

Article

Toward Gender Understanding: Examining Ambivalent Sexism among University Students and Its Impact on Faculty Evaluation

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Abstract: This study examines gender differences in levels of sexism among university students and evaluates variations in assessing sexist attitudes toward professors. The aim is to analyze potential disparities between men and women regarding ambivalent sexism (both hostile and benevolent) and to determine if these differences influence the evaluation of specific behaviors by teaching faculty. Additionally, the present study seeks to validate the variability hypothesis, asserting that men are over-represented in the extremes of distributions compared to women concerning analyzed sexist attitudes. Eighty university students participated voluntarily and anonymously, completing three questionnaires on ambivalent sexism, neosexism, and the assessment of sexist behaviors by their instructors. Consistent with prior research, the results reveal higher levels of sexism among men in this context. Despite these differences, both men and women align in evaluating specific behaviors in teaching faculty, irrespective of their individual levels of sexism. Finally, the data presented support the variability hypothesis, indicating greater variability in sexist attitudes among men than women. These findings suggest that general attitudes assessed in most questionnaires might not be representative of the behaviors and attitudes that people display in real specific situations. This could change how future research and interventions approach these issues.

Keywords: ambivalent sexism; gender; university students; higher education; faculty education



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1. Introduction

Currently, research on sexism has been on the rise, providing an increasing amount of data on the subject. However, there is significant variability among different population sectors, emphasizing the need to continue to conduct studies that contribute specific insights into the issue. This study aims to analyze gender differences in sexist attitudes among university students and how they perceive and interpret faculty behaviors. The significance of this approach lies in conducting a detailed analysis to identify patterns and peculiarities within this demographic group. Understanding gender dynamics in higher education is crucial for shaping future professionals and leaders. By specifically addressing the perception of sexist attitudes in the academic sphere, this study will contribute to a more holistic and contextualized understanding of sexism manifestations in contemporary society.

This work will be structured into several sections with the purpose of providing a comprehensive and systematic exposition of the conducted research. Firstly, the theoretical framework supporting the research will be addressed, furnishing a solid foundation for understanding the analyzed variables and phenomena. Subsequently, the working hypotheses will be presented, outlining the fundamental expectations and assumptions that guided the inquiry. Following this, the methodology employed will be detailed, including the description of materials used and the procedure followed during data collection. Section 3 will concisely and objectively present the findings derived from the analysis of

the collected data. Finally, this article will conclude with Sections 4 and 5 in which the results will be interpreted considering the existing literature, implications of the findings will be explored, and potential directions for future research will be suggested. This structure aims to facilitate a well-organized and detailed comprehension of each phase of the research process.

1.1. Theoretical Framework

Sexism can be conceptualized as “an attitude directed towards individuals based on their belonging to a particular biological sex, according to which different characteristics and behaviors are assumed” [1]. Classic assumptions, such as men being “strong” and “protectors”, and women being “delicate” and “sensitive”, are considered sexist as they are solely based on a person’s sex, disregarding individual characteristics. Importantly, these gender-based assumptions need not be explicitly negative or harmful to be considered sexist. The contemporary understanding of sexism breaks from traditional definitions of “prejudice or antipathy” toward a sex [2] and establishes a duality known as “ambivalent sexism” [3]. This theory posits that sexism comprises two distinct ideologies: hostile sexism (HS), representing more traditional and overtly hostile and violent sexist behaviors, and benevolent sexism (BS), representing more modern, implicit, and seemingly positive or adoring sexist behaviors.

For instance, an HS behavior might involve perceiving a successful woman as dominant and power-hungry, while not applying the same judgment to a man in a similar position. On the other hand, a BS behavior could manifest as giving more verbal praise to a woman in the workplace for completing a task well or assigning her simpler tasks under the guise of being “caring” or “protecting” her, inadvertently limiting her opportunities for promotion [4].

Despite common perceptions that individuals displaying BS are more approachable and equality-minded, this perspective often leads to a misunderstanding of BS and its actual negative consequences for equality [5]. It is crucial to emphasize that these ambivalent gender ideologies are complementary, and both are negatively associated with equality [6].

There is an ongoing debate about the explanation of sexism and differences between men and women [7], with extreme positions advocating an evolutionary/biological origin (nature) and another a cultural/environmental origin (nurture). This conflict, known as nature vs. nurture, has persisted in various research areas. In the context of this debate, evolutionary perspectives suggest that some sexual differences in behavior and psychological dispositions can be attributed to pressures from natural selection [8]. For instance, male competition for mates may explain men’s greater inclination toward aggression and risk taking [9]. However, the cultural perspective argues that these aggressive or risk-taking behaviors in men result from social pressures or rewards, without genetic or evolutionary influence.

Currently, there is a recognized imperative to transcend ideologies within gender studies [10], as they impose limitations and impediments to research. There is a concerted effort to broaden the focus toward models that integrate theories, explicitly delineating various causal interactions in their explanations, such as the biosocial model [11] or the life history model [12]. These models take into account both biological and social factors to furnish more comprehensive explanations. This perspective is responsive to recent studies suggesting that structural disparities in the brain between sexes are more aptly explicated as manifestations of heterogeneity rather than being solely associated with sex. The aforementioned perspectives advocate a broader and more comprehensive approach by considering models like the biosocial and life history models. These models acknowledge that despite there being multiple structural disparities in the brain between sexes, such as different raw volumes, surface areas, cortical thickness, or white matter tract complexity [13], these differences can be better understood as expressions of inherent heterogeneity in biology and human experience, rather than being exclusively attributable to sex. For example, ref. [14] proposes that sex differences can be classified in four dimensions: persis-

tent vs. transient across the lifespan, context independent vs. dependent, dimorphic vs. continuous, and direct vs. indirect consequences of sex. In essence, differences in brain structure may arise from a nuanced interplay of biological and social factors. This fuller understanding challenges the simplistic notion that brain differences are solely driven by sex and underscores the importance of grappling with the complexity of factors influencing human brain development. For example, a robust trans-species sex difference is seen in playing behavior in juveniles, with males being more persistent and prone to rough and tumble play. However, through detailed investigations, behaviors like this cannot be explained by sex alone and require an understanding of the complex interrelation of biological, cultural, and environmental factors [15]. Similar arguments can be made in relation to stress, another variable commonly investigated under a sex difference view. Again, there are many factors influencing a stress response that have nothing to do with sex (like age or past experience) [16]. It is wrong to assume that males and females will respond in the same way to a stressful situation, but it is equally wrong to assume that generalities about sex differences will offer a clear explanation.

In order to enhance the understanding of ambivalent sexism, various studies have examined potential differences between men and women in levels of benevolent sexism (BS) and hostile sexism (HS) [17–19]. However, the results are notably varied and contradictory. For instance, research has reported that levels of BS exceed those of HS in contemporary society, with the only gender discrepancy being that men exhibit higher levels of HS than women [20]. Conversely, other studies indicate that HS prevails over BS, with men showing the highest levels of both types of sexism [21,22]. Indeed, a stronger correlation between BS and HS has been observed in men compared to women [5]. Finally, some studies find no significant differences between men and women in levels of BS or HS [23].

This lack of consensus among studies highlights two crucial aspects. Firstly, it reinforces the assertion that environmental and cultural factors play a significant role, as greater uniformity in behaviors across studies would be expected if solely determined by genetic/biological factors. Social and behavioral predispositions influencing gender roles and gender inequality are evolutionary traits but are not inflexible, suggesting they can change rapidly due to cultural influences and environmental alterations [12]. Secondly, if these cultural and environmental factors are paramount, more research is needed to address these issues in various settings, in different contexts, and with diverse populations to thoroughly comprehend ambivalent sexism in contemporary society. Therefore, this study specifically focuses on the educational setting, addressing the university population in the Spanish context.

Teaching at the studied university omitted mandatory content on gender and diversity. It cannot be assumed that adults automatically possess this knowledge. Previous research confirms that preservice teachers, those who have not yet started teaching, struggle to identify situations of gender-based inequality, discrimination, and symbolic gender violence [24]. Similarly, university students are influenced by the sexist behaviors of teachers, even through mere suggestion. A study demonstrated that women reported a less positive experience and lower performance when suspecting the instructor could be sexist [25].

Regarding the levels of ambivalent sexism among university students themselves, research with Spanish samples suggests that they exhibit lower levels than students in compulsory secondary education [26]. It appears that the educational level and/or the consolidation of attitudes in young adults are crucial factors in reducing sexism. However, these data should not be misconstrued, as the evolution of sexist behaviors seems to follow a U-shaped curve, decreasing until adulthood and then gradually increasing, especially hostile sexism [18]. Concerning gender differences among university students, men seem to display higher levels of hostile sexism than benevolent sexism, whereas in women, the opposite is observed. Additionally, men score higher on all sexism scales than women [27].

The good news is that sexism can be relatively easily reduced through appropriate training [4,28].

1.2. Working Hypotheses

The hypotheses proposed in this study align with the following:

H1: Men are anticipated to display higher levels of sexist attitudes than women. We anticipate replicating recent findings [27], where men demonstrated higher levels of both hostile sexism (HS) and benevolent sexism (BS).

H2: Students are anticipated to show greater agreement when evaluating specific attitudes of their professors, regardless of their levels of BS and HS. No previous studies have compared general sexist attitudes with the evaluation of specific behaviors within one's immediate environment. According to this hypothesis, individuals may hold different values overall, but when focusing on a well-defined specific situation, they might be more objective (and therefore more similar) in assessing it as sexist or not.

H3: Men are expected to display greater variability in their responses compared to women. The well-known "variability hypothesis" [29] posits that men are over-represented at the extremes of distributions in numerous cognitive and other characteristics. Numerous studies have supported this hypothesis [30,31]. For example, men may be over-represented both in the highest and lowest ends of academic performance. However, conclusive data regarding this effect on sexist attitudes are lacking, which would significantly contribute to this field of study.

2. Materials and Methods

2.1. Participants and Procedure

A university campus in Spain agreed to participate in this study. All students from that campus were contacted through their institutional e-mails to participate in the study, asking them to answer some anonymous questions about themselves and the teaching staff. From this convenience sample, 80 students responded and agreed to participate voluntarily. All students that agreed to participate were included in the analysis. The sample descriptives can be observed in Table 1.

Table 1. Frequency distribution of the variables degree, academic year, genetic gender, age, and political self-classification ($n = 80$).

Degree	Frequency	Percentage
Dual Degree Materials Engineering and Mechanical Engineering	2	2.50%
Food Engineering	2	2.50%
Primary School Teacher	7	8.75%
Civil Engineering	2	2.50%
Computer Engineering	40	50.00%
Mechanical Engineering	14	17.50%
Materials Engineering	8	10.00%
Preschool Teacher	1	1.25%
Industrial Relations and Human Resources	4	5.00%
Course		
First	64	80.00%
Second	8	10.00%
Third	5	6.25%
Fourth	3	3.75%
Self-Identification of Gender-Sex		
Male	48	60.00%
Female	32	40.00%
Age		
18	37	46.25%
19	20	25.00%
20	6	7.50%
21	6	7.50%

Table 1. *Cont.*

Degree	Frequency	Percentage
22	4	5.00%
23	4	5.00%
24	1	1.25%
27	1	1.25%
47	1	1.25%
Political Self-Classification		
Right	16	20.00%
Left	31	38.75%
Other	13	16.25%
None	20	25.00%

The questionnaires were administered online using Google Forms, with this modality known for providing less biased responses compared to other procedures where interviewers are present during questionnaire administration [32]. Participation in this cross-sectional study was both voluntary and confidential. The research followed the ethical guidelines of the Declaration of Helsinki, as well as those prescribed by the university's ethical committee. No personal information was collected from participants and all data were securely stored in the university servers protected by password. Statistical software R (version 4.0.0) was used for analyses.

2.2. Material

The Spanish adaptation of the Ambivalent Sexism Inventory [3] by [33] was used, comprising 22 items on a Likert scale where participants responded with a score from "0 = Totally Disagree" to "5 = Totally Agree". This scale is divided into Sexism Hostility (SH) and Benevolent Sexism (BS), the latter consisting of three sub-factors: paternalism, gender differentiation, and heterosexual intimacy.

The Neosexism Scale [34] Spanish version by [35] was also employed, consisting of 11 items on a Likert scale where participants responded with a score from "0 = Totally Disagree" to "7 = Totally Agree".

A questionnaire consisting of 9 items was developed (see Table 2), where participants were required to indicate their level of agreement using a scale ranging from "0 = Totally Disagree" to "5 = Totally Agree".

Table 2. Items of questionnaire on evaluation of sexist attitudes in teaching staff.

1. Often cites girls as examples of good and responsible students more than boys.
2. Criticizes the attire of the girls in the classroom to a greater extent than that of the boys.
3. The teaching staff tends to reprimand boys to a greater extent than girls for similar behaviors, such as talking during explanations.
4. Usually gives way to girls when crossing the door and encountering others when entering or leaving the classroom.
5. Usually shows more patience with girls when explaining or addressing doubts.
6. Usually compliments politely the well-dressed girls in the class.
7. Tends to give higher grades to girls and demand more from boys.
8. The vocabulary used in tutorials is more polite with girls.
9. Explicitly states that one gender is superior to the other for studying certain subjects.

3. Results

3.1. Exploratory and Descriptive Analysis of Items

Firstly, a descriptive analysis of the responses to the items in the previously explained questionnaires was conducted (see Table 3).

Table 3. Descriptive analysis of the items constituting the questionnaires, as well as the age variable ($n = 80$).

Item	Mean	Median	Range	Standard Deviation	Interquartile Range	Skewness	Kurtosis
cvo1	1.7	2	0–5	1.56	3	0.34	−1.18
cvo2	0.71	0	0–4	1.15	1	1.65	1.82
cvo3	1.48	1	0–5	1.5	3	0.61	−0.79
cvo4	1.79	2	0–5	1.67	3	0.4	−1.2
cvo5	1.14	1	0–5	1.42	2	1.12	0.32
cvo6	0.42	0	0–5	1.04	0	2.96	8.84
cvo7	0.68	0	0–5	1.36	1	1.97	2.74
cvo8	0.62	0	0–5	1.23	1	2.03	3.36
cvo9	0.65	0	0–5	1.16	1	1.95	3.42
sa1	0.84	0	0–5	1.3	1.25	1.4	0.85
sa2	1.48	1	0–5	1.71	3	0.79	−0.75
sa3	1.11	0	0–5	1.46	2	1.16	0.39
sa4	1.8	1.5	0–5	1.59	3	0.58	−0.78
sa5	1.32	1	0–5	1.54	2.25	0.85	−0.57
sa6	0.4	0	0–3	0.82	0	2.01	3.02
sa7	1.1	0	0–5	1.51	2	1.09	−0.2
sa8	0.53	0	0–4	0.89	1	1.6	1.92
sa9	1.24	1	0–5	1.44	2	0.74	−0.81
sa10	1.11	1	0–5	1.33	2	1.07	0.12
sa11	0.98	0	0–5	1.35	2	1.26	0.62
sa12	0.5	0	0–3	0.94	1	1.66	1.36
sa13	0.55	0	0–5	1.19	0	2.02	2.91
sa14	0.92	0	0–5	1.32	2	1.47	1.6
sa15	0.81	0	0–5	1.2	1	1.61	1.93
sa16	1.26	1	0–5	1.54	2	1.1	0.1
sa17	0.64	0	0–4	0.98	1	1.39	0.99
sa18	1.2	1	0–5	1.39	2	1.01	0.14
sa19	1.9	2	0–5	1.51	2	0.38	−0.95
sa20	0.38	0	0–4	0.82	0.25	2.8	8.5
sa21	1.23	0	0–5	1.57	2	0.98	−0.41
sa22	0.91	0	0–4	1.09	2	0.8	−0.58
neo1	2.84	2	1–7	1.99	3	0.67	−0.9
neo2	3.99	4	1–7	2.1	4	−0.11	−1.35
neo3	1.68	1	1–7	1.34	1	2.41	5.65
neo4	1.61	1	1–5	1.04	1	1.69	1.92
neo5	1.84	1	1–7	1.55	1	1.79	2.1
neo6	2.21	1.5	1–7	1.6	2	1.22	0.4
neo7	1.68	1	1–7	1.3	1	2.08	3.89
neo8	1.25	1	1–6	0.85	0	3.67	13.82
neo9	3.31	3	1–7	1.73	3	0.12	−1.19
neo10	2.71	2	1–7	1.92	3	0.89	−0.49
neo11	1.4	1	1–7	1.27	0	3.53	11.9

cvo (Questionnaire on Evaluation of Sexist Attitudes in Teaching Staff). sa (Ambivalent Sexism Inventory). neo (Neosexism Scale).

3.2. Reliability Analysis

To assess reliability, Cronbach's alpha was utilized. The coefficients obtained indicate good internal consistency for the questionnaire on the evaluation of sexist attitudes in teaching staff and for the neosexism scale, and very good internal consistency for the ambivalent sexism scale (see Table 4).

Table 4. Reliability analysis. Cronbach’s alpha reliability coefficients for the dimensions of the questionnaires.

	No. of Items	Coef. “Alpha”	IC. 95%		<i>p</i> -Sig.
			Lower Limit	Upper Limit	
Questionnaire on Evaluation of Sexist Attitudes in Teaching Staff	9	0.851	0.796	0.895	<0.001 ***
Ambivalent Sexism	22	0.947	0.928	0.963	<0.001 ***
<i>Hostile Sexism</i>	11	0.961	0.948	0.973	<0.001 ***
<i>Benevolent Sexism</i>	11	0.865	0.816	0.905	<0.001 ***
Paternalism	4	0.579	0.406	0.712	<0.001 ***
Gender Differentiation	3	0.698	0.560	0.798	<0.001 ***
Heterosexual Intimacy	4	0.876	0.825	0.915	<0.001 ***
Neosexism	11	0.832	0.772	0.882	<0.001 ***

*** Highly significant ($p < 0.01$).

3.3. Kruskal–Wallis Multivariate Analysis for Each Questionnaire

Kruskal–Wallis multivariate analysis was used to assess whether the collective behavior of the items, considering each questionnaire individually and all three collectively, varies based on biological sex. Given that one of the prerequisites for employing MANOVA is a normal joint distribution of variables, the Shapiro–Wilk test was employed to verify this assumption. The results are presented in Table 5.

Table 5. Multivariate normality test.

	W	<i>p</i> -Sig.
Questionnaire on Evaluation of Sexist Attitudes in Teaching Staff	0.72247	5.329×10^{-11} ***
Neosexism	0.60284	3.314×10^{-13} ***
Ambivalent Sexism–Neosexism	0.77485	9.927×10^{-10} ***
Three Questionnaires	0.54199	3.222×10^{-14} ***
	0.39733	2.764×10^{-16} ***

*** Highly significant ($p < 0.01$).

As observed, none of the questionnaires follow a multivariate normal distribution. Therefore, the multivariate Kruskal–Wallis test was employed. The results are displayed in Table 6.

Table 6. Multivariate Kruskal–Wallis test.

	Chi Square	<i>df</i>	<i>p</i> -Sig.
Questionnaire on Evaluation of Sexist Attitudes in Teaching Staff	14.00109	9	0.122
Ambivalent Sexism	41.56255	22	0.007 ***
Neosexism	32.28416	11	0.001 ***
Ambivalent Sexism–Neosexism	50.27621	33	0.028 **
Three Questionnaires	54.26684	42	0.097

*** Highly significant ($p < 0.01$); ** significant ($p < 0.05$).

In light of these findings, it may be inferred that the questionnaire evaluating attitudes toward sexism in teaching staff does not demonstrate divergent patterns contingent on gender. Nevertheless, distinct responses are elicited based on gender in the ambivalent sexism and neosexism questionnaires. Mann–Whitney U analyses reveal that males exhibit elevated levels of both hostile sexism (HS) ($U = 204$, $p < 0.001$) and benevolent sexism (BS) ($U = 327.5$, $p < 0.001$).

3.4. The HJ-Biplot Analysis

Finally, the outcomes derived from implementing an HJ-Biplot with the items of all three questionnaires collectively are presented (Figure 1).

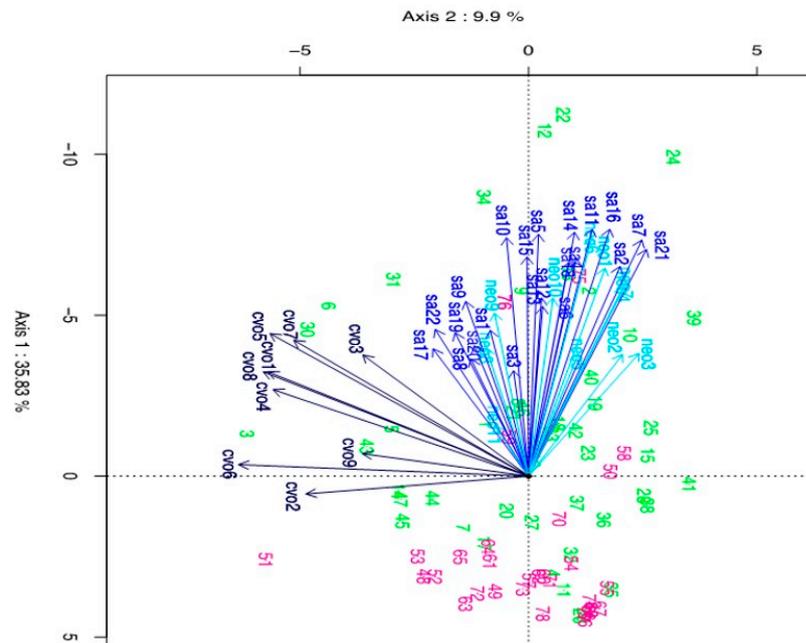


Figure 1. An HJ-Biplot with the items from all three questionnaires. **Note:** CVO stands for the Questionnaire on Evaluation of Sexist Attitudes in Teaching Staff, SA represents the Ambivalent Sexism Inventory, and NEO refers to the Neosexism Scale. Green numbers correspond to male participants, while magenta numbers indicate female participants.

The HJ-Biplot offers a two-dimensional representation of both the set of items and the set of participants within the same space. Items are depicted as arrows, and participants as points. Points shown in green correspond to male participants, while those in magenta represent female participants. Each questionnaire is displayed in a different shade of blue.

The proximity of points serves as an indicator of participant similarity concerning their responses to the items across the three questionnaires. Additionally, the relationship between items is assessed through the angles formed by the arrows; acute angles signify a strong association, right angles suggest independence, and opposing arrows indicate a robust yet inverse relationship.

In the initial graph, the items from all three questionnaires are depicted, revealing a discernible separation between female and male respondents. Additionally, it is evident that the items from the questionnaire assessing attitudes toward sexism in faculty members are independent of those featured in the other two questionnaires. Notably, the behavior of male respondents appears more scattered compared to their female counterparts.

Given that the questionnaire evaluating attitudes toward sexism in faculty members exhibits no gender-based distinctions and that it does not reflect participants' attitudes (it is their beliefs about their professors' attitudes), a supplementary graph is presented, specifically focusing on the other two questionnaires that do reflect participants' sexist attitudes to provide a clearer insight into the observed differences (see Figure 2).

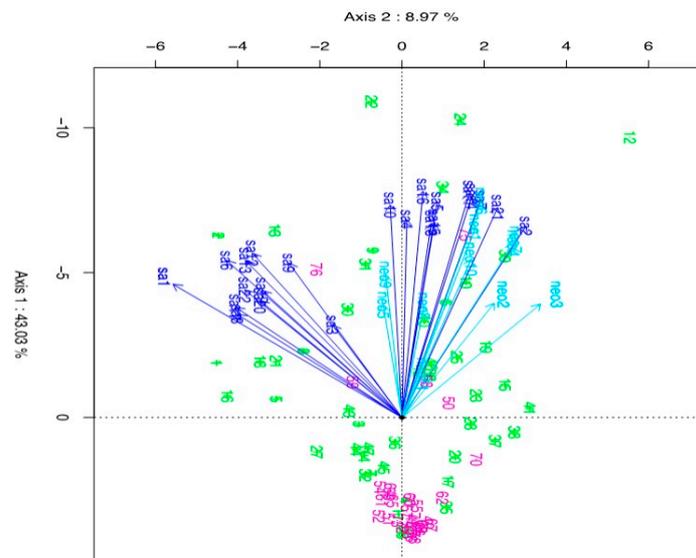


Figure 2. An HJ-Biplot of the questionnaires on ambivalent sexism (AS) and neosexism (NS). **Note:** green numbers represent male participants, while magenta numbers represent female participants.

In this plot, the distinction between men and women is even more pronounced than in the previous one. Additionally, it can be observed that items corresponding to the benevolent sexism dimension are loosely related to items from the hostile sexism dimension and those of the other questionnaire. Finally, the orientation of the items in the hostile sexism dimension and the neosexism questionnaire provides a greater separation between men and women compared to items related to benevolent sexism.

4. Discussion

The present study aimed to explore gender differences in levels of ambivalent sexism and the evaluation of sexist behaviors in a sample of university students. The obtained results provide valuable insights in this regard. The hypothesized assumptions will be reviewed below:

H1: *Men will exhibit sexist attitudes to a greater extent than women. It has been confirmed, in line with previous studies [27], that men show significantly higher scores than women for both BS and HS. Despite this difference, both genders agree on which items have higher scores: both men and women give the highest scores to items such as “Compared to men, women tend to have a higher moral sensitivity” and “Most women interpret innocent comments or behaviors as sexist, that is, as expressions of prejudice or discrimination against them”. It is noteworthy that both genders agree on these precepts, reflecting that such biases are quite entrenched in society, including the university. The fact that university students generalize these biases is a real problem that affects and exacerbates sexist discrimination.*

It is important to note that the highest mean scores did not exceed 2.5 on a 0 to 5 scale, so the general trend is to disagree with the sexist precepts proposed in the ambivalent sexism scale. These mean scores are lower than those reported in other studies [36]. It is possible that the specific population analyzed is more aware, leading to lower scores, or it is possible that voluntary participation has resulted in only the most conscientious individuals taking part. Although these data are initially positive, there are still cases with high scores agreeing with sexist precepts, indicating that there is work to be done.

Previous studies show that men have higher levels of hostile sexism (HS) than benevolent sexism (BS), and women generally exhibit the opposite pattern [36]. However, according to the data from Spain in the study by [36], the sample in the present study replicates

the previous findings in the Spanish sample: scores for HS were higher than those for BS in both men and women.

H2: *It is anticipated that students will exhibit greater agreement when evaluating specific attitudes of their teachers, regardless of their levels of BS and HS. However, no previous studies have been identified that compare general sexist attitudes with the evaluation of specific behaviors within one's immediate environment. According to this hypothesis, individuals may hold different values overall, but when focusing on a well-defined specific situation, they might be more objective (and therefore more similar) in assessing whether it is sexist or not. This convergence in the evaluation of specific behaviors may be influenced by the perception that individual actions are more discernible and less likely to be influenced by ingrained gender biases in society [1,3]. This finding aligns with the theory that in specific and concrete contexts, individuals may be more capable of setting aside gender stereotypes and evaluating actions more impartially [5,6]. Previous research supports the notion that perceptions of gender equality and discrimination can be shaped by individual experiences and specific contexts [23]. The lack of gender differences in the evaluation of teacher attitudes in our study suggests that students may be considering specific actions and observed behavior rather than relying on broader gender stereotypes [6,23]. This understanding has significant implications for the development of educational interventions and training programs focusing on promoting a culture of gender equality in academic settings. For example, using specific examples of people from the students' environment might help them to better and more objectively understand some gender problems compared to general unspecific situations that are more prone to be affected by stereotypes.*

H3: *It is expected that men will display greater variability in their responses compared to women. The well-known "variability hypothesis" [29] posits that men are over-represented at the extremes of distributions in numerous cognitive and other characteristics. Numerous studies have supported this hypothesis [30,31]. For example, men may be over-represented both in the highest and lowest ends of academic performance [37]. However, conclusive data regarding this variability effect on sexist attitudes are lacking, which would significantly contribute to this field of study, facilitating an understanding of the effect and justifying the promotion of individualized interventions rather than general ones. Upon examining whether there was greater variability in men's responses compared to women's, the literature highlights that men tend to exhibit greater variability in a wide range of characteristics and behaviors, including attitudes toward gender [30,31]. The observed variability among men in their sexist evaluations may reflect individual differences in the adoption and internalization of traditional gender norms. The results presented here suggest that some men may exhibit attitudes more rooted in sexist ideology, while others may show greater resistance to such attitudes. This variability underscores the importance of adopting differentiated approaches in promoting gender equality and combating sexism, acknowledging the diversity of attitudes and perceptions within the male population. In summary, the results of our study support and complement the existing literature on gender differences in the evaluation of specific sexist attitudes and variability in gender responses [30,31]. These findings have significant implications for the understanding and promotion of gender equality in academic settings and beyond, highlighting that gender attitudes are not only caused by gender itself. There is a wide variety of attitudes affected by biological, cultural, and environmental factors. Future studies, policies, and interventions should acknowledge this fact to be more effective.*

As for the limitations of this work, it is important to highlight that the participants were from a very specific region and mostly from a very particular field of study. Although, in principle, this may limit the generalization of the obtained results, as justified at the beginning, it is crucial to gather data from specific populations, as general results are more challenging to interpret and less useful for understanding individual behaviors. The discovery of previously unreported data in previous studies is a first step for other researchers to verify the extent to which these data are generalizable, aiming to contribute to a better understanding of this phenomenon.

5. Conclusions

In conclusion, the graphical representations, particularly the HJ-Biplot analysis, provided valuable insights into gender differences in attitudes toward sexism among university students. The visualizations highlighted distinct patterns in the responses of men and women, underscoring the prevalence of certain sexist attitudes that are deeply ingrained in society. The findings reveal that while men generally exhibit higher levels of both benevolent and hostile sexism, there are specific attitudes on which both genders converge, indicating shared biases that extend into the university environment.

The present study's objectives were met, shedding light on the nuances of gender-related attitudes through a comprehensive analysis of three questionnaires. The observed differences in responses to the various dimensions of sexism contribute to a richer understanding of the complexity surrounding these issues. Notably, the evaluation of specific sexist behaviors in teachers showed no gender differences, suggesting a potential shift toward more objective assessments in this context.

The results show an encouraging trend of generally low mean scores, indicating disagreement with sexist precepts, which is a desirable trait. Whether this result can be generalized to other populations is a different issue, but some positive change seems to be happening at least in certain groups and contexts. However, the existence of cases with elevated scores agreeing with sexist precepts emphasizes the need for ongoing efforts to address and mitigate sexist attitudes. The identified variability among male respondents highlights a noteworthy aspect that warrants further investigation and consideration in future research and interventions.

While acknowledging this study's limitations, such as the specific regional and academic focus of the participants, the unique insights gained enrich the ongoing discourse on gender dynamics and sexism in academic settings. It is crucial to conduct more studies that provide insights into the characteristics and individual differences in various population segments and different contexts. This will enable the development of training programs tailored to the specific needs of each individual. Future research should build upon these findings, exploring the generalizability of the observed patterns and considering the implications for interventions aimed at fostering gender equality and reducing sexist behaviors.

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