three-factorial structure of the PBS (Institutional power of men, Inherent inferiority of women, and Gendered domestic roles), the measurement invariance across gender, as well as convergent validity warranted by the positive and significant correlations between the patriarchal beliefs, social dominance, and sexism. Men significantly outscored women in all these dimensions. The current study provides evidence of the validity and reliability of the PBS in the Portuguese context, enabling further opportunities to implement cross-cultural studies in this field.

Keywords: Patriarchal beliefs; psychometrics; social dominance; sexism; gender.

Patriarchy can be defined as “a historical and social system of male domination in gender relationships in which men, who are of a higher status, dominate women, who are of a lower status, both structurally and ideologically” (Yoon et al., 2015, p. 264). Different definitions of patriarchy have been provided over the years. Still, they all convey the power discrepancy between men and women in society, with men being described as dominant and competent (Jahan, 2022), while entailing female subordination and oppression (Haj-Yahia, 2005; Hunnicutt, 2009; Mkhize & Njawala, 2016; Yoon et al., 2018).

Patriarchy seems to differ between cultural contexts depending on local social norms, i.e., cultural values and policies that support gender equality and female empowerment versus supporting traditional gender roles and male dominance (Ozaki & Otis, 2017). According to Hunnicutt (2009), the patriarchal system is embedded in the macro (e.g., government, law, religion) and micro (e.g., interactions, families, organisations, intimate relationships) levels of society, and they exist symbiotically. Yoon and colleagues (2015) also referred to the meso level (e.g., employment and education), reinforcing and portraying that the patriarchal system and its beliefs are embedded in all levels of society. The symbiotic relationship between the micro, meso, and macro levels entails that patriarchal views and practices carried out by social structures are sustained and perpetuated by individuals and their daily actions. Moreover, this is a reciprocal relationship in which individuals are more likely to maintain patriarchal views if their society and culture support them (Ogle & Batton, 2009). For instance, governments representing or endorsing patriarchal views and practices (i.e., macro level), such as holding more men in positions of power because they are considered more competent than women, may also mirror various family dynamics (i.e., micro level), where men are considered the leader and provider of the household, while women are the main caretakers. Finally, these family dynamics may also contribute to the imbalance between men and women in positions of power, mirroring family dynamics in other aspects of society (e.g., meso and macro levels).

Patriarchal beliefs are also related to other gender-related discrimination and abusive practices such as sexism (O’Neil, 2008) and violence against women (Espinoza et al., 2012; Haj-Yahia, 2003; Hunnicutt, 2009; Ozaki & Otis, 2017). These practices undermine women’s ability to ask for help and support when needed (Abu-Ras, 2007). Sexism is described as “the social, political, economic, and personal

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expression of patriarchy in women's and men's lives" (O'Neil, 2008, p. 367) and involves discriminatory attitudes and behaviours based on the biological sex of individuals (Matlin, 2012). Sexism seems to be rooted in patriarchy, given that it highlights men's overall superiority over women, who are perceived as needing men's help for support and protection (Mkhize & Njawala, 2016). Studies have consistently shown that sexist attitudes are endorsed differently according to gender, with men endorsing higher levels of sexist attitudes than women (Chim et al., 2020; Magalhães et al., 2007). Same gender differences have been found regarding patriarchal beliefs (Tripathi, 2020; Yoon et al., 2015; Yoon et al., 2018; Yoon et al., 2019). Endorsing stereotypical gender roles and patriarchal and sexist beliefs is more beneficial for men (higher-status group), given that maintaining such views may endure male dominance over women (low-status group) at different levels of society (i.e., micro, meso, and macro levels; Crittenden & Wright, 2013; Fowers & Fowers, 2010; Yoon et al., 2018).

Social Dominance Orientation (SDO) may also play an important role in the maintenance of patriarchal systems, beliefs, and sexism. SDO refers to the endorsement of hierarchical, non-egalitarian relationships between groups and a preference for dominance over others (Pratto et al., 1994). Thus, it is deeply rooted in the need to maintain social group hierarchy (Canto et al., 2020). Individuals with higher SDO scores may endorse myths and beliefs that support unequal societies, thereby maintaining that hierarchy and higher status (Canto et al., 2020). Sidanius and Pratto (1999) suggested that one of the three distinct stratification systems that organise human social hierarchies is a gender system characterised by male dominance and female subordination (i.e., patriarchy). Men tend to score higher on SDO than women (Canto et al., 2020; Graça et al., 2018; Magalhães et al., 2022), which may serve to maintain their dominant and high-status position, particularly in more unequal societies and contexts (Batalha et al., 2011). Previous literature has shown associations between SDO and the maintenance of traditional values and gender relations common in patriarchal societies (Sibley et al., 2007), as well as a significant relationship between SDO and patriarchal beliefs (Janjua & Kamal, 2023).

Sidanius and Pratto (1999) also argued that sexism is a type of group-based inequality that aligns with SDO (Sibley et al., 2007; Ymamgulyyeva et al., 2021). Studies have shown an association between these constructs, particularly between SDO and hostile sexism, which is characterised by the belief in women's inferiority and antipathy towards them (Canto et al., 2020; Fowers & Fowers, 2010). Previous authors have claimed that these results stem from SDO being a competitive-driven motivation for intergroup dominance, predicting negative attitudes toward low-status and subordinate groups (in this instance, women; Sibley et al., 2007). This may be particularly relevant when men perceive women as challenging their dominance, which may result in higher levels of hostile sexism (Sibley et al., 2007). Furthermore, sexism may function to maintain and legitimise men's structural power (Canto et al., 2020; Glick et al., 2000), thus perpetuating gender hierarchies and patriarchal societies (Fowers & Fowers, 2010).

Patriarchal beliefs justify and maintain a patriarchal system (McKinley et al., 2021; Yoon et al., 2015) and are prevalent across cultures in several settings (e.g., family context, schools, and religious institutions; Haj-Yahia, 2003; Yoon et al., 2019). Studies on patriarchal ideology and beliefs have been conducted with various samples across the world, such as Israel (Haj-Yahia, 2003), Jordan (Haj-Yahia, 2005), African and Asian immigrants in the USA (Yoon et al., 2019), or India (Tripathi, 2020), and comparing samples between Asian and European countries (Ozaki & Otis, 2017). However, further evidence is needed in the Portuguese context. Developing or adapting trustworthy and valid scales to specific cultural contexts is critical to provide cross-cultural innovative insights, which in turn can inform the implementation of social interventions aiming at decreasing patriarchal beliefs.

Current study

Historically, the Portuguese society could be described as influenced by patriarchal beliefs, given that only in the 20th century were women allowed to work for the State, and girls could enrol in male high schools. Portugal was under a dictatorial regime for 41 years (from 1933 to 1974), with several setbacks in women's rights and gender equality in Portuguese society. Currently, although gender equality is ensured by law and policies, important differences remain across areas of society, such as education and employment (e.g., there are more women than men with higher education degrees, but they still earn less money than men; Comissão para a Cidadania e a Igualdade de Género [CIG], 2024) and household labour division (Perista et al., 2016).

To address the need for validated measures and systematic research in the European context focused on patriarchal beliefs, including the Portuguese context, the current study aims to provide additional psychometric evidence for the Patriarchal Beliefs Scale. Specifically, we aim to offer validity (i.e., construct and convergent validity, measurement invariance across gender) and reliability evidence (Cronbach's alpha and McDonald's omega) for this scale, which might enable cross-cultural studies using a reliable and trustworthy measure. Based on previous evidence, patriarchal beliefs are expected to be

positively associated with social dominance and sexism. Also, male participants might score higher on patriarchal beliefs than female participants do.

METHOD

Participants

A total of 783 participants accessed the link to the current study. However, three participants did not agree to participate, and 292 did not complete the questionnaires necessary for this analysis (dropout rate 37.7%). As such, the sample in this study comprises 488 participants, 326 women (66.8%) and 162 men (33.2%), with ages ranging from 18 to 77 years old ($M = 27.6$ years, $SD = 11.8$). Regarding civil status, 404 respondents were single (82.8%), 60 were married (12.3%), and 24 were divorced (4.9%). Two hundred and forty-three were employed (49.8%), 216 were students (44.3%), 219 had completed secondary education (44.9%), and 185 had a bachelor's degree (37.9%).

Measures

The data included in this study were collected as part of a broader project involving a larger set of measures about socio-cognitive factors associated with sexual abuse myths (e.g., social dominance orientation, empathy, sexism, propensity to morally disengage) lasting around 15 minutes. For this study, in addition to socio-demographic data (e.g., age, gender, marital status, education, and employment status), we also considered data on patriarchal beliefs, sexism, and social dominance to achieve our study's aims.

Patriarchal Beliefs Scale. The Patriarchal Beliefs Scale (PBS; Yoon et al., 2015) is a 35-item self-report scale, answered using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (totally agree) and aiming to assess patriarchal beliefs, including social systems at a micro, meso, and macro level. The scale is organised into 3 factors: (F1) Institutional Power Of Men (12 items; $\alpha = .97$) focuses on measuring beliefs regarding male authority and leadership at both macro and meso levels (e.g., politics, financial and religious institutions, workforce) (e.g., *I am more comfortable with men running big corporations than women*); (F2) Inherent Inferiority of Women (12 items; $\alpha = .97$) measures individuals' views on female inferiority, subordination, and restriction/exclusion from various social roles with the majority of the items being macro- and meso-level focused (e.g., pay, employment, community involvement) (e.g., *Women do not belong in the workforce*); and (F3) Gendered Domestic Roles (11 items; $\alpha = .95$) focuses only on the micro-level measuring gendered family roles (i.e., men as breadwinners and decision-makers and women as caretakers for children and housework) (e.g., *A man is the head of the household*) (Yoon et al., 2015; Yoon et al., 2019). Higher scores indicate greater endorsement of patriarchal beliefs.

The Ambivalent Sexism Inventory. The Ambivalent Sexism Inventory (Portuguese version by Magalhães et al., 2007) aims to assess Hostile Sexism (e.g., "Women are too easily offended"; $\alpha = .82$) and Benevolent Sexism (e.g., "Many women have a quality of purity that few men possess"; $\alpha = .80$) through 22 items answered using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Satisfactory reliability evidence was also found in this study: Hostile Sexism ($\alpha = .78$) and Benevolent Sexism ($\alpha = .77$).

The Short Social Dominance Orientation Scale. The Short Social Dominance Orientation scale (Portuguese version by Magalhães et al., 2022) allows the assessment of individuals' tendency to endorse group-based hierarchy and their acceptance of the premise of superior groups dominating inferior groups. This scale contains four items (e.g., "Superior groups should dominate inferior groups"), answered using a seven-point Likert-type scale and ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) ($\alpha = .63$).

Data collection and analysis

This study is part of a larger project approved by the Ethical Committee of the Institute of Social Sciences of the University of Lisbon. First, permission was requested from the author of the original version of the PBS to translate and adapt this scale to the Portuguese context. Translation, back-translation, and expert review of the items (cf. Beaton et al., 2000) were performed. A researcher translated the items and then they were revised by three other independent researchers to solve differences and achieve a consensus version. This version was then back-translated by a bilingual speaker, and the back-translated version was compared to the original version, and a Portuguese version was achieved. Data collection was then performed through Qualtrics, and the link was distributed on social media (i.e., Facebook posts). As such, a non-probabilistic convenience sample was included in this study, considering the following inclusion criteria: (a) to understand the Portuguese language; and (b) to be at least 18 years old. Before filling out the questionnaires, the participants were informed about the study's conditions: it was voluntary,

confidential, and no other type of reward was provided. The informed consent form provided the contact details of the research team. It highlighted that participants could give up at any point and choose not to answer without providing any justification. Both general posts and the messaging feature inviting participants were used for data collection and data were collected in two periods (between March 2019 and August 2020 $n=613$; and between January and May 2023, $n = 170$).

After data collection, we first assessed item quality with a missing values analysis and descriptive analysis of items, including skewness and kurtosis, considering acceptable absolute values inferior to 3 and 8, respectively (Kline, 2005). We conducted a confirmatory factor analysis (CFA) using maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistics (i.e., MLM estimator in lavaan's sem function) to account for the lack of normal distribution within the scale items. The model fit was assessed using the chi-square statistics, the Root Mean Square of Approximation (RMSEA), with values below .10 considered mediocre and below .08 an adequate fit. The Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) were used to compare our model against a baseline independent model, with values above .90 considered an adequate fit (Weston & Gore, 2006). The correlation of errors in the model was determined by the presence of modification indices above 100 between the items of the same factor.

Internal consistency was evaluated considering both Cronbach's alpha and McDonald's omega, with values above .90 considered acceptable values (Kline, 2023). Invariance was measured using a multigroup CFA, a first model free of constraints (i.e., configural invariance), constraining equal loadings (i.e., metric invariance), intercepts (i.e., scalar invariance), and finally residuals (i.e., full invariance). Configural, metric, scalar, and full invariance were assessed using the chi-square test significance combined with changes in CFI and RMSEA. A significant chi-square and changes of CFI and RMSEA bigger than -.010 and .015, respectively, indicate non-invariance (Chen, 2007). An additional step was taken to evaluate the source of the lack of measurement invariance and the specific items that could contribute to this. We used differential item functioning (DIF) in a three-step process suggested by He & van de Vijver (2012). Firstly, we computed a total score for each of the three factors. Secondly, the score was divided into four groups, ranging from -1 to +1 SD. Lastly, a two-way ANOVA was used with sex and group as independent values and item score as the dependent variable, and this process was repeated for each of the three factors. The presence of both significant effects in sex and the interaction between sex and group was considered a sign of item bias. Descriptive statistics and differential item functioning (DIF) were conducted using RStudio 2022.07.02 (R Development Core Team, 2005). The following packages were employed: psych (Revelle, 2017), lavaan (Rosseel, 2012), and lavaanPlot (Lishinsk, 2022). Convergent validity was tested through correlations between patriarchal beliefs, social dominance orientation, and sexism.

RESULTS

Descriptive statistics

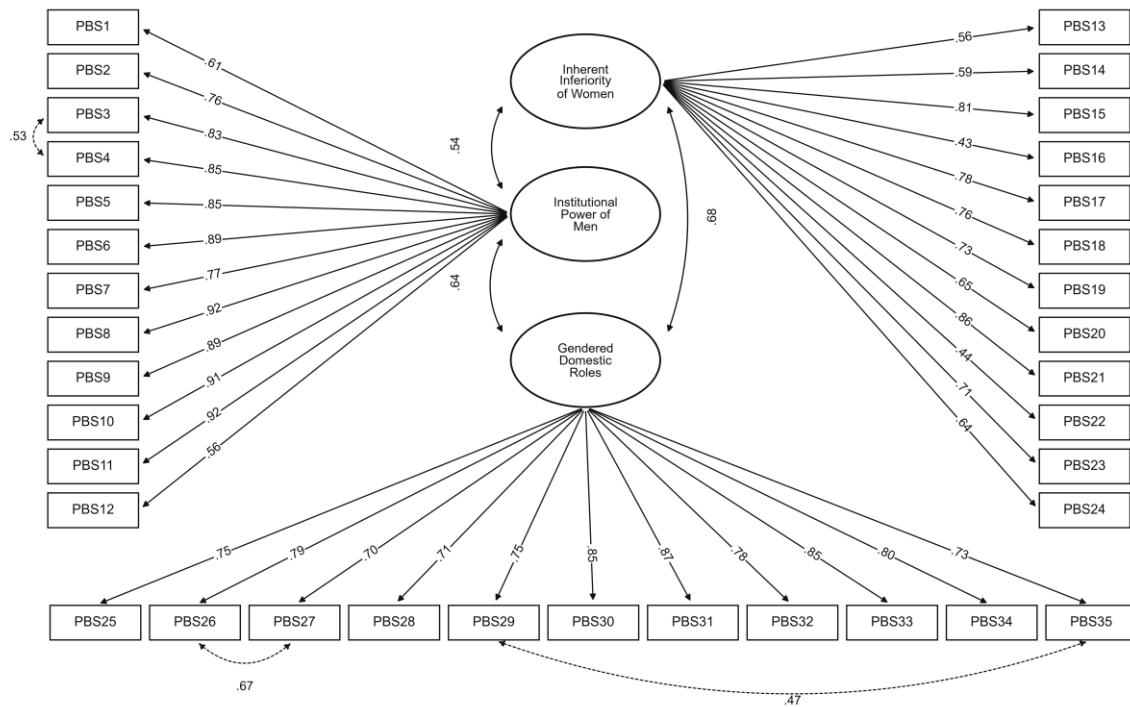
The descriptive statistics showed violations of normality, particularly in the items of factor 2, where kurtosis ranges from 11.43 to 66.45 and skewness from 3.28 to 7.65 (Table 1). This indicates a need to consider the data non-normal and to choose a robust estimator that takes this violation into consideration, in our case MLR (maximum likelihood robust).

Table 1. Descriptive Statistics

	N	Min	Max	Mean	Standard Deviation	Skewness	Kurtosis
PBS1	487	1	7	2.2	1.42	1.11	0.45
PBS2	488	1	7	2.0	1.31	1.30	0.86
PBS3	488	1	6	1.9	1.19	1.21	0.53
PBS4	488	1	6	2.0	1.22	1.26	0.66
PBS5	488	1	7	1.9	1.17	1.36	1.13
PBS6	488	1	7	1.9	1.17	1.41	1.35
PBS7	488	1	7	1.9	1.16	1.55	2.30
PBS8	488	1	6	1.8	1.03	1.49	1.52
PBS9	488	1	6	1.8	1.10	1.39	1.21
PBS10	488	1	6	1.8	1.11	1.41	1.24
PBS11	488	1	6	1.8	1.10	1.42	1.19
PBS12	488	1	7	2.1	1.31	1.16	0.57
PBS13	488	1	7	1.3	0.78	4.17	21.22
PBS14	488	1	7	1.3	0.70	4.53	25.59
PBS15	488	1	5	1.2	0.45	4.44	27.17
PBS16	488	1	7	1.1	0.59	7.65	66.45
PBS17	488	1	6	1.2	0.55	4.48	26.42
PBS18	488	1	7	1.3	0.72	4.31	22.48
PBS19	488	1	7	1.3	0.78	3.28	12.35
PBS20	487	1	6	1.3	0.69	3.39	13.08
PBS21	488	1	5	1.2	0.51	3.62	16.28
PBS22	488	1	7	1.4	1.07	3.69	13.64
PBS23	488	1	7	1.3	0.87	3.29	11.43
PBS24	488	1	6	1.1	0.49	5.73	39.08
PBS25	488	1	7	1.5	1.03	2.50	6.69
PBS26	488	1	7	1.4	0.85	3.56	14.64
PBS27	488	1	7	1.3	0.84	3.67	15.57
PBS28	488	1	7	1.6	1.02	2.19	4.82
PBS29	488	1	6	1.7	1.15	1.93	3.10
PBS30	488	1	7	1.6	1.04	2.30	5.29
PBS31	488	1	7	1.4	0.86	2.99	10.51
PBS32	488	1	7	1.9	1.57	1.81	2.23
PBS33	488	1	6	1.5	0.96	2.40	5.49
PBS34	488	1	6	1.5	1.04	2.40	5.50
PBS35	488	1	6	1.8	1.33	1.65	1.70

Confirmatory Factor Analysis

Considering the descriptive statistics, we selected an estimator for CFA that accounted for non-normal distributions. A first CFA reported fit indexes below the accepted thresholds, $\chi^2(557) = 1243$; $p < 0.001$, CFI = .88, TLI = .88, RMSEA = .076, 95% CI [.070, .082]. To improve the model fit, we added a correlation between errors based on the modification indices and theoretical criteria, namely, content similarity. The following items were correlated: 26 (“Cleaning is mostly a woman’s job”) and 27 (“Cooking is mostly a woman’s job”), (MI = 229); Item 3 (“I would feel more comfortable if a man was running the country’s finances”) and 4 (“I would feel more secure with a male president running the country than a female one”) (MI = 135), and items 29 (“A woman should be the one who does most of the child rearing”) and 35 (“A woman should be the primary caretaker for children”) (MI = 109). The second CFA showed a significantly improved model, $\chi^2(554) = 1021$; $p < 0.001$, CFI = .92, TLI = .92, RMSEA = .062, 95% CI [.056, .068]. A plot with the factorial structure, as well as the correlation added and the loadings are presented in Figure 1.



Note. *all loadings and correlations' significance level was <.001; Standard Errors: PBS2 - .07, PBS2 - .07, PBS3 - .08, PBS5 - .08, PBS6 - .08, PBS7 - .08, PBS8 - .08, PBS9 - .08, PBS10 - .08, PBS11 - .08, PBS12 - .07, PBS14 - .08, PBS15 - .11, PBS16 - .15, PBS17 - .17, PBS18 - .21, PBS19 - .17, PBS20 - .15, PBS21 - .12, PBS22 - .20, PBS23 - .18, PBS24 - .16, PBS26 - .089, PBS27 - .083. PBS28 - .097; PBS29 - .114, PBS30 - .104, PBS31 - .10, PBS32 - .13, PBS33 - .097, PBS34 - .11, PBS35 - .13

Figure 1. Factorial structure of the Patriarchy Beliefs Scale

Measurement invariance across gender

As seen in Table 2, the criteria for the significance of chi-square change supported only metric invariance, while both the CFI and RMSEA criteria indicated scalar invariance. Given that the chi-square criteria is overly sensitive to sample size, neglecting small changes in large sample sizes and non-normality (Chen, 2007), the alternative fit indexes were preferred in this analysis. Hence, we considered in this analysis to have achieved scalar invariance. This means that the PBS measures the same construct between men and women, and observed differences in means are not due to systematic errors, allowing us to interpret group mean contrasts (Kline, 2023).

Table 2. Confirmatory Factor Analysis

Model	χ^2	Df	CFI	RMSEA	$\Delta\chi^2$	p	Δ CFI	Δ RMSEA
Configural	3393	1108	.90	.068				
Metric	3489	1140	.90	.067	35.3	.32	-0.001	0.001
Scalar	3587	1172	.89	.069	421	<.001	-0.008	0.001
Residual	6388	1207	.75	.101	84.2	<.001	-0.14	0.032

Given the kurtosis violations and the expected gender differences in patriarchal beliefs, with men endorsing more sexist attitudes, we further assessed individual items' impact on invariance by analysing differential item functioning (DIF). Items that had both a significant gender and interaction effect were considered potentially problematic (Table 3). Several items revealed differences: in factor 1, items 9 and 10; in factor 2, items 13, 17, 18, 21, 22, 23, and 24; and in factor 3, items 26, 27, 31, 32, 33, and 34.

Table 3. Differential item functioning: gender effects and interactions

	Women <i>M (SD)</i>	Men <i>M (SD)</i>	Gender <i>EFFECT</i>	Gender and Group Interaction
PSB9	1.59 (.90)	2.31 (1.31)	$F(1, 481) = 8.77, p < .003, \eta^2 = .02$	$F(2, 481) = 6.97, p = .001, \eta^2 = .03$
PSB10	1.58 (.89)	2.32 (1.33)	$F(1, 481) = 9.60, p = .002, \eta^2 = .02$	$F(2, 481) = 5.07, p = .007, \eta^2 = .02$
PSB13	1.10 (.36)	1.65 (1.17)	$F(1, 481) = 32.01, p < .001, \eta^2 = .06$	$F(2, 481) = 16.5, p < .001, \eta^2 = .06$
PSB17	1.07 (.26)	1.41 (0.83)	$F(1, 481) = 6.74, p = .010, \eta^2 = .01$	$F(2, 481) = 3.15, p = .044, \eta^2 = .01$
PSB18	1.05 (.22)	1.64 (1.11)	$F(1, 481) = 48.68, p < .001, \eta^2 = .09$	$F(2, 481) = 15.90, p < .001, \eta^2 = .06$
PSB21	1.07 (.25)	1.41 (0.75)	$F(1, 481) = 10.53, p = .001, \eta^2 = .02$	$F(2, 481) = 5.43, p = .005, \eta^2 = .02$
PSB22	1.30 (1.03)	1.46 (1.14)	$F(1, 481) = 46.34, p < .001, \eta^2 = .09$	$F(2, 481) = 17.67, p < .001, \eta^2 = .07$
PSB23	1.09 (.33)	1.81 (1.31)	$F(1, 481) = 54.90, p < .001, \eta^2 = .10$	$F(2, 481) = 19.01, p < .001, \eta^2 = .07$
PSB24	1.03 (.18)	1.3 (0.79)	$F(1, 481) = 7.69, p = .006, \eta^2 = .02$	$F(2, 481) = 6.28, p = .002, \eta^2 = .03$
PSB26	1.16 (.51)	1.73 (1.21)	$F(1, 482) = 18.70, p < .001, \eta^2 = .04$	$F(2, 482) = 8.41, p < .001, \eta^2 = .03$
PSB27	1.15 (.47)	1.70 (1.22)	$F(1, 482) = 20.19, p < .001, \eta^2 = .04$	$F(2, 482) = 8.67, p < .001, \eta^2 = .04$
PSB31	1.21 (.59)	1.78 (1.15)	$F(1, 482) = 9.21, p = .003, \eta^2 = .02$	$F(2, 482) = 4.24, p = .012, \eta^2 = .02$
PSB32	1.51 (1.15)	2.72 (2.00)	$F(1, 482) = 9.39, p = .002, \eta^2 = .02$	$F(2, 482) = 5.01, p = .007, \eta^2 = .02$
PSB33	1.19 (.52)	2.04 (1.33)	$F(1, 482) = 69.00, p < .001, \eta^2 = .13$	$F(2, 482) = 23.67, p < .001, \eta^2 = .09$
PSB34	1.29 (.74)	1.98 (1.37)	$F(1, 482) = 13.87, p < .001, \eta^2 = .03$	$F(2, 482) = 12.25, p < .001, \eta^2 = .05$

Patriarchal beliefs, gender, social dominance, and sexism

All subscales of patriarchal beliefs, social dominance orientation, and sexism were positively and significantly correlated with each other: greater benevolent and hostile sexism and social dominance orientation were associated with greater patriarchal beliefs. Men significantly outscored women in all these subscales. Non-significant associations were found in participants' age for patriarchal beliefs; even older participants reported greater social dominance orientation (Table 4). Also, good and excellent reliability for the three factors: Institutional power of men, Inherent inferiority of women, and Gendered domestic roles (see Table 4's note).

Table 4. Intercorrelations between study variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. SDO	2.18	0.95	-						
2. BS	3.28	0.96	.245***	-					
3. HS	3.49	0.94	.248***	.640***	-				
4. IPM	1.93	0.98	.332***	.421***	.407***	-			
5. IIW	1.23	0.46	.314***	.253***	.246***	.519***	-		
6. GDR	1.55	0.85	.345***	.394***	.356***	.605***	.618***	-	
7. Gender	-	-	.202***	.195***	.215***	.307***	.382***	.380***	-
8. Age	27.60	11.75	.224***	-.006	.024	-.079	-.040	-.058	-.051

Note. *** $p < .001$; SDO= Social Dominance Orientation; BS= Benevolent Sexism; HS= Hostile Sexism; IPM= Institutional Power Of Men ($\alpha = .96$; $\omega = .96$); IIW= Inherent Inferiority of Women ($\alpha = .86$; $\omega = .89$); GDR= Gendered Domestic Roles ($\alpha = .94$; $\omega = .94$); Gender = female(0), male(1) - point-biserial correlation coefficients

DISCUSSION

This study aimed to provide evidence on the psychometric properties of the Portuguese version of the PBS (Yoon et al., 2015). These inherently unequal beliefs are linked with several forms of gender-based discrimination, such as sexism (O'Neil, 2008) and violence against women (e.g., Ozaki & Otis, 2017). Patriarchal beliefs are believed to be embedded at different levels of society (i.e., micro, meso, and macro levels) (Hunnicut, 2009; Yoon et al., 2015) and across countries (Ozaki & Otis, 2017). Therefore, it is important to adapt and validate reliable instruments to provide cumulative evidence on this topic in different cultures.

This study adapted the PBS (Yoon et al., 2015) to the Portuguese context and provided support for a three-factorial structure of this scale: *Institutional Power of Men*, *Inherent Inferiority of Women*, and

Gendered Domestic Roles. Normality assessment showed results similar to those of the original study where the PBS was developed (Yoon et al., 2015). Factors 1 (*Institutional Power of Men*) and 3 (*Gendered Domestic Roles*) showed accepting normality indicators, and Factor 2 (*Inherent Inferiority of Women*) indicated high levels of skewness (> 3.00) and kurtosis (> 11.00). Yoon and colleagues (2015) offered a relevant explanation for similar findings, which relate to the items' explicitness. General patriarchal beliefs imply men's superiority and women's inferiority; however, F1-*Institutional Power of Men* and F3-*Gendered Domestic Roles* items assess the power imbalance between men and women more covertly and subtly (Yoon et al., 2015) than F2-*Inherent Inferiority of Women*. On the other hand, F2-*Inherent Inferiority of Women* items explicitly measure the imbalance of power between men and women, specifically focusing on beliefs linked to women's inferiority and subordination, restriction, or exclusion, thus involving more hostile and explicit patriarchal beliefs than the other two factors. Such explicitness might have contributed to the difference observed in normality assessment in F2, given that while individuals may somewhat agree with certain distinct gender roles to keep society functional, they might not agree as much with beliefs regarding women's explicit inferiority and/or exclusion (Yoon et al., 2015). It should also be noted that the characteristics of the sample may have played a role in this result since most of the sample in the current study is female (i.e., 66.8%), and male participants tend to show higher levels of endorsement or agreement with such items (Yoon et al., 2015; Yoon et al., 2019).

Measurement invariance across gender analysis showed scalar invariance, meaning that the intercepts (i.e., the origin of the scale) were comparable between groups. This means that the differences in a latent variable capture all differences in the mean of the items (Putnick & Bornstein, 2016), and we can compare men and women based on the scores obtained. Since we expected men to have higher levels of endorsement of patriarchal views, achieving scalar invariance is particularly important, as it allows us to compare the means between the two groups and not credit these differences to measurement errors or systematic differences in responses. The DIF analysis results indicated several items that could be potentially problematic, particularly in factor 2, *Inherent Inferiority of Women*, expected to draw more divisive answers from men and women, given the more explicit sexist content. However, we still achieved scalar invariance, and these items remained in the scale. The complementary DIF analysis could help in understanding the source of the extreme kurtosis values. Convergent validity and reliability of the Portuguese version of the PBS scale were also assessed. Evidence for convergent validity supported the trustworthiness of this scale, since positive and significant correlations between all subscales of patriarchal beliefs, social dominance orientation, and sexism were found. We observed gender differences in line with previous research, with men significantly outscoring women in all these subscales (Chim et al., 2020; Magalhães et al., 2022; Tripathi, 2020; Yoon et al., 2015; Yoon et al., 2018; Yoon et al., 2019). As previously stated, men's higher levels of endorsement of such views may stem from an attempt to preserve their higher social status, while women (lower-status group) may be more aware of such issues and therefore endorse these patriarchal beliefs less since it affects them directly and personally in various contexts (Crittenden & Wright, 2013; Yoon et al., 2018). The results regarding the positive and significant correlations between the PBS, SDO, and sexism further highlight convergent validity evidence. SDO and sexism reinforce the maintenance of a gender hierarchy where men assert their dominance over women, which is congruent with patriarchal beliefs (Batalha et al., 2011; Canto et al., 2020). These results are also consistent with previous findings where significant correlations between PBS and SDO (Janjua & Kamal, 2023) and PBS and sexism (Yoon et al., 2015) have been found.

Despite the contributions of this work and the evidence provided in favour of the validity and reliability of the scale, this study has some limitations. First, this study is based on an online convenience sample. Despite the benefits of this data collection procedure (i.e., lower costs and time), future research should include more diverse samples, such as participants who do not have online access. Second, sample diversity regarding participants' gender should also be improved, given that despite the great sample size ($N=488$), most of our participants (66.8%) were female. This limitation is similar to previous studies, including those focused on PBS development (Yoon et al., 2015), which calls for wider efforts to ensure more representative samples across countries to improve the generalizability of the results (He & van de Vijver, 2012; Henrich et al., 2010). Finally, recruitment was conducted through social networks of individuals based in Portugal as part of a broader study targeting Portuguese-speaking participants, but we could not verify that all respondents were Portuguese citizens or residents, as these data were not collected. Future studies should seek to replicate this factorial structure using samples with explicit residency criteria.

CONCLUSION

The current study provides validity and reliability evidence for the Patriarchal Beliefs Scale (PBS, Yoon et al., 2015) in the Portuguese context, confirming its three-factorial structure and its theoretically expected

associations with social dominance orientation and sexism. This validation contributes to cross-cultural research on how patriarchal beliefs vary across societies and how they relate to broader patterns of gender (in)equality.

DATA AVAILABILITY STATEMENT

The data will be made available upon request by email to eunice_magalhaes@iscte-iul.pt

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APPENDIX*European-Portuguese Version of the Patriarchal Beliefs Scale*

Por favor, indique em que medida concorda com as seguintes afirmações utilizando a escala de 1-7 abaixo apresentada. Não há respostas certas ou erradas. Por favor, seja espontâneo e honesto na sua resposta.

	1	2	3	4	5	6	7
	Discordo fortemente	Discordo	Discordo ligeiramente	Nem concordo nem discordo	Concordo ligeiramente	Concordo	Concordo fortemente
1	No trabalho, eu teria mais confiança num chefe do sexo masculino do que num chefe do sexo feminino.						
2	Sinto-me mais confortável que homens dirijam grandes empresas do que com mulheres.						
3	Sentir-me-ia mais confortável se um homem estivesse a gerir as finanças do país.						
4	Sentir-me-ia mais seguro com um presidente do sexo masculino a governar o país do que um do sexo feminino						
5	Os homens devem liderar a política nacional.						
6	É importante que os homens tomem as grandes decisões que afetarão o meu país.						
7	Os homens, mais do que as mulheres, devem liderar serviços religiosos						
8	As questões de governação local devem ser deixadas para os homens						
9	Um homem deve ser o chefe de uma empresa						
10	Os homens seriam gestores mais competentes de instituições financeiras.						
11	Eu prefiro que sejam homens a conduzir as reuniões municipais						
12	Os papéis preponderantes que os homens desempenham na TV/filmes refletem como a sociedade deve funcionar						
13	As mulheres devem receber menos que um homem pelo mesmo trabalho.						
14	Os bancos não devem conceder créditos às mulheres						
15	As mulheres não pertencem ao mundo do trabalho						
16	É aceitável que um homem castigue fisicamente a sua esposa						
17	O lugar de uma mulher na comunidade deve ser principalmente no trabalho voluntário.						
18	As mulheres são menos capazes que os homens na gestão do dinheiro						
19	Colegas de trabalho homens devem ter mais voz no contexto de trabalho						
20	As raparigas têm menos necessidade de ter formação académica que os rapazes						
21	A carreira das mulheres deve ser limitada a empregos tradicionais femininos.						
22	A polícia não deve intervir em conflitos domésticos entre marido e mulher.						
23	Os homens são naturalmente mais inteligentes do que as mulheres						
24	Um homem tem o direito a ter relações sexuais com a sua esposa, mesmo que ela possa não querer						
25	Um homem deve ser quem sustenta a família						
26	Limpar é uma tarefa, principalmente, das mulheres						
27	Cozinhar é uma tarefa, principalmente, das mulheres						
28	Um homem deve ser aquele que disciplina as crianças						
29	Uma mulher deve ser quem, maioritariamente, cuida da criança						
30	Um homem deve controlar as finanças domésticas						
31	Uma mulher deve ser quem faz o trabalho doméstico						
32	Um homem é o chefe de família						
33	Um homem deve ditar as regras de casa						
34	As mulheres devem ser mais responsáveis pelas tarefas domésticas do que os homens						
35	Uma mulher deve ser a cuidadora principal das crianças						

Note. Institutional Power of Men (items 1-12); Inherent Inferiority of Women (items 13-24); Gendered Domestic Roles (items 25-35).