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# Triggering competence may protect multiple minority members from hiring discrimination

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Hiring managers may consider hundreds of applicants for one position, leading to rapid decisions based on minimal information which may discriminate against certain individuals. However, past research shows that individuals belonging to multiple minority groups may, in fact, benefit from their intersectional status in certain contexts. First, to identify possible types of prejudice, the Attitudes Toward Gay Men (ATG) and Attitudes Toward Brazilian Men (ATB) explicit measures were created and paired with implicit association tests (IATs). Whereas participants did not show signs of explicit negative attitudes toward outgroup members, they did exhibit implicit preferences toward ingroup members. Using another sample from the same sociocultural context, potential discrimination faced by straight or gay Brazilian applicants in Portugal was examined in high or low competence scenarios, drawing inspiration from the stereotype content model. Results indicated, compared to ingroup applicants, straight and gay outgroup members were perceived alike in competence and were offered statistically similar salaries when competence was triggered; in contrast, only straight outgroup members were perceived as less competent and were offered statistically lower salaries when competence was not triggered. Findings suggest that multiple minority status may protect certain individuals from hiring discrimination, particularly in contexts where competence is not assumed.

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In an increasingly capitalistic world, immigration to regions with greater socioeconomic status remains one of the most cited determinants of international migration (e.g., Valdez et al., 2013; Winchie and Carment, 1989). Therefore, successful integration into the host country's work culture (e.g., providing a curriculum vitae (CV), partaking in interviews, donning specific outfits, etc.) is essential to secure financial prosperity. Yet, due to external factors such as xenophobic policies restricting access to resources (Valdez et al., 2013), a lack of recognition for qualifications (Pereira, 2013), or certain phenotypical features which elicit racist responses (Polavieja et al., 2023), immigrants may be forced to accept low-paying positions without room for growth although, contradictorily, anti-discriminatory laws are typically present (Neto et al., 2017). Because of this, coupled with our globalized society, a deeper understanding of stereotypes' influences on hiring discrimination is crucial.

### The stereotype content model

Stereotypes exist everywhere in the world around us, and as the stereotype content model (SCM) exhibits, the stereotyping of outgroup members converges onto one of two broad dimensions: warmth or competence (e.g., Cuddy et al., 2007; Cuddy et al., 2011; Fiske et al., 2002; Fiske et al., 2007). As humans have historically made rapid decisions to ensure survival, the propensity to judge others on the potentiality of causing harm (i.e., warmth) and the capability of causing harm (i.e., competence) to the group remains an important function of psychological processes. Additionally, each dimension contains several subcategories of stereotype content emerging from intergroup relationships (Fiske et al., 2002) whereas measures of trustworthiness or friendliness may reflect warmth, and measures of intelligence or aptness may reflect competence (Fiske, 2018). From this logic, members of specific outgroups may be categorized based on combined levels of warmth and competence. For instance, middle-class individuals may be considered high in warmth and competence (resulting in feelings of admiration from outgroup members), while immigrants may be regarded as low in warmth and competence (resulting in feelings of disgust from outgroup members) (Cuddy et al., 2007; Fiske, 2018). The SCM has seen consistent support since its conception, with unipolar stereotyping generally falling into the dimensions of either warmth or competence; e.g., men are typically perceived as more suitable than women for certain disciplines such as engineering (i.e., higher competence) (Cheryan et al., 2015), black men may be regarded as more threatening than white men (i.e., lower warmth) (Pedulla, 2014), and physically disabled individuals may be considered as less adequate parents than physically abled individuals (i.e., lower competence) (Nario-Redmond, 2010). However, humans rarely belong to one social category which adds further complexity to the theoretical approaches of stereotyping. Therefore, how might individuals belonging to multiple (and sometimes, conflicting) social categories be perceived?

### Intersectional individuals

Intersectionality is the phenomenon in which unique experiences and stereotypes may be attributed to individuals belonging to multiple minorities, consistently examined across contexts and categories (e.g., Bergstrom et al., 2023; Crenshaw, 1989; Ghavami and Peplau, 2012; Jarrin and Pitts, 2020; Petsko et al., 2022). For example, gay Hispanic men were described as behaving more prototypically "white" than straight Hispanic men (Petsko and Bodenhausen, 2019b), both gay and old Arab men were regarded as less hostile than straight and young Arab men (Bergstrom et al., 2023), and immigrant women in STEM reported fewer

opportunities than native women in STEM, namely due to organizational or social barriers such as assumptions of low competence due to their accents (Bolzani et al., 2021). To add more dimensions to the processes at hand, the nature of intersectional stereotyping is arguably as variable as it appears to be. For instance, although black women share social categories with black men and white women, the experiences had by black women are not representative of the two other groups and instead may be influenced by overlapping stereotypes (Crenshaw, 1989; Ghavami and Peplau, 2012). However, this does not mean that experiences had by black women are parallel for all black women; as Wilkins (2012) highlights, economic status influenced the identities of black female students, whereas middle-class individuals adopted more "racially-neutral" identities and were prone to exclude other black female students of lower socioeconomic status. Undoubtedly, intersectional research must not focus solely on phenotypical attributes of individuals, but rather, a mixture of inputs that may shape individuals' experiences.

Because of its fluidity, several explanations for intersectional stereotyping have been proposed. Specifically, intricate interactions between contrasting social categories (e.g., Crenshaw, 1989; Pedulla, 2014; Purdie-Vaughns and Eibach, 2008; Wilson et al., 2017) has catalyzed conflicting results in the literature, fueling discussions between dominance (e.g., Kurzban et al., 2001) and integrative (e.g., Wojnowicz et al., 2009) ideations of stereotyping, where individuals tend to perceive either singular categories or merge relevant salient categories, respectively. For instance, gay black men may be regarded as more competent business leaders (Wilson et al., 2017) or more suitable job candidates (Pedulla, 2014) than straight black men, but in either case, gay white men were not viewed as more competent than their straight counterparts. In this specific contextual framing, it appears integrative stereotyping benefited gay black men, but not gay white men (i.e., stereotypes of being gay mitigated the stereotypes of being black). However, when participants were asked to evaluate crimes, negative affirmations toward black men were not diminished upon learning the target was gay (Petsko and Bodenhausen, 2019a), favoring dominant stereotyping where stereotypes of black men may be concretized. As a result of these contradictions, the proposal of cognitive compartmentalization has also gained traction within intersectional research (e.g., Petsko et al., 2022; Turner et al., 1987). This point of view argues that individuals may pay more attention to a singular categorization or create unique perceptions of an intersectional target dependent on contextual fit (i.e., stereotyping based on what a specific context allows). For example, Petsko and colleagues (2022) found evidence that participants quickly associated men with science (and women with liberal arts) only when the identifier of gender was activated (and, not when age was made salient), while Veit and colleagues (2022) found that triggering competence correlated with higher evaluations of candidates across both sex and ethnic origin. That is, the experience of stereotyping intersectional individuals may be a function of the most salient category in a given context.

### Occupational stereotyping against intersectional individuals

In the traditional workplace context where prototypicalities of masculinity and whiteness are favored, some multiple minority members benefit from their intersectional status, while others experience more negative experiences than their counterparts with only one salient minority (e.g., Bowleg, 2008; Purdie-Vaughns and Eibach, 2008). That is, implied prototypical proximity to masculinity and/or whiteness may assist certain individuals, while implied prototypical distance to those dimensions may cause harm (Pedulla, 2014; Purdie-Vaughns and Eibach,

2008). For instance, female Maghreb individuals applying for a fictional managerial position experienced more negative evaluations than did their male Maghreb counterparts (Derous and Pepermans, 2019), gay black men received larger salary offers than straight black men for the same position (Pedulla, 2014), and lesbian women were perceived as better collaborators than straight women in a business context (Sterkens et al., 2022). In these specific cases, it can be argued that closer proximity to whiteness/men appeared to influence participants' ratings of intersectional individuals in the male-oriented workplace setting.

Nonetheless, contradictory findings aligning more closely with theory of double-jeopardy (e.g., Beal, 1970) form the argument that double minority statuses may harm certain individuals in the workplace through additive stereotyping (Pierné, 2013). Notably, black women commonly report feelings of [intersectional] invisibility or biased microaggressions in the workplace, separate than the experiences had by black men (Holder et al., 2015), and similar to findings from experimental research. Moreover, while lesbian Arab applicants were rated as more competent than straight Arab women, gay Arab applicants were rated as equally competent as straight Arab men (Strinić et al., 2021), older women were evaluated as less hireable when they portrayed stereotypically masculine behaviors (e.g., self-promotion) in interviews (Krings et al., 2022), and men (but not women) evaluated lesbian women as less desirable employees when compared to straight women (Everly et al., 2016). Although the presented social categorizations are different (albeit, with some overlap), the variability of past findings in the same workplace context (e.g., male-oriented fields) begs for further experimental attempts to test the generalizability of psychological processes related to stereotyping different social categories, with the field of intersectionality in mind.

### The current studies

As much of the available literature has been conducted in a North American setting, it is imperative to test the generalization of aforementioned psychological processes when evaluating candidates in cultures with certain historical backgrounds; these settings might offer optimal contexts to further explore these effects, providing nuanced, yet comparable, outcomes. In Portugal, there exists a complicated post-colonial relationship between Portuguese and Brazilian natives whereas cultural proximity presents economic opportunities to workers from both nations, but the perpetuation of old stereotypes (e.g., Brazilian promiscuity or incompetence) hinders the creation of positive relationships (Carvalho and Duarte, 2020; Guerra et al., 2015; Pereira, 2013; Santos, 2013). Because of this, workplace discrimination is common amongst [underqualified] Brazilian applicants (e.g., Figueiredo et al., 2018; Malheiros and Padilla, 2015; Pereira, 2013), although Brazilian workers are simultaneously perceived as indispensable to the Portuguese economy (Guerra et al., 2015). Arguably, gay individuals in Portugal receive less social discrimination than Brazilians, perhaps due to a multitude of sociopolitical movements since the end of the dictatorship in 1974 (Cascais, 2009; Santos, 2004). Currently, lesbian, gay, bisexual, and transgender (LGBT) individuals enjoy legal protections that consistently rank as some of the most inclusive in Europe (Hines and Santos, 2017; ILGA, 2022). Of course, that is not to say Portugal is without anti-gay prejudices; discrimination against LGBT individuals in Portugal typically begins during pre-adolescent years in which individual differences may appear (i.e., bullying) (Gato et al., 2020), leading to future difficulty obtaining social and occupational achievements such as adopting children or earning promotions (Beatriz and Pereira, 2022; Costa et al., 2014).

Importantly, literature regarding the intersection of Brazilian and gay men has focused primarily on the targets' sexualities (suggesting a multiplicative effect of national and sexual stereotyping) (e.g., Jarrin and Pitts, 2020; Parker, 1998; Pereira, 2021), but ignores gay Brazilians in other contexts – namely, the workplace. To identify potential manners of discrimination against straight and/or gay Brazilians, adapted versions of the Attitudes Toward Lesbians and Gay Men (ATLG) scale (Herek, 1984; Herek, 1998) were developed. Additionally, new versions of the Implicit Association Test (IAT) (Greenwald et al., 1998) were concurrently implemented with the explicit measures given the different theoretical scopes of both procedures (Gawronski and de Houwer, 2014). Based on results from the pilot study, Experiments 1 and 2 were created to investigate stereotypical perceptions toward national or foreign applicants with the same qualifications, using participants from the same sociocultural context. Specifically, CVs with high or low explicit competence were generated to test participants' evaluations toward four target groups: straight Portuguese, gay Portuguese, straight Brazilian, and gay Brazilian men with hypotheses derived from past literature regarding conceptualizations of multiple minorities in business contexts (e.g., Pedulla, 2014; Everly et al., 2016; Strinić et al., 2021; Wilson et al., 2017), keeping the SCM in mind (e.g., Cuddy et al., 2007; Cuddy et al., 2011; Fiske et al., 2002; Fiske et al., 2007; Veit et al., 2022). All data and original materials may be found in online supplemental materials (OSF; [https://osf.io/ycn3f/?view\\_only=752cc5acd7ac4a28a9abede9e45a15c1](https://osf.io/ycn3f/?view_only=752cc5acd7ac4a28a9abede9e45a15c1)).

### Pilot study

While discrimination exists in Portugal, it may be more discreet than other countries such as the United States where explicit conservatism has materialized. For instance, while qualified Brazilians may not experience occupational discrimination at an organizational level (e.g., hiring practices), personal experiences paint stories of unfair treatments within the workplace upon employment (Diego-Cordero et al., 2022; Santos, 2013). Moreover, hearing Brazilian (versus Portuguese) accents may lead to prejudiced practices against immigrants by individuals with higher levels of prejudice (Souza et al., 2016). As such, a pilot study ( $N=118$ ) was developed to test preferences toward straight, gay, Portuguese, and Brazilian targets, providing a deeper understanding of the explicit and implicit preferences in Portugal toward these social groups, thus framing this project. From prior research which argues minimal correlations between implicit and explicit measures (e.g., Brauer and Er-rafy, 2011; Gawronski and de Houwer, 2014; Hofmann et al., 2005), it was hypothesized that implicit, not explicit, measures would suggest preferences against gay and Brazilian men.

### Method

**Participants.** Participants were recruited from a large university in exchange for course credit or a voucher to a local retailer. In total, 135 responses were recorded, with 118 meeting the inclusion criteria, aged between 18 and 56 ( $M=21.02$ ,  $SD=5.71$ ). Specifically, 10 responses had incomplete data, 3 were not Portuguese natives, and 4 indicated that they were not truthful when answering questions. The sample consisted mostly of women, with 16 men and 2 who did not specify their gender. Additionally, the sample was largely heterosexual, with 8 identifying as gay or lesbian, 28 reporting an unspecified sexuality, and 5 preferring not to answer<sup>1</sup>, and all participants were students. Participants were presented with this study without risk, and this study obtained ethical approval from the authors' institution.

**Table 1 Items in the Attitudes Toward Gay Men (ATG) Scale.**

Item	Mean	SD	Variance	Item-total correlation
1. Gay couples should be able to adopt children in the same manner as heterosexual couples*	1.59	1.19	1.41	0.68
2. I think gay men are disgusting	1.25	0.78	0.60	0.75
3. Gay men should not be allowed to teach school	1.27	0.98	0.95	0.48
4. Homosexuality is a perversion	1.26	0.90	0.82	0.66
5. Just as in other species, homosexuality is a natural expression of sexuality in human men*	1.82	1.49	2.23	0.62
6. If a man has homosexual feelings, he should do everything he can to get rid of them	1.29	0.86	0.73	0.85
7. I would not be too upset to learn if my son were a homosexual*	2.02	1.63	2.66	0.57
8. Homosexual behavior between two men is just plain wrong	1.31	0.95	0.90	0.83
9. The idea of homosexual marriage seems ridiculous to me	1.34	1.01	1.01	0.83
10. Homosexuality is merely a different kind of lifestyle that should not be condemned*	2.00	1.63	2.64	0.42

Items with an asterisk (\*) were reverse-coded.

**Table 2 Items in the Attitudes Toward Brazilian Men (ATB) Scale.**

Item	Mean	Std. deviation	Variance	Item-rest correlation
Brazilian couples should be able to adopt Portuguese children in the same manner as Portuguese couples*	1.88	1.41	1.98	0.33
I think Brazilians are disgusting	1.39	0.88	0.78	0.69
Brazilians should not be allowed to teach school	1.81	1.30	1.68	0.48
Brazilians are perverse	1.97	1.39	1.93	0.56
Just as in other cultures, Brazilian culture is a natural expression of human lifestyle*	1.63	1.270	1.61	0.54
If a person is attracted to a Brazilian, they should try to overcome the feelings	1.38	1.14	1.30	0.43
I would not be too upset if my child dated a Brazilian*	1.86	1.68	2.83	0.42
Relationships between Brazilians and Portuguese are just plain wrong	1.14	0.58	0.33	0.67
The idea of intermarriage between Brazilians and Portuguese seems ridiculous to me	1.20	0.71	0.51	0.71
Brazilian lifestyle is merely a different kind of cultures that should not be condemned*	1.79	1.23	1.51	0.49

Items with an asterisk (\*) were reverse-coded.

**Materials.** Explicit measures were adapted from the Attitudes Toward Lesbians and Gay Men (ATLG) scale (Herek, 1984; Herek, 1998) to better fit our targets. The Attitudes Toward Gay Men (ATG) scale implemented was a subset of 10 original items, as defined by Rosik (2007), while the Attitudes Toward Brazilian Men (ATB) scale was the same subscale as the ATG, but wording was changed to reference Brazilian individuals. Across both scales, a total of 20 items were analyzed (Tables 1 and 2).

Adapted versions of the implicit association test (IAT) (e.g., Carpenter et al., 2019; Greenwald et al., 1998) were utilized to test implicit preferences of the participants. As sexuality and nationality are separate categorical measures, two IATs were created in the Portuguese language. To test preference toward sexual orientation, the targets straight and gay appeared alongside the identifiers of good or bad; participants were required to accurately categorize neutral words regarding sexuality (e.g., heterosexual) and good or bad traits (e.g., beautiful) according to instructions. The same logic was applied to test preference toward nationality, whereas the targets Portugal and Brazil were paired with neutral words such as South America or Europe and participants were asked to repeat categorization measures with good or bad traits. IATs were designed using the iatgen software developed by Carpenter et al. (2019).

**Procedure.** Participants were asked to take part in a study regarding the perceptions of certain groups in Portuguese society. All participants read their rights and gave full informed consent before commencing the study, which took <15 min to complete. After reading instructions, participants were randomly shown either the ATG or ATB first, with randomized items to reduce response bias. In each measure, participants were instructed to rate each statement on a Likert-type scale from 1 (Completely

Disagree) to 7 (Completely Agree). Upon completion, participants were given the option to take a short break before continuing. Next, participants were randomly shown either the sexuality or nationality IAT first, which were further randomized to account for permutations, and were asked to correctly categorize each word as quickly as possible. Correct answers were required before the participant was allowed to continue and if the participant responded too quickly, their answers were nullified. To increase statistical power, each IAT included 7 trials, some of which were counted as practice and not recorded for analysis. After completing both IATs, participants were thanked for their time and were awarded either course credit or a voucher to a local retailer.

**Results**

**Explicit measures.** Confirmatory factor analysis (CFA) was performed to verify each scale’s structure and models adjustment analyzed using a combination of the models’ chi-square, the Tucker–Lewis fit index (TLI > 0.90; Tucker and Lewis, 1973; Hu and Bentler, 1998), the comparative fit index (CFI > 0.90; Bentler, 1990; Hu and Bentler, 1998), the root mean square error of approximation (RMSEA < 0.08; Browne and Cudeck, 1992; Hu and Bentler, 1998) with 90% confidence interval (CI), and the standardized root mean square residual (SRMR < 0.08, Hu and Bentler, 1998). Models were specified following theoretically supported modification indices (>5; correlated residuals between items 10 and 5 and items 4 and 2 for ATG and ATB scales). The CFAs were acceptable for a unifactorial solution (ATG:  $\chi^2(33) = 123.201, p < 0.001, CFI = 0.89, TLI = 0.85, RMSEA = 0.15, 90\% CI [0.12, 0.18], SRMR = 0.07, factor loadings p < 0.001$ ; ATB:  $\chi^2(33) = 46.175, p = 0.064, CFI = 0.97, TLI = 0.96, RMSEA = 0.06, 90\% CI [0.00, 0.10], SRMR = 0.06, factor$

loadings  $p < 0.001$ , except for items ATB5 and ATB10 ( $p = 0.001$ ) and item ATB7 ( $p = 0.002$ ). Reliability was good (Nunnally and Bernstein, 1994) and performed using coefficient omega (McDonald, 1999;  $\omega_{ATG} = 0.88$ , CI [0.85, 0.91];  $\omega_{ATB} = 0.80$ , CI [0.74, 0.85]). Please refer to Tables 1 and 2 for a visual representation of the scales' data.

Individual items across both explicit measures generally received means of less than 2, indicating low explicit prejudice toward each target group (i.e., gay men and Brazilian men). Because of this, high levels of skewness were common upon examining each item, however, due to the explicit and bipolar nature of the scale, this is not a cause for concern. Rather, the levels of skewness confirm typical assumptions of prejudicing, where individuals may not be willing to explicitly express controversial opinions.

Potential differences in evaluations across sexual orientations were examined by conducting a series of independent samples  $t$ -tests with all straight participants grouped and all participants marking either gay/lesbian or other LGBT grouped. Results indicated largely no differences between sexual orientations ( $p$ -values  $> 0.05$ ), with the exception of ATG1 and ATG7. Specifically, straight participants showed greater signs of explicit prejudice toward only these two items, when compared to gay, lesbian, and other LGBT participants. Importantly, however, the overwhelming majority of items (90%) received similar ratings across participants.

**Implicit measures.** The sexuality IAT indicated weak preferences for straight individuals over gay individuals ( $M = 0.11$ ,  $SD = 0.40$ ),  $t(116) = 3.14$ ,  $p = 0.002$ ,  $d = 0.29$ . The timeout rate was  $< 0.001$ , and one participant was dropped due to excessive speed. Importantly, the error rate for the first IAT was good (0.08), as IAT measures typically produce error rates of  $< 0.10$  (Rudman, 2011). Additionally, the reliability score was acceptable (Cronbach's  $\alpha = 0.75$ ), as an alpha score of  $> 0.70$  is generally sustainable (Greenwald et al., 2009). Therefore, it can be concluded that the first IAT was reliable. The second IAT (nationality) revealed moderate implicit preferences for Portuguese nationals over Brazilian nationals ( $M = 0.40$ ,  $SD = 0.36$ ),  $t(117) = 12.03$ ,  $p < 0.001$ ,  $d = 1.11$ . The timeout rate of participants was  $< 0.001$ , and no participants were excluded due to excessive speed. Again, the error rate was revealed to be 0.08, and reliability was found to be suitable (0.73). As such, the second IAT may also be considered reliable.

To compare potential differences in sexual orientation, a second round of independent samples  $t$ -tests were performed using the same demographic categories as the explicit measures. An initial  $t$ -test comparing sexuality  $d$ -scores revealed that straight participants ( $M = 0.26$ ,  $SD = 0.31$ ) were more likely to show preference for straight individuals, while LGBT participants ( $M = -0.16$ ,  $SD = 0.43$ ) were more likely to show preference for gay individuals,  $t(52.66) = -5.24$ ,  $p < 0.001$ ,  $d = -1.12$ . Additionally, straight participants were found to show greater preferences for Portuguese individuals ( $M = 0.47$ ,  $SD = 0.35$ ) than LGBT participants were ( $M = 0.28$ ,  $SD = 0.35$ ).

Finally, correlations between explicit and implicit measures were examined. Expectedly, there were no relationships indicated between explicit and implicit measures ( $p$ -values  $> 0.05$ ), given prior findings of minimal correlations between these types of measures in psychology (e.g., Brauer and Er-rافی, 2011; Gawronsky and de Houwer, 2014; Gawronsky and Hahn, 2019; Hofmann et al., 2005; McConahay, 1986). Specifically, due to factor such as participant biases (or social obligations), differences between unconscious and conscious judgment, or slight differences in what each test actually measures, low correlations are common in behavioral testing. However, a strong positive

correlation between the ATG and ATB scales (Pearson's  $r = 0.65$ ,  $p < 0.001$ ) was found, suggesting that individuals higher in explicit prejudice toward gay men were also higher in explicit prejudice toward Brazilian men. Moreover, there was a weak positive correlation found between participants' individual IAT  $d$ -scores ( $r = 0.19$ ,  $p = 0.04$ ), indicating a relationship between preferences toward straight and Portuguese individuals. In other words, as  $d$ -scores for the implicit preferences toward straight individuals increased, so did those toward Portuguese individuals, suggesting preferences for ingroup members.

As expected, results from the pilot study suggested minimal negative explicit attitudes against gay or Brazilian men and weak to moderate implicit preferences for straight and Portuguese men, mirroring trends of prejudice and discrimination found in Portuguese society (e.g., Hines and Santos, 2017; Mendes and Candeias, 2013; Santos, 2013). Additionally, differences between sexual orientations arose, where straight participants showed more implicit preferences toward straight and Portuguese individuals than LGBT participants; furthermore, it is important to note that the sample included mostly women and results should be considered carefully. Specifically, women may hold different opinions than men of foreigners and/or gay men, which might have influenced findings. Yet, prejudice is not always a result of stereotypes; that is, stereotyping may be described as comparisons between groups while prejudice is the manifestation of negative affect toward a specific group (Brauer and Er-rافی, 2011). Therefore, while results provide interesting insights into purported attitudes, it may not be indicative of actual behaviors. Further, while prejudice does exist in Portugal, it may be inconspicuously executed; importantly, this rejects trends found in other Western countries, bringing into question past research's generalizability across similar cultures. As such, Experiments 1 and 2 were created to explore this assumption of discreet prejudice while simultaneously exploring the dimensions of warmth and competence in hiring decisions.

**Experiment 1.** As highlighted, Portuguese participants did not show negative explicit attitudes toward either minority group, separately (gay or Brazilian). Experiment 1 was developed to test the assumption that explicit competence in a CV will result in equal perceptions across majority and minority groups, with two theories in mind. First, as triggering competence may influence participants' evaluations for the better (e.g., Veit et al., 2022), and providing extra information signaling competence may decrease judgment complexity by allowing participants to anchor their judgments to objective information (e.g., Bodenhausen and Lichtenstein, 1987; Bodenhausen and Wyer, 1985; Correll et al., 2015; Locksley et al., 1982; Macrae et al., 1994), it was hypothesized that Portuguese and Brazilian candidates would be evaluated similarly in both warmth and competence. Second, when combining Portugal's anti-discrimination rhetoric (ILGA, 2022; Santos, 2013) with the fact that higher skill levels may reduce negative attitudes toward Portuguese gay members (Bayrakdar and King, 2023), it was hypothesized that gay targets would also be rated similar in warmth and competence when compared to straight targets. In other words, straight Portuguese men, gay Portuguese men, straight Brazilian men, and gay Brazilian men would all be conceptualized similarly, going against predictions of the SCM and favoring the compartmentalized view of stereotyping (e.g., Fiske et al., 2002; Petsko et al., 2022).

## Method

**Participants.** Participants were recruited through two large universities in exchange for course credit or a voucher to a local retailer. Upon data collection, 90 responses were considered, with

**Table 3 Reliability of Items in Experiment 1.**

Dimension	Consolidated measure	Cronbach's $\alpha$	Item	Item-rest correlation
Warmth	Friendliness	0.74	It is probable that the candidate will get along with colleagues	0.61
			The candidate seems friendly	0.60
			The candidate would care more about themselves than other colleagues*	0.55
Threat		0.73	The candidate is not likely to challenge company rules*	0.46
			It is probable that the candidate engages in illegal activities	0.49
			The candidate may be rude to customers	0.75
Competence	Competence	0.79	The candidate does not have the qualifications for the job*	0.56
			The candidate seems competent	0.78
			It is probable that the candidate would be a good manager	0.65
Hirability	Hirability	0.68	I would not recommend the candidate for a final interview*	0.36
			I would hire the candidate	0.66
			The candidate would be a bad team player*	0.50

Items with an asterisk (\*) were reverse-coded.

12 excluded due to failed stimuli checks and 1 thrown out due to an extreme, outlying salary proposal. To pass the checks, participants were required to correctly answer which year the candidate graduated university and the role of the candidate in their selected organization; importantly, we did not ask participants to recall candidates' sexual orientation or nationality so as not to accidentally instill priming effects. A power analysis was not conducted to determine sample size, but rather, we aimed to include as many participants as resources allowed. Of the 77 analyzed responses, 47 were men, 29 were women, and 1 did not specify their gender. Ages ranged from 19 to 29 ( $M = 22.13$ ,  $SD = 1.87$ ), consisting of mostly heterosexual ( $N = 67$ ) individuals. Participants gave their informed consent to participate, and this study was approved by the ethics committee of the authors' institution.

**Materials.** CVs and measures were adapted from prior research on hiring discrimination (e.g., Cotton et al., 2008; Granberg et al., 2020; Everly et al., 2016; Pedulla, 2014; Strinić et al., 2021; Veit et al., 2022). Specifically, CVs were developed with past publications in mind, while considering generic CV formatting in Portugal (Appendices A/B). To manipulate the nationality of the candidates, well-known Portuguese or Brazilian universities were chosen; furthermore, names of the candidates were taken from common names in each respective country (e.g., IBGE, 2016; Nós Portugueses, 2023), and the personal statement explicitly indicated nationality. Sexual orientation was manipulated by selecting stereotypically straight or gay activities (e.g., football or gymnastics) and neutral or stereotypical organizations (e.g., tourism or LGBT rights) in which the candidates engaged, in line with Pedulla (2014). Finally, all candidates had substantial previous experience, indicating high explicit competence. Fifteen items were used as measures in this study, which were consolidated for analyses. Specifically, three items related to friendliness (e.g., Pedulla, 2014; Strinić et al., 2021), and three related to perceived threat (e.g., Pedulla, 2014) were combined to test the dimension of warmth. Additionally, three items regarding competence (e.g., Pedulla, 2014; Strinić et al., 2021), and three more related to hirability (Everly et al. et al., 2016; Veit et al., 2022) were combined to test overall competence. Masculinity and femininity were tested on two bipolar scales, while a salary proposal task sought to find potential discriminatory intents.

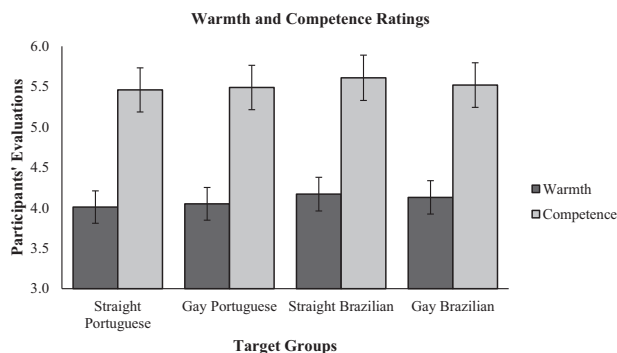
**Procedure.** After agreeing to participate, participants were given the instruction to roleplay as a human resource manager in charge of hiring decisions for a large company in an attempt to

increase external validity and mimic real-life scenarios (see Cotton et al., 2008; Pedulla, 2014; Wulff and Villadsen, 2020). Next, participants were instructed to evaluate one candidate's CV based on several qualities expected of a successful manager, which were listed before the commencement of the study<sup>2</sup>. Importantly, participants only viewed one CV and were randomly assigned to one of the four conditions. Following, participants were asked to read the CV carefully before evaluating the candidate on 14 items from 1 (Completely Disagree) to 7 (Completely Agree), then proposing a starting salary for the candidate based on their qualifications, if they were to be hired. Finally, participants reported their demographic information and received payment/credit for their time; participants did not receive traditional incentivization common in economics studies (e.g., Cox et al., 2018; Croson, 2006; Hertwig and Ortmann, 2001) as they received payment at the end of the study and some research suggests incentivization alone is not enough to greatly change final results (e.g., Hascher et al., 2021).

## Results

To test the main hypotheses, the two consolidated measures (warmth and competence) were analyzed using a series of 2 (nationality)  $\times$  2 (sexual orientation) analysis of variance tests (ANOVAS) across conditions to provide a deeper understanding of participants' evaluations (refer to Table 3 for the reliability of these measures). All measures received adequate reliability scores and were deemed suitable for further analysis (Peters, 2014). Simultaneously, there was a moderately strong positive correlation between masculinity and femininity ratings,  $r = 0.55$ ,  $p < 0.001$  (femininity was reverse-coded).

Warmth scores were created by averaging the scores of friendliness and threat measures, while competence scores were created by averaging the scores of competence and hirability measures, resulting in two overall averages. Before examining each measure, potential gender differences were first examined; participants' sexual orientation was not adequate for analysis, as not every condition contained a suitable number of participants ( $< 5$ ). A 2 (participant gender)  $\times$  2 (target nationality)  $\times$  2 (target sexual orientation) ANOVA was conducted for each measure. Statistical significant interactions between all three variables were obtained in both warmth scores,  $F(1, 68) = 7.05$ ,  $p = 0.010$ ,  $\eta^2 = 0.09$ , and on salary proposals,  $F(1, 68) = 7.23$ ,  $p = 0.009$ ,  $\eta^2 = 0.08$ , but post-hoc Tukey's comparisons revealed no between-gender differences for each specific target. Two no significant interactions were found between variables when considering targets' perceived competency,  $F(1, 68) = 3.87$ ,  $p = 0.053$ ,



**Fig. 1 Evaluations of warmth and competence for targets in experiment 1.** Error bars represent 95% confidence intervals. No significant differences in the perceived warmth or competence of groups were found.

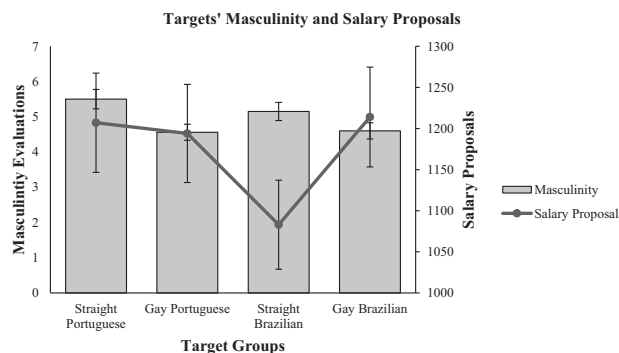
$\eta^2 = 05$ , and perceived masculinity of candidates,  $F(1, 68) = 0.18$ ,  $p = 0.676$ ,  $\eta^2 < 0.01$ . Next, the same measures were examined with all participants.

An initial  $2 \times 2$  ANOVA on the dimension of warmth did not indicate a significant main effect of nationality; that is, participants did not evaluate Portuguese candidates ( $M = 4.03$ ,  $SD = 0.31$ ) as statistically less warm than Brazilian candidates ( $M = 4.15$ ,  $SD = 0.40$ ),  $F(1, 73) = 2.00$ ,  $p = 0.161$ ,  $\eta^2 = 0.027$ . Additionally, no main effect of sexual orientation was found, whereas straight ( $M = 4.09$ ,  $SD = 0.31$ ) and gay ( $M = 4.09$ ,  $SD = 0.42$ ) candidates were not perceived differently in warmth,  $F(1, 73) < 0.01$ ,  $p = 0.980$ ,  $\eta^2 < 0.01$ . Moreover, the analysis did not reveal a significant interaction between straight Portuguese ( $M = 4.01$ ,  $SD = 0.31$ ), gay Portuguese ( $M = 4.05$ ,  $SD = 0.33$ ), straight Brazilian ( $M = 4.17$ ,  $SD = 0.29$ ), or gay Brazilian ( $M = 4.13$ ,  $SD = 0.50$ ) candidates on warmth evaluations,  $F(1, 73) = 0.23$ ,  $p = 0.637$ ,  $\eta^2 < 0.01$  (Fig. 1).

When considering the dimension of competence, a second  $2 \times 2$  ANOVA did not indicate a significant main effect of nationality; Portuguese ( $M = 5.29$ ,  $SD = 1.00$ ) and Brazilian candidates ( $M = 5.32$ ,  $SD = 0.94$ ) were not evaluated differently on perceived competence,  $F(1, 73) = 0.01$ ,  $p = 0.908$ ,  $\eta^2 < 0.01$ . Further, no significant main effect of sexual orientation was revealed, meaning straight ( $M = 5.30$ ,  $SD = 0.91$ ) and gay ( $M = 5.32$ ,  $SD = 1.02$ ) candidates were not perceived differently in competence,  $F(1, 73) = 0.01$ ,  $p = 0.921$ ,  $\eta^2 < 0.01$ . Importantly, the ANOVA did not reveal a significant interaction between straight Portuguese ( $M = 5.21$ ,  $SD = 0.96$ ), gay Portuguese ( $M = 5.38$ ,  $SD = 1.06$ ), straight Brazilian ( $M = 5.38$ ,  $SD = 0.89$ ), or gay Brazilian ( $M = 5.26$ ,  $SD = 1.01$ ) candidates on evaluations of competence,  $F(1, 73) = 0.44$ ,  $p = 0.511$ ,  $\eta^2 = 0.01$  (Fig. 1).

Considering masculinity, a  $2 \times 2$  ANOVA found no significant main effect of nationality ( $F(1, 73) = 0.28$ ,  $p = 0.597$ ,  $\eta^2 < 0.01$ ) and no significant interaction between nationality and sexual orientation ( $F(1, 73) = 0.47$ ,  $p = 0.495$ ,  $\eta^2 = 0.01$ ). However, a significant main effect for sexual orientation was revealed, as gay candidates ( $M = 4.58$ ,  $SD = 1.27$ ) were perceived as more feminine than straight candidates ( $M = 5.32$ ,  $SD = 1.23$ ),  $F(1, 73) = 6.76$ ,  $p = 0.011$ ,  $\eta^2 = 0.08$ , suggesting participants accurately guessed targets' sexual orientations (lower scores represent greater femininity; Fig. 2).

A final  $2 \times 2$  ANOVA indicated no significant main effects of nationality ( $F(1, 73) = 1.89$ ,  $p = 0.173$ ,  $\eta^2 = 0.02$ ), indicating no differences in salary proposals for Portuguese ( $M = 1201.08$ ,  $SD = 168.85$ ) or Brazilian targets ( $M = 1148.60$ ,  $SD = 173.60$ ). Moreover, no significant main effect on sexual orientation ( $F(1, 73) = 2.40$ ,  $p = 0.126$ ,  $\eta^2 = 0.03$ ) was found between straight ( $M = 1143.69$ ,  $SD = 179.22$ ) and gay targets ( $M = 1204.74$ ,



**Fig. 2 Evaluations of Masculinity and Salary Proposals for Targets in Experiment 1.** Straight targets were rated as significantly more masculine than gay targets,  $F(1, 73) = 6.76$ ,  $p = 0.011$ ,  $\eta^2 = 0.08$ . No significant differences were found when considering salary. Error bars represent 95% confidence intervals.

$SD = 161.27$ ). Finally, no interaction between straight Portuguese ( $M = 1207.37$ ,  $SD = 185.08$ ), gay Portuguese ( $M = 1194.44$ ,  $SD = 154.96$ ), straight Brazilian ( $M = 1083.20$ ,  $SD = 154.55$ ), and gay Brazilian ( $M = 1214.00$ ,  $SD = 170.21$ ) candidates was found ( $F(1, 73) = 3.57$ ,  $p = 0.063$ ,  $\eta^2 = 0.04$ ), although, notably, straight Brazilian candidates received the lowest proposals (Fig. 2).

First, to examine correlations between warmth and competence versus salary proposals, Pearson's  $r$  was calculated. Expectedly, aligned with past organizational research, warmth and salary proposals were negatively correlated ( $r = -0.25$ ,  $p = 0.030$ ) and competence and salary proposals were positively correlated ( $r = 0.43$ ,  $p < 0.001$ ). To consider potential relationships between separated variables (i.e., warmth, friendliness, competence, and threat), Pearson's  $r$  was examined for each pair. Hirability and friendliness were positively correlated with competence ( $r = 0.76$ ,  $p < 0.001$ ,  $r = 0.55$ ,  $p < 0.001$ , respectively), and were moderately correlated with each other,  $r = 0.59$ ,  $p < 0.001$ . As expected, hirability, friendliness, and competence were all negatively correlated with perceived threat level ( $r = -0.63$ ,  $p < 0.001$ ,  $r = -0.76$ ,  $p < 0.001$ ,  $r = -0.56$ ,  $p < 0.001$ , respectively).

Notably, eta squared indicated low effect sizes for some of the analyses in Experiment 1 (likely due to a small sample produced by resource constraints), increasing the probability of false claims and non-applicable findings – two important statistical considerations (e.g., Anderson et al., 2017; Sommet et al., 2023). However, results were similar in nature to those of Veit et al. (2022), which found that triggering competence did not significantly affect the response rates of native versus immigrant targets' CVs, and to those of Locksley et al. (1982) which found that, when presented with individuating information, participants were less likely to rely on stereotypic beliefs to form judgments.

Nevertheless, results from Experiment 1 supported the main hypotheses. That is, Portuguese, Brazilian, straight, and gay participants were all evaluated similarly on the dimensions of warmth and competence when explicit competence was triggered. Participants did not consider Brazilian applicants as less desirable, perhaps partly explained by the context in which candidates were presented (i.e., high explicit competence), which could have extinguished stereotypical assumptions related to [low-skilled] Brazilian workers, comparable to results from Veit et al. (2022). Furthermore, providing objective information may have provided psychological anchors by which room for social stereotypes to influence judgments was decreased (e.g., Locksley et al., 1982; Wilson, 1978).

**Table 4 Reliability of Items in Experiment 2.**

Dimension	Consolidated measure	Cronbach's $\alpha$	Item	Item-rest correlation
Warmth	Friendliness	0.25	It is probable that the candidate will get along with colleagues	0.09
			The candidate seems friendly	0.15
			The candidate would care more about themselves than other colleagues*	0.17
Competence	Threat	0.63	The candidate is not likely to challenge company rules*	0.35
			It is probable that the candidate engages in illegal activities	0.53
			The candidate may be rude to customers	0.45
Competence	Competence	0.57	The candidate does not have the qualifications for the job*	0.42
			The candidate seems competent	0.33
			It is probable that the candidate would be a good manager	0.42
Hirability	Hirability	0.65	I would not recommend the candidate for a final interview*	0.44
			I would hire the candidate	0.49
			The candidate would be a bad team player*	0.45

Items with an asterisk (\*) were reverse-coded.

**Experiment 2.** Experiment 1 included objective information for highly-skilled candidates from which participants could draw conclusions based on the adequateness of the candidate's CV, but in reality, such pertinent information is not always available, increasing uncertainty and complexity when considering the characteristics of a candidate. Therefore, Experiment 2 sought to create uncertainty (and, more difficulty) in participant judgments by introducing candidates with a lower skill level, without changing the nature of the task at hand. In the absence of straightforward evidence, judgments may be more theory-driven (Bodenhausen and Wyer, 1985); that is, stereotypes may be used as an instrument of cognitive simplification, particularly when faced with tasks including complex judgments (e.g., Tajfel, 1981). Moreover, based on the nature of heuristic processing, stereotypes are more likely to be applied when information processing demands are complex (e.g., Bodenhausen and Wyer, 1985; Macrae et al., 1994; Nisbett and Ross, 1980; Wyer and Carlston, 1979), and additionally, in investigations of highly complex decision tasks, stereotypic influences typically predominate over that of relevant nonstereotypic information (Dipboye et al., 1975; Grant and Holmes, 1981; Heneman, 1977). In this case, complexity was perceived as a function of providing less objective information to participants in the experimental design as a byproduct of triggering less explicit competence of the candidates. According to previous literature regarding the probability of using stereotype-based judgments when less objective information is provided, two main hypotheses were developed according to intersectional assumptions. First, it was predicted that Portuguese applicants would be evaluated similarly in both warmth and competence, while straight Brazilians be rated as less competent and less warm than gay Brazilians who would "benefit" due to their multiple minority status; that is, stereotypical associations of being gay would outweigh those of Brazilians (Pedulla, 2014; Petsko and Bodenhausen, 2019b; Strinić et al., 2021). Second, it was hypothesized that straight Brazilians would be offered lower starting salaries than all other groups.

## Method

**Participants.** Participants were recruited through a large university in exchange for course credit. Of the original responses, 11 were excluded due to missing data and were recuperated using another sample of students from the same university to reach a total of 120 responses. A power analysis was not conducted to determine sample size, but rather, we aimed to include as many participants as resources allowed. Participants were aged between 19 and 59 ( $M = 25.15$ ,  $SD = 6.03$ ), with 65 men, 52 women, and 3 who did not clarify their gender. Participants were mostly

heterosexual, with only 4 indicating gay or 'other' as their sexual orientation, and all were students. As results from Experiment 1 indicated no differences in occupational status, it was decided to include only students in Experiment 2, for feasibility. Participants gave their full consent to partake in this study, and this study was approved by the ethical committee of the authors' institution.

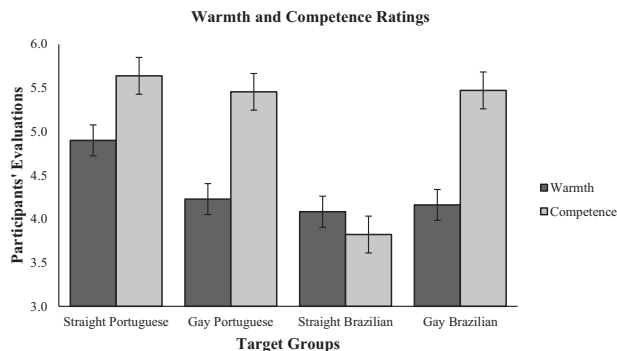
**Materials and procedure.** Measures were roughly the same as those from Experiment 1, but masculinity and femininity were consolidated into a single Likert-type scale. CVs maintained the same nationality and sexuality manipulations as Experiment 1, but instead, provided less objective information regarding managerial success and were adapted to include less-experienced applicants, which indicated a lack of explicit competence (Appendices C/D). The procedure was identical to that of Experiment 1, except the qualities expected of a successful manager were not presented to participants before evaluating the CVs. Again, participants were randomly assigned to one condition and were asked to rate the 13 measures on a Likert-type scale ranging from 1 (Totally Disagree) to 7 (Totally Agree). Afterwards, participants were asked to complete the salary proposal task and upon completion of the study, participants were awarded course credit.

## Results

Again, a series of  $2 \times 2$  ANOVAs were conducted to test the main hypotheses. For the reliability of items and measures used in ANOVA testing, please refer to Table 4. Reliability scores were lower than those in Experiment 1, with friendliness receiving poor reliability. However, analysis continued as planned since  $\alpha$  scores were suitable for the same measures in Experiment 1, and, lower  $\alpha$  scores may be a product of increased ambiguity from the less objective information presented (e.g., Peters, 2014). Masculinity and femininity were combined into one Likert-type scale and was analyzed using ANOVA tests instead of correlations.

Warmth scores were again created by averaging the scores of friendliness and threat, while competence scores were created by averaging the scores of competence and hirability. Potential gender differences were again examined before conducting the main analyses; participants' sexual orientation was not adequate for analysis, as not every condition contained a suitable number of participants ( $<5$ ). A  $2$  (participant gender)  $\times 2$  (target nationality)  $\times 2$  (target sexual orientation) ANOVA was conducted for each measure and indicated no significant interactions when considering warmth,  $F(1, 109) = 0.01$ ,  $p = 0.922$ ,  $\eta^2 < 0.01$ , competence,  $F(1, 109) = 0.01$ ,  $p = 0.937$ ,  $\eta^2 < 0.01$ , salary proposals,





**Fig. 3 Evaluations of Warmth and Competence for Targets in**

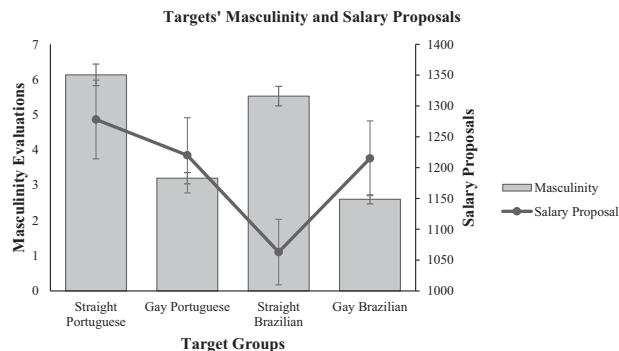
**Experiment 2.** Straight Portuguese men were perceived as warmer than all other targets (which were similar in ratings),  $F(1, 116) = 17.54, p < 0.001, \eta^2 = 0.10$ , and straight Brazilian men were perceived as less competent than all other groups (which were similar in ratings),  $F(1, 116) = 74.24, p < 0.001, \eta^2 = 0.24$ . Error bars represent 95% confidence intervals.

$F(1, 109) = 0.36, p = 0.548, \eta^2 < 0.01$ , or masculinity,  $F(1, 109) = 0.14, p = 0.714, \eta^2 < 0.01$ .

To test all participants' evaluations of warmth, a  $2 \times 2$  ANOVA was first conducted. The ANOVA revealed a significant main effect of nationality on warmth ratings, where Portuguese candidates ( $M = 4.56, SD = 0.59$ ) were perceived as warmer than Brazilian candidates ( $M = 4.12, SD = 0.49$ ),  $F(1, 116) = 24.33, p < 0.001, \eta^2 = 0.14$ . Additionally, a significant main effect of sexual orientation on warmth ratings was found, indicating straight candidates ( $M = 4.49, SD = 0.59$ ) were evaluated as warmer than gay candidates ( $M = 4.19, SD = 0.54$ ),  $F(1, 116) = 11.02, p = 0.001, \eta^2 = 0.07$ . Importantly, a significant interaction between nationality and sexual orientation was found ( $F(1, 116) = 17.54, p < 0.001, \eta^2 = 0.10$ ), while a post-hoc Tukey's test indicated that straight Portuguese candidates ( $M = 4.90, SD = 0.41$ ) were perceived as statistically warmer than gay Portuguese ( $M = 4.23, SD = 0.55$ ), straight Brazilian ( $M = 4.08, SD = 0.45$ ), and gay Brazilian candidates ( $M = 4.16, SD = 0.54$ ) ( $p$ -values  $< 0.001$ ), while all other groups were not significantly different from each other (Fig. 3).

A second  $2 \times 2$  ANOVA on the dimension of competence again found a significant main effect of nationality on competence ratings, where Portuguese candidates ( $M = 5.55, SD = 0.58$ ) were perceived as more competent than Brazilian candidates ( $M = 4.65, SD = 1.02$ ),  $F(1, 116) = 71.56, p < 0.001, \eta^2 = 0.23$ . Moreover, a significant main effect on sexual orientation indicated gay candidates ( $M = 5.46, SD = 0.62$ ) were, on average, rated as more competent than straight candidates ( $M = 4.73, SD = 1.06$ ),  $F(1, 116) = 47.51, p < 0.001, \eta^2 = 0.15$ . Importantly, a significant interaction between variables was found ( $F(1, 116) = 74.24, p < 0.001, \eta^2 = 0.24$ ), with a post-hoc Tukey's test indicating that straight Brazilians ( $M = 3.82, SD = 0.67$ ) were evaluated as significantly less competent than straight Portuguese ( $M = 5.64, SD = 0.35$ ), gay Portuguese ( $M = 5.45, SD = 0.74$ ), and gay Brazilian candidates ( $M = 5.47, SD = 0.49$ ) ( $p$ -values  $< 0.001$ ), while all other groups were not significantly different from each other (Fig. 3).

A third  $2 \times 2$  ANOVA found significant main effects of nationality on masculinity, where Brazilian candidates ( $M = 4.07, SD = 1.83$ ) were perceived as more feminine than Portuguese candidates ( $M = 4.67, SD = 1.76$ ),  $F(1, 116) = 10.19, p = 0.002, \eta^2 = 0.03$ . Additionally, a significant main effect of sexual orientation was found, indicating gay candidates ( $M = 2.90, SD = 1.07$ ) were viewed as more feminine than straight candidates ( $M = 5.83, SD = 1.06$ ),  $F(1, 116) = 243.13, p < 0.001,$



**Fig. 4 Evaluations of Masculinity and Salary Proposals for Targets in**

**Experiment 1.** Straight targets were rated as significantly more masculine than gay targets ( $F(1, 116) = 243.13, p < 0.001, \eta^2 = 0.66$ ), and separately, straight Brazilians were offered the lowest starting salary when compared to all other groups (which were similar in proposals),  $F(1, 116) = 20.59, p < 0.001, \eta^2 = 0.13$ . Error bars represent 95% confidence intervals.

$\eta^2 = 0.66$ . No statistically significant interaction between variables was found ( $p > 0.999$ , but post-hoc Tukey's test revealed that both gay Portuguese ( $M = 3.20, SD = 1.06$ ) and gay Brazilian candidates ( $M = 2.60, SD = 1.00$ ) were statistically more feminine than both straight Portuguese ( $M = 6.13, SD = 0.86$ ) and straight Brazilian candidates ( $M = 5.53, SD = 1.17$ ), respectively ( $p$ -values  $< 0.001$ ; Fig. 4).

A final  $2 \times 2$  ANOVA indicated significant main effects of nationality on salary proposals, with Brazilian candidates ( $M = 1139.00, SD = 153.19$ ) being offered less than Portuguese candidates ( $M = 1249.17, SD = 122.30$ ),  $F(1, 116) = 22.59, p < 0.001, \eta^2 = 0.14$ . Moreover, the analysis indicated a significant main effect of sexual orientation on salary proposals, where gay candidates ( $M = 1217.50, SD = 116.38$ ) were offered, on average, more than straight candidates ( $M = 1170.67, SD = 173.02$ ),  $F(1, 116) = 4.08, p = 0.046, \eta^2 = 0.03$ . Importantly, an interaction between variables was found ( $F(1, 116) = 20.59, p < 0.001, \eta^2 = 0.13$ ), and a post-hoc Tukey's test found that straight Brazilian candidates ( $M = 1063.00, SD = 137.37$ ) were offered statistically less starting salaries than straight Portuguese ( $M = 1278.33, SD = 134.35$ ), gay Portuguese ( $M = 1220.00, SD = 103.06$ ), and gay Brazilian candidates ( $M = 1215.00, SD = 130.09$ ) ( $p$ -values  $< 0.001$ ), while all other groups were not significantly different (Fig. 4).

Correlative tests regarding warmth and competence versus salary proposals revealed a deviation from the results in Experiment 1. While competence and salary proposals were positively correlated ( $r = 0.26, p = 0.004$ ), warmth and salary proposals were also positively correlated ( $r = 0.45, p < 0.001$ ), likely due to the heightened warmth scores of straight Portuguese candidates (explained in full below). To consider potential relationships between separated variables (i.e., warmth, friendliness, competence, and threat), Pearson's  $r$  was examined for each pair. Notably, relationships differed from those in Experiment 1. Specifically, hirability was negatively correlated with friendliness ( $r = -0.27, p = 0.003$ ), positively correlated with competence ( $r = 0.51, p < 0.001$ ), and positively correlated with threat rating ( $r = 0.28, p = 0.002$ ). Friendliness was not correlated with competence ( $r = -0.10, p = 0.258$ ), but was negatively correlated with perceived threat ( $r = -0.35, p < 0.001$ ). Finally, competence and threat rating were not correlated ( $r = 0.15, p = 0.098$ ).

Unexpectedly, straight Portuguese men were regarded as warmer than all other target groups although this makes sense due to assumptions from the SCM (Fiske et al., 2002) in which dimensions are attributed to outgroup members; that is, it is

plausible that the male-majority sample rated other male Portuguese targets as high in warmth in an ambiguous scenario. As expected, however, straight Brazilian applicants were perceived as less competent than gay Brazilian, straight Portuguese, and gay Portuguese applicants when explicit competence was not triggered. Furthermore, straight Brazilians were offered the lowest starting salary of any group, indicating the possibility of harmful real-world discrimination. As such, Experiment 2 offered findings similar to that of Pedulla (2014), in which explicit competence was also not triggered and straight minority members were viewed negatively. As competence was not triggered Experiment 2, increased judgment complexity influenced the role of social stereotypes when making evaluations. That is, when participants were not presented with individuating information, “easy” stereotypical judgments appeared which might have been participants’ response to dealing with increased complexity (Bodenhausen and Lichtenstein, 1987; Bodenhausen and Wyer, 1985; Correll et al., 2015; Locksley et al., 1982; Macrae et al., 1994). Finally, and importantly, eta squared indicated higher effect sizes in Experiment 2, providing support for the statistical strength and relevance of the findings from this project.

**Mega-analysis between experiments.** Finally, a mega-analysis between experiments was conducted to determine the effect, if any, of the type of CV on the evaluations of targets. To do so, a 2 (type of CV)  $\times$  2 (nationality)  $\times$  2 (sexual orientation) three-way ANOVA was conducted across the four main measures and compared with post-hoc Tukey’s comparisons. First, a statistically significant interaction between variables was revealed on warmth ratings,  $F(1, 189) = 10.10$ ,  $p = 0.002$ ,  $\eta^2 = 0.04$ . Post-hoc Tukey’s comparisons indicated an effect of CV type on straight Portuguese candidates only, in which straight Portuguese candidates in the low competence scenario ( $M = 4.90$ ,  $SD = 0.41$ ) were perceived as warmer than those in the high competence scenario ( $M = 4.01$ ,  $SD = 0.31$ ). A second 2  $\times$  2  $\times$  2 ANOVA found a significant interaction between variables when considering competence scores,  $F(1, 189) = 22.96$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ . Expectedly, only straight Brazilian candidates received statistically different ratings based on levels of competence, where straight Brazilians in the high competence scenario ( $M = 5.38$ ,  $SD = 0.89$ ) were perceived as more competent than those in the low competence scenario ( $M = 3.82$ ,  $SD = 0.67$ ).

Additional three-way ANOVAs examining targets’ masculinity and salary proposals were also conducted. A nonsignificant interaction was revealed when considering targets’ masculinity scores,  $F(1, 189) = 0.36$ ,  $p = 0.549$ ,  $\eta^2 < 0.01$ , but post-hoc differences arose for gay targets. Specifically, gay Portuguese and gay Brazilians in the low competence scenario ( $M = 3.20$ ,  $SD = 1.06$ ,  $M = 2.60$ ,  $SD = 1.00$ , respectively) were perceived as more feminine than gay Portuguese and gay Brazilians in the high competence scenario ( $M = 4.56$ ,  $SD = 1.43$ ,  $M = 4.60$ ,  $SD = 1.24$ , respectively). Finally, a nonsignificant interaction between variables was found when examining participants’ salary proposals,  $F(1, 189) = 0.63$ ,  $p = 0.428$ ,  $\eta^2 < 0.01$ , and post-hoc Tukey’s comparisons revealed no significant differences between targets.

Generally results were not outstanding, but some interesting findings arose. Specifically, straight Portuguese men were perceived as warmer when the CV did not trigger competence, both gay target groups were perceived as more feminine when competence was not triggered, and straight Brazilians were perceived as more competent when competence was triggered. Additionally, it is important to note that while there were no statistically significant differences in salary proposals across CV types, straight Brazilians did receive a statistically lower salary

offer in Experiment 2 (but not Experiment 1) which may be due in part to decreased variance in Experiment 2; nevertheless, the starting salary was still lower in Experiment 2 than in Experiment 1, suggesting discrimination effects. Here, it seems that the ambiguity of the low competence CV allowed for more stereotyped views of candidates to permeate; that is, greater variability within participants’ answers, coupled with the activation of stereotypes, may explain the plausible differences between CVs based on triggered competence.

## General discussion

While the negative or positive consequences of intersectionality has been methodologically examined across contexts (e.g., Bergstrom et al., 2023; Ghavami and Peplau, 2012; Jarrin and Pitts, 2020; Pedulla, 2014; Petsko and Bodenhausen, 2019b; Strinić et al., 2021; Veit et al., 2022), contradicting results have fueled discussions on the generalizability of the findings. Herein lies the importance of the current project; stereotyping against Brazilians was analyzed across three experiments derived from theoretical assumptions regarding multiple (and, intersecting) identities. Results followed trends in Portuguese society in which prejudice tends to act implicitly, perhaps due in part to the country’s anti-discrimination attitude (e.g., Diego-Cordero et al., 2022; ILGA, 2022; Santos, 2013; Souza et al., 2016). Notably, it was revealed that participants expressed implicit, but not explicit, preferences against Brazilian targets, and occupational prejudice was detected against straight Brazilians only when participants were presented with CVs that did not explicitly trigger competence.

An understanding of several combined processes may further assist with data interpretation – namely, the perception of intersectional individuals, the application of stereotypical assumptions, and the conceptualization of individuals with varying implied competence. As exhibited, individuals belonging to multiple minorities (gay Brazilians) may be protected by their double minority status, given the contextual assumptions of stereotyping (e.g., Kurzban et al., 2001; Petsko and Bodenhausen, 2019b; Petsko and Bodenhausen, 2020; Turner et al., 1987; Wojnowicz et al., 2009). Within the context of the current project, cognitive compartmentalization appears to have influenced participants’ perceptions of applicants when competence was not triggered; that is, assumptions regarding Brazilian men might have been the stereotypical baseline while sexual orientation shifted focus. More specifically, negative stereotypes of Brazilian men may have been mitigated by sexual orientation, bringing gay Brazilians closer to the stereotypicalities of Portuguese men and increasing assimilation into the Portuguese workplace (i.e., increasing conceptual whiteness, or perhaps, Europeaness in this case) (e.g., Pedulla, 2014; Purdie-Vaughns and Eibach, 2008). Furthermore, implicit preferences against Brazilian men, and to a far lesser degree, gay men, provide additional support for this effect, referencing back to the type of prejudice and discrimination typically faced in Portuguese society (Diego-Cordero et al., 2022; Santos, 2013).

Of course, this effect was found only for applicants with lower implied competence, suggesting that higher qualifications may have protected minority members from receiving prejudiced judgments (e.g., Bayrakdar and King, 2023; Veit et al., 2022). Additionally, an increase of cognitive complexity involved in judgment tasks between Experiments 1 and 2 seemed to have driven stereotypic judgments toward straight Brazilians, similar to past findings (e.g., Bodenhausen and Lichtenstein, 1987; Bodenhausen and Wyer, 1985; Macrae et al., 1994; Wilson, 1978). In Experiment 2, where less objective information and implied competence was provided, heuristic processes anchored by stereotypic information may have been adopted by the participants to ease the task at hand. We argue that a lack of information

eliminated the opportunity for judgment anchoring to occur, eliciting the use of stereotypical assumptions and promoting prejudiced evaluations (Locksley et al., 1982). In other words, participants were unable to judge applicants based on objective informational cues, and instead, were tasked with providing subjectively biased decisions. We also speculate that implicit anti-Brazilian sentiments were allowed to come forth, driving responses in Experiment 2, but not Experiment 1. However, this does not mean participants ignored informational cues presented in Experiment 1; for instance, participants accurately assumed sexual orientation (based on ratings of masculinity). Moreover, participants could have simply deciphered the information on the CV to complete the task at hand (e.g., providing evaluations), without considering the possibility of other differently-skilled (fictional) candidates. Future experimental designs would benefit from the introduction of information recall paradigms in which the consistency of information interpretation could be considered, giving valuable insight into the details encoded into memory. Nevertheless, findings from these studies provide an important glimpse into the generalizability of intersectionality and the SCM in a Portuguese context.

Naturally, some limitations arose which are worth mentioning. First and foremost, there were inconsistent effect sizes across Experiments 1 and 2, although both included similar sample sizes. The low effect sizes in Experiment 1 may understandably be scrutinized, as the possibility of false conclusions and insignificant applications are undoubtedly increased (e.g., Anderson et al., 2017; Sommet et al., 2023). However, results from both experiments corroborate past findings (e.g., Locksley et al., 1982; Pedulla, 2014; Veit et al., 2022), yielding optimism for the overall conclusions. Additionally, the conflicting nature of Experiment 1 (i.e., triggering competence despite the existence of stereotypic beliefs) may have resulted in the high variability shown, producing statistical outliers that could be reduced if the sample size were larger (André, 2022; Bakker and Wicherts, 2014). Due to resource constraints, it was not feasible to collect more responses; however, future researchers should consider achieving a larger sample size if examining similar target groups. Secondly, while the main hypotheses were driven by conclusions made in the SCM, warmth was not triggered in the same manner as competence was in this paradigm; therefore, the entire picture was not developed. However, as male-dominated workplaces do not typically value warmth (e.g., Bowleg, 2008; Purdie-Vaughns and Eibach, 2008), and measures that evaluated warmth were nonetheless included, we argue that the decision to trigger only competence is valid in this context.

Thirdly, the use of a largely heterogeneous sample in such a paradigm may bring inherent biases or results not indicative of real-world behaviors. Specifically, most of the participants were straight and analyses regarding sexual orientation were not suitable in Experiments 1 and 2; while it is presumable that there might be differences between straight and gay participants, we were unable to test for this and future researchers should consider including an ample number of participants from various demographic backgrounds. Additionally, although other CV research (e.g., Granberg et al., 2020; Everly et al., 2016; Strinić et al., 2021) employed methodologies using real-world professionals (which undoubtedly earned high external validity), financial constraints limited the feasibility of employing this specific methodology; yet, potential lower external validity does not mean current findings should not be discredited, but rather, examined within this specific methodological context (Wulff and Villadsen, 2020). This methodological concern was addressed in Experiments 1 and 2 by instructing student participants to roleplay as hiring managers, but of course, recruiting professionals tasked with making daily hiring decisions might be a desirable route for future researchers to undertake. For instance, this paradigm could comfortably be translated into an audit study or an interview vignette

(Granberg et al., 2020; Mobasseri, 2019; Sterkens et al., 2022; Tilcsik, 2011; Wulff and Villadsen, 2020).

Finally, in an attempt to mimic real-life scenarios in which hiring managers must first consider one's qualifications before proposing a starting salary, we asked participants to provide a starting salary at the end of the questionnaire; doing so may have activated particular stereotypes that might not have yet been activated if the salary proposal was asked at the beginning of the questionnaire. However, stereotypical activations do not necessarily lead to stereotypical judgments (e.g., Gilbert and Hixon, 1991; Macrae et al., 1994). While we do not think there would have been a substantial difference in results, further paradigms should randomize the positioning of the salary proposal question to account for this doubt.

**Constraints on generality.** It should be noted that the aim of this project is not to say that prejudice is absent for gay Portuguese, straight Brazilian, and gay Brazilian men in Portugal, or even in cross-cultural business contexts. Of course, within the scope of this paradigm, this was the case; however, the addition or absence of stereotyping in experimental designs is not always indicative of prejudiced attitudes and discriminatory behaviors, and vice-versa (Brauer and Er-rafy, 2011; Gawronsky and Houwer, 2014). Furthermore, external factors may incite prejudiced behaviors in real-world settings such as: employers' or colleagues' personal prejudices against gay and/or Brazilian men, stereotypical assumptions generated from the target's race, and the socio-economic status of the targets, among numerous other examples. Finally, as both participant and target groups included specific groups of individuals based on nationality (and not race), results may be more strongly generalized to societies with similar sociocultural backgrounds (e.g., Spain or Italy) than those with different sociocultural backgrounds (e.g., Japan or Turkey). Therefore, results should be accepted with consideration of varying interpersonal or social experiences and should be adapted by future researchers which expands upon possible conditions of prejudice within different contexts and cultures.

**Concluding remarks.** Findings present important considerations for real-world applications, while simultaneously replicating results from prior literature. Notably, gay Portuguese and gay Brazilian men were not perceived as more or less warm or competent than straight Portuguese and straight Brazilian when competence was triggered, contradicting some literature regarding the adequateness of LGBT workers. That being said, straight Brazilian applicants were considered less competent than all other groups when competence was not triggered; unfortunately, this may hinder straight Brazilians' social advancement if employment opportunities remain limited to low-paying positions although their qualifications are equal to other candidates. Optimistically, results may assist in the development of certain occupational training aimed at reducing implicit stereotyping based on one's identifying features – a promising translation from theoretical conclusions to real-world applications in spite of low effect sizes found in some analyses. The authors of this project are enthusiastic to see where the future of intersectional research continues, looking at increased equality in the workplace and beyond.

#### Data availability

Data included in this project may be found in the online repository, (OSF; [https://osf.io/ycn3f/?view\\_only=752cc5acd7ac4a28a9abede9e45a15c1](https://osf.io/ycn3f/?view_only=752cc5acd7ac4a28a9abede9e45a15c1)).

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## Notes

- 1 In all experiments throughout this project, participants were asked to report their sexual orientation on a single-answer question with the following categories: heterosexual, gay, lesbian, other, or prefer not to answer.
- 2 Participants were told that managers are expected to successfully perform the company's objectives and mission(s), implement strategies to promote the company's success, manage all employees, perform housekeeping tasks, and promote a positive workplace.

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## Author contributions

All authors contributed to the project's conception, design, and material preparation. Data collection and analysis were performed by JR, ASS, and MSR. The manuscript was drafted by JR and all authors contributed to the revisions in subsequent drafts. All authors read and approved the final manuscript.

## Competing interests

The authors declare no competing interests.

## Ethical approval

All studies in this manuscript were approved by the ethics committee of the first author's institution (Approval Number: RAPI20221911JR) and were conducted in accordance with the Declaration of Helsinki.

## Informed consent

All subjects included in this project were made aware of their rights as participants. Participant data was treated with anonymity and care, with all participants giving their full informed consent before commencing the studies.

## Additional information

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1057/s41599-023-02379-2>.

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