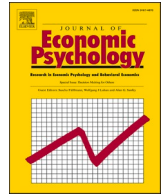




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Empowered or informed? Seeking to mitigate gender differences in first-offer assertiveness through pre-negotiation interventions

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ABSTRACT

Gender differences in negotiation behavior—for instance, men’s vs. women’s likelihood to make (assertive) first offers—contribute to the globally prevalent gender pay gap (GPG). In an attempt to mitigate the social and economic consequences of this gender disparity, we first empirically validated two pre-negotiation message interventions in a pilot study ($N = 203$). In the main experimental intervention study ($N = 585$), male versus female participants randomly received this (1) informative message about the GPG, or (2) gender-specific empowering message, or (3) no message in the control condition. In a subsequent negotiation task on the starting salary for a new job, we assessed participants’ (a) likelihood-to-initiate a first offer and (b) first-offer assertiveness. Results showed a remarkably robust behavioral gender disparity: across all conditions, men were more likely to make the first offer ($d = 0.178$) and made them more assertively ($d = 0.339$). Importantly, compared to the control condition, the informative ($d_{\text{inform}} = 0.304$) and the empowering ($d_{\text{empower}} = 0.255$) pre-negotiation interventions increased women’s first-offer assertiveness. Similar intervention benefits emerged for men ($d_{\text{inform}} = 0.259$; $d_{\text{empower}} = 0.284$), however, yielding an overall remarkably robust gender difference. To explore the underlying reasons for this gender disparity, we tested four competing psychological mechanisms (i. e., self-esteem, positive and negative affect, GPG awareness, and self-efficacy). Our results highlight the impact that even short, minimal interventions can have on gender differences in negotiation behavior and illustrate which psychological mechanisms explain the emergence of gender disparity in the first place.

1. Introduction

Throughout human history and across the globe, social and economic differences pertaining to gender have been widespread and continue to be—ranging from political representation, to voting rights, promotion likelihood, and negotiation behavior (e.g., Kugler et al., 2018; Mazei et al., 2015; Morgenroth et al., 2020; Nohe et al., 2022). One of the most prevalent economic issues is the gender pay gap (GPG): On average, a woman earns 87.9 cents for every dollar earned by a man—a 12.1 % difference (OECD, 2022). In Germany and the U.S., these GPGs are even larger with 13.5 % and 17.0 %, respectively. Statistically correcting for structural factors (e.g., part-

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time work or different occupations) yields an ‘adjusted’ GPG of approximately 6 %–7% in Germany and 5 % in the U.S. Even these adjusted GPGs total to several thousand dollars per year for middle-class incomes (Chamberlain et al., 2019; European Commission, 2018; Finke et al., 2017). The underlying causes for the GPG are manifold and range from structural factors, to part-time work, choice of jobs, and a discriminating gender pay bias shown by human resources (HR) professionals (e.g., Bowles, 2013; Schuster et al., 2023). In addition, men and women also differ systematically in their own negotiation behavior, with women generally negotiating less unethically (Nohe et al., 2022), attaining less successful outcomes (Mazei et al., 2015), and choosing to initiate the negotiation less frequently than men (Kugler et al., 2018; see Amanatullah & Morris, 2010), especially in situations of high ambiguity (Bowles et al., 2005, 2021; Leibbrandt & List, 2015). Given the highly influential impact that (a) deciding to make the first offer and (b) making it assertively exert on final negotiation outcomes (e.g., Petrowsky et al., 2023; Schweinsberg et al., 2023), these systematic gender differences in initiation behavior offer high potential for a correcting impact on gender pay disparities.

In line with various political and societal endeavors to expedite gender pay equality (e.g., *U.S. Equal Pay Act*, 1962; Biden, 2020; Kulich et al., 2015), we thus conducted an intervention study to (1) replicate the gender difference in first-offer assertiveness and likelihood-to-initiate, as well as (2) systematically alter participants’ behavior via experimental interventions of different pre-negotiation messages. In particular, we sought to test whether, how, and why an informative message about the GPG and a gender-specific empowering message affect negotiation behavior compared to a no-message control condition.

2. Theoretical background

2.1. Gender differences in negotiations and first-offer behavior

A plethora of negotiation studies has detected gender differences and biases (e.g., Austermann et al., 2024; Kray et al., 2004; Mazei et al., 2015; Nohe et al., 2022; Schuster et al., 2023; Stuhlmacher & Walters, 1999). To account for these differences, the *Expectation States Theory*, for instance, articulates a prevailing gender bias: Higher competencies and contributions are attributed to higher status actors—in this case of negotiations to men (Correll & Ridgeway, 2006). These interpersonal attributions then influence the perceptions of negotiators (Bowles et al., 2021; Mazei et al., 2015; see Trötschel et al., 2013). In salary negotiations, for example, the HR professional’s assessment of the candidate’s personality and capabilities can fall victim to a gender bias that manifests in a gender pay bias (Schuster et al., 2023).

In addition to bias, men and women also differ in bargaining: Women are generally less competitive and agree to lower outcomes compared to men (Mazei et al., 2015; but see Lénárd et al., 2024). These disparities can partly be attributed to differences in personality characteristics, such as self-confidence and self-perceptions of assertiveness (Gerhart & Rynes, 1991). To address these differences, prior research suggests that women can increase their salary by deciding to negotiate more frequently (Gerhart & Rynes, 1991; Malhotra & Bazerman, 2007; Pinkley & Northcraft, 2000; Stevens et al., 1993) and by being more assertive in negotiations (e.g., Bowles & Babcock, 2013; Bowles et al., 2021; Small et al., 2007). This behavior, however, goes against women’s ‘gender-congruent’ behavior as described by *Social Role Theory* (e.g., Olekalns et al., 2014) and *Role Congruity Theory* (Eagly & Karau, 2002). According to these theories, behaving in a gender congruent way—e.g., more communal as a woman and more agentic as a man—is perceived as more socially acceptable. Violating gender-specific role prescriptions is evaluated more negatively by others (e.g., HR experts or colleagues; Bowles & Babcock, 2013; Bowles et al., 2007, 2021; Mazei et al., 2015; Rudman & Glick, 1999, 2001). Role violations can have pronounced social impacts on women and lead to disadvantages: Being (too) assertive as a woman can be perceived as (too) demanding and impolite and dampen career advancement by alienating colleagues (i.e., ‘social backlash’; Amanatullah & Morris, 2010; Amanatullah & Tinsley, 2013; Dreher & Ash, 1990; Higgins & Kram, 2001). Hence, women tend to hedge their assertiveness in self-advocacy contexts due to anticipated social backlash (Amanatullah & Morris, 2010). Drawing on these gender role theories, we thus hypothesize that women (a) are less likely to initiate negotiations with a first offer and (b) if they do, act less assertively than men.

H1a: Men are more willing to make a first offer than women.

H1b: Men make more assertive (higher) first offers than women.

2.2. Informative messages about the GPG

Negotiation behavior is malleable, however—for example, by intervening norm messages to attenuate professionals’ pay bias (Schuster et al., 2023) or to address gender inequality (Bennett & Sekaquaptewa, 2014). The *Knowledge-Deficit Model* posits that increased domain-specific knowledge can lead to desired behavioral change (Abrahamse & Matthies, 2018; Schultz, 2002), assuming that knowledge and behavior have a linear causal connection (Cornforth, 2011). Contradicting research, however, demonstrates that merely presenting knowledge may be insufficient to impact behavior, particularly when the majority of people is showing the ‘wrong’ behavior (e.g., Schultz, 2002; Schultz et al., 2007; see *Norm Focus Theory*, Cialdini et al., 1990). As a consequence, a so-called ‘injunctive’ norm that emphasizes what *ought* to be different should be added to a descriptive norm for positive effects to emerge after all (e.g., Loschelder et al., 2019). Consequently, we expected that an informative message about the GPG magnitude (descriptive norm), combined with an injunctive element of placing the woman in an unfair position (i.e., lower vertical placement) would activate the social norm of egalitarianism in participants and increase female negotiators’ likelihood-to-initiate and their first-offer assertiveness. We expected men to be unaffected in order to avoid deviating from the social norm of egalitarianism.

H2a (H2b): Women who receive an informative GPG message are more willing to make the first offer (and make it more assertively) compared to women not receiving this information.

H2c (H2d): Men who receive an informative GPG message are not more willing to make a first offer and do not make it more

assertively (higher) compared to men not receiving this information.

2.3. Empowering messages

Empowerment can be defined as a process that improves individuals' control over their lives or their perceived degree of self-efficacy (Koinig, 2021; Perkins & Zimmerman, 1995). General self-efficacy is an individual's "perceived operational capability" based on their competencies (Bandura, 2007, p.646). Specific messages can have an empowering effect on the receiver, elevating their belief to possess the skills needed to perform certain actions (Koinig, 2021). Based on *Role Congruity Theory* and *Social Role Theory* assumptions, we expected that a gender-specific message of empowerment would lead women to feel more agentic and self-efficacious (see Pilot Study). Women should then become more willing to take action—by means of more likely initiating negotiations and by making these first offers more assertively. We also predicted that men would already feel self-efficacious and agentic as this negotiation situation is congruent with the male gender role (Kugler et al., 2018) and would hence not alter their behavior as a result of the intervention.

H3a (H3b): Women who receive gender-specific empowerment messages are more willing to make the first offer (and make it more assertively) compared to women not receiving this information and those receiving GPG information.

H3c (H3d): Men who receive gender-specific empowerment messages do not become more willing to make the first offer (and more assertively) compared to men not receiving this information and those receiving GPG information.

2.4. Explanatory mechanisms

We sought to also examine the underlying psychological mechanisms that could explain these gender differences. According to the *Social Role Theory* and *Role Congruity Theory*, the role-specific expectations of agency (and lack thereof) in salary negotiations (Kugler et al., 2018; Mazei et al., 2015) could cause women to feel less self-efficacious (Rezaei, 2012) and a lower situational self-esteem compared to men (Zeigler-Hill & Myers, 2012). Similarly, women's positive affect might situationally decrease, while the negative affect increases. For the GPG information intervention, an increased awareness of an (unfair) GPG could motivate women to change this situation, which could coincide with higher perceptions of self-efficacy and more situational self-esteem. Emotionally, more positive and less negative affect could come hand-in-hand. In all, these psychological mechanisms should also predict a higher prevalence of (assertive) first offers (Bennett & Sekaquaptewa, 2014, Cialdini et al., 1990, Schultz, 2002; Fig. 1):

H4: Positive and negative affect, general self-efficacy, self-esteem, and GPG awareness should mediate the effects of gender on first-offer assertiveness.

Statistical mediation approaches are of correlational nature and thus do not allow for causal interpretations (Spencer et al., 2005; see Fiedler et al., 2018). We hence opted to experimentally intervene with two separate messages that should causally increase female negotiators' (1) awareness of the GPG (via the informative message) and their (2) sense of self-efficacy and self-esteem (via the empowerment message)—in turn, these causally increased mechanisms should lead to significant changes in subsequent negotiation behavior.

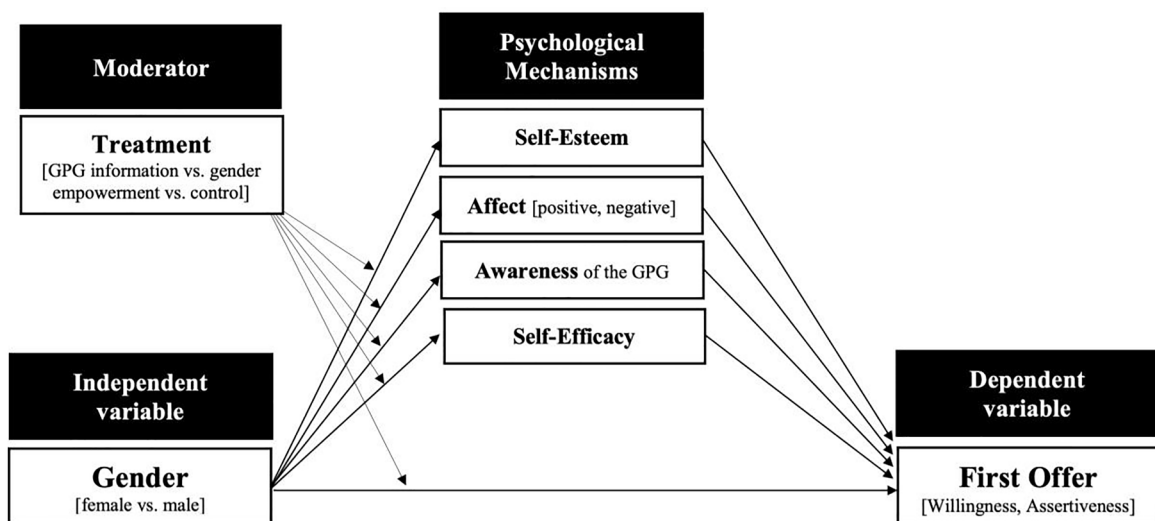


Fig. 1. The preregistered moderated mediation model. *Note.* We predicted that gender differences on first-offer behavior (assertiveness and willingness) would be psychologically mediated via self-efficacy, self-esteem, positive and negative affect, as well as awareness of the GPG. We also predicted that the relative impact of these different mechanisms would depend on the pre-negotiation intervention that either provided GPG information or empowered participants in their gender identity (see moderator).

3. Pilot study – validating the pre-negotiation interventions

We conducted a pilot study to empirically validate our pre-negotiation interventions of (1) GPG information and (2) gender-specific empowerment.

3.1. Methods

We recruited 203 participants: 103 men ($M_{Age} = 40.27$, $M_{Exp} = 19.60$) and 100 women ($M_{Age} = 38.34$, $M_{Exp} = 19.20$) via *Prolific*, an online survey platform with high data quality (Peer et al., 2022). No participants were excluded.

3.1.1. Experimental manipulations

Participants were randomly assigned to one of two message conditions: In the GPG information condition, participants learned that, in 2022, the GPG was 11.6 % globally, 13.9 % in Germany, and 17.7 % in the U.S., meaning that women earn 82 cents for every dollar a man earns—a visualizing graphic placed a female employee on a vertically lower stack of coins than the male employee (Fig. 2).

In the empowering condition, participants received a motivational message tailored towards men or women. Men learned that the typical “stereotypes about gender roles favor men”, thus granting them more “success in negotiations”. Women read that they have “the ability to tackle stereotypes about gender roles”, they are “not dependent on men anymore”, and that they “have what it takes to negotiate successfully” (Fig. 3).

3.1.2. Dependent measures

We assessed (1) participants’ current GPG awareness (5 items, $\alpha = 0.928$; e.g., “I reflect about the fact that women earn lower salaries than men”; “I am aware of an unfair pay situation”) and (2) their current feelings of agentic self-efficacy (7 items, $\alpha = 0.981$; e.g., “I feel competent; ...strong; ...powerful; ...capable”).

3.2. Results and discussion

We conducted 2 (*gender*: female, male) \times 2 (*treatment*: information, empowerment) ANOVAs. For GPG awareness, a gender main effect, $F(1,199) = 12.96$, $p = 0.012$, $\eta_p^2 = 0.031$, and a treatment main effect, $F(1,199) = 8.82$, $p = 0.003$, $\eta_p^2 = 0.042$, were qualified by a gender \times treatment interaction, $F(1,199) = 37.11$, $p < 0.001$, $\eta_p^2 = 0.157$. As Fig. 4A illustrates, men and women did not differ in GPG awareness in the empowerment condition; this awareness increased significantly in the information condition, causing particularly women to reflect about the GPG.

For participants’ feelings of agentic self-efficacy, the expected treatment main effect, $F(1,199) = 77.39$, $p < 0.001$, $\eta_p^2 = 0.280$, was also qualified by a gender \times treatment interaction, $F(1,199) = 17.78$, $p < 0.001$, $\eta_p^2 = 0.082$. As Fig. 4B illustrates, men and women differed in the information condition—women expectedly feeling less agentic and self-efficacious than men. This gender disparity was overcome by means of our empowerment intervention causing women to feel more agentic and self-efficacious. In all, the pilot data corroborate our manipulations and suggest promising effects for the main intervention study that strives to mitigate the gender disparity in men’s and women’s negotiation behavior.

4. Main study: Can our interventions mitigate behavioral gender differences?

The main study contrasted (1) men’s and women’s negotiation behavior—particularly their first-offer assertiveness and likelihood—and (2) experimentally examined how our pre-negotiation interventions impact this behavior, possibly mitigating the gender disparity.

4.1. Methods

4.1.1. Participants and design

In a 2 (*gender*: female, male) \times 3 (*treatment*: control, information, empowerment) between-subjects design, male and female participants were randomly assigned to the three treatment conditions. An a-priori sample size analysis in G*Power (Faul et al., 2007) with a ‘small-to-medium’ effect size ($f = 0.175$, $d = 0.350$; $\alpha = 0.05$; $1 - \beta = 0.95$; $dfs = 2$) yielded a minimum sample of 508 participants. We preregistered to recruit 600 participants to buffer for potential exclusions.

We recruited 616 participants via social media and *Prolific* (Peer et al., 2022).¹ Pre-selection criteria included being fluent in English, ≥ 18 years old, identifying as male or female (for our gender-specific empowerment intervention), and not having participated in our pilot study. Participants ($n = 31$) were excluded if they (a) did not meet these criteria, (b) did not answer all questions, (c) rushed through the study in less than 180 s, or (d) declined the privacy terms and conditions. The final sample was $N = 585$ participants—289 men ($M_{Age} = 38.82$, $M_{Exp} = 17.04$) and 296 women ($M_{Age} = 35.28$, $M_{Exp} = 13.47$).

¹ We terminated the data collection in the evening of the day that we had reached 600 participants. This led to a slight oversampling compared to the preregistered number of participants. Importantly, we did not artificially prolong the data collection, nor did we analyze any data prior to terminating the data collection. Excluding the oversampled participants does not affect the significance of the reported main effects.

Based on the latest data of the OECD 2022, the **average gender pay gap is 11,6%**. In Germany and the US, the difference is even higher, at 13,9% and 17,7%, respectively.



Fig. 2. The GPG information intervention. *Note.* The intervention consisted of a descriptive social norm, detailing the GPG globally, in Germany, and the U.S., as well as an injunctive element to visualize the unfairness in that the female employee was placed on a lower stack of coins, crossing her arms, and looking up to the male employee.

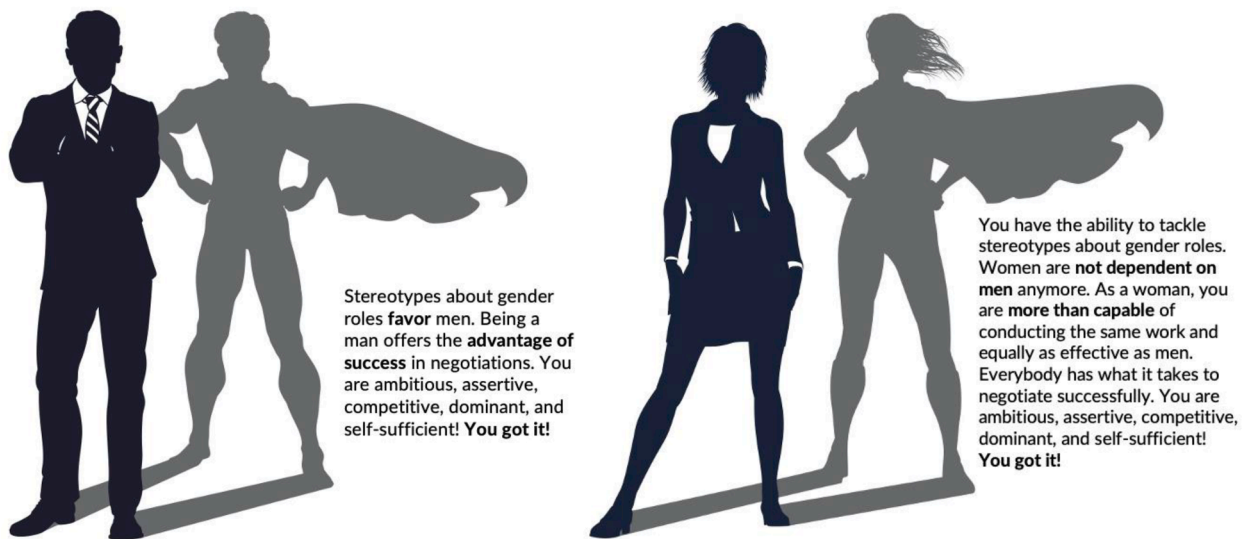


Fig. 3. The gender empowerment intervention.

4.1.2. Procedure and materials

We first assessed demographics. Participants were then asked to imagine applying for a job and having reached the final stage of the selection process, where they would negotiate the salary with an HR manager. Participants received realistic information about the typical salary range for this position (i.e., 35,000€–50,000€; Schuster et al., 2023). Participants then reported their likelihood to make the first offer and quantified a first-offer value. A self-report questionnaire assessed four competing mediators. Participants were then debriefed and thanked.

4.1.3. Experimental manipulations

Manipulations were identical to the Pilot Study. In the control condition, participants did not receive a pre-negotiation message and directly started their negotiations.

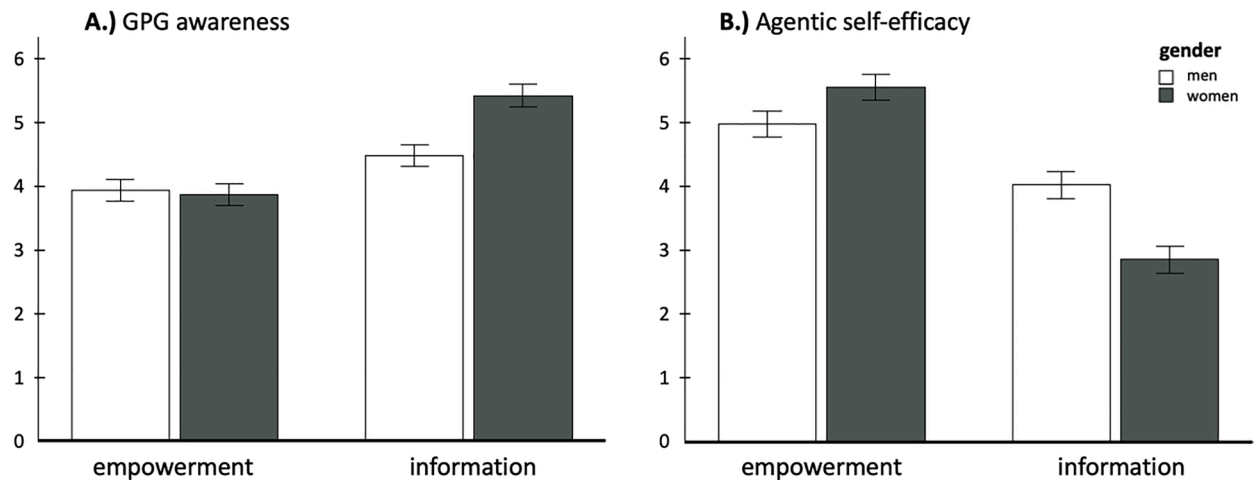


Fig. 4. Pilot study results. *Note.* Corroborating our experimental manipulations, pilot study data show (A) that participants' current awareness of the GPG increased in the information condition, particularly so for women, and (B) that women's markedly lower sense of agentic self-efficacy compared to men in the information condition was overcome (and reversed) in the gender-specific empowerment condition. Error bars depict standard errors of the respective means.

4.1.4. Measures

4.1.4.1. Dependent variables. We assessed participants' first-offer behavior in two ways. First, we captured their likelihood to make the first offer via a 0%–100% scale (i.e., "Either you or your counterpart needs to make the first offer; how willing are you to make it?", 0%–100%). Second, we assessed first-offer assertiveness on a scale ranging from 25,000€ to 60,000€, where the typical salary range (35,000€–50,000€) was highlighted in gray (see SOM).

4.1.4.2. Psychological mediators. We assessed four competing mediators: (1) feelings of agentic self-efficacy (8 items, $\alpha = 0.94$; *Self-Efficacy Scale*, Chen et al., 2001), (2) current GPG awareness (4 items, $\alpha = 0.69$; e.g., "I am currently thinking about the fact that men make markedly more than women"; see Pilot Study), (3) self-esteem (10 items, $\alpha = 0.90$; *Self-Esteem Scale*, Rosenberg, 1965), and (4) positive and negative affect (10 items, $\alpha s > 0.77$; *I-PANAS-SF*, Thompson, 2007).² Items were measured on 7-point Likert scales (1 = not at all; 7 = very much).

4.1.4.3. Covariates. Participants' age, work experience, negotiation experience, and trait sexism (11 items, $\alpha = 0.705$; *Neosexism Scale*, Tougas et al., 1995) were measured as covariates (1 = not at all; 7 = very much; see SOM).

4.2. Results³

4.2.1. Likelihood-to-initiate

A 2 (gender) \times 3 (treatment) ANOVA showed a gender main effect, $F(1,579) = 4.63, p = 0.032, \eta_p^2 = 0.008$: Across conditions, men were more likely to initiate the negotiation ($M = 52.26\%$, $SD = 31.51$) than women ($M = 46.78\%$, $SD = 28.18$; H1a). Fig. 5 shows that this effect was predominantly driven by the GPG information condition, in which men ($M = 58.32\%$) were markedly more likely to start the negotiation than women ($M = 44.68\%$)—albeit the gender \times treatment interaction not being significant, $F(2,579) = 2.93, p = 0.054$ (condition main effect: $F[2,579] = 1.92, p = 0.148$).

4.2.2. First-offer assertiveness

A 2 (gender) \times 3 (treatment) ANOVA showed main effects for gender, $F(1,579) = 16.75, p < 0.001, \eta_p^2 = 0.03$, and condition, $F(1,579) = 4.99, p = 0.007, \eta_p^2 = 0.017$ (interaction: $F < 1, p = 0.934$). As Fig. 6 illustrates, men ($M = 47,229\text{€}$) asked for higher salaries than women ($M = 45,571\text{€}$; H1b) across all conditions ($M\Delta = 1,658\text{€}$; contrasts 1–3; $BF_{10} = 282.19$). Compared to the control condition, both the empowerment ($\Delta = 1,318\text{€}$; contrast 4; H3b) and the information condition ($\Delta = 1,376\text{€}$; contrast 5; H2b) elevated

² An anonymous reviewer pointed out in the review process that we did not assess women's fear of social backlash as a mediator (see Amanatullah & Morris, 2010). This is absolutely correct and unfortunate as (1) a reduction in fear might explain the beneficial intervention effects, while (2) any remaining fear could explain the robust gender differences in the two intervention conditions.

³ To assess the robustness of the reported findings, we also conducted subsequent analyses with the inclusion of the covariates age, work experience, trait sexism, and negotiation experiences. Including these covariates did not change any of the reported patterns of results. The SOM offers detailed analyses with median-split subgroups.

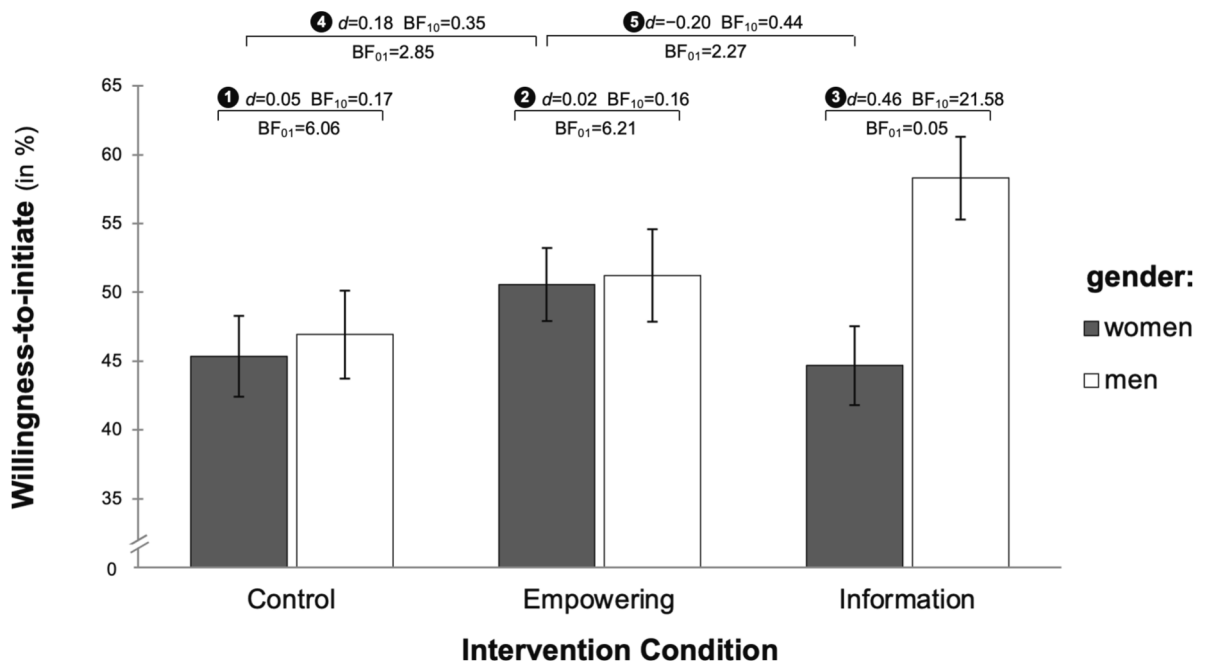


Fig. 5. Main Study: Willingness-to-initiate. Note. Participants' willingness to make the first offer as a function of gender and experimental condition. The gender main effect ($d = 0.18$) is driven in particular by the information condition, in which men are markedly more likely than women to make the first offer ($d = 0.46$; see contrast 3). BF_{10} and BF_{01} refer to 'Bayes Factors' supporting the alternative and null hypotheses respectively; BFs were calculated with the software JASP (JASP Team, 2024) for Bayesian Student t-Tests using the default Cauchy priors of 0.707 (Schuster et al., 2023). Error bars depict standard errors of the respective means.

women's but, unexpectedly, also men's first-offer assertiveness.

4.2.3. Psychological mechanisms underlying the gender difference

To further explore these gender differences, we investigated the four proposed mechanisms (Fig. 1). 2 (gender) \times 3 (treatment) ANOVAs showed gender main effects for self-esteem, $F(1,579) = 16.17$, $p < 0.001$, $\eta_p^2 = 0.027$, GPG awareness, $F(1,579) = 11.03$, $p < 0.001$, $\eta_p^2 = 0.019$, and negative affect, $F(1,579) = 5.04$, $p = 0.025$, $\eta_p^2 = 0.009$. The gender main effect for positive affect was not significant but on the very boundary of significance, $F(1,579) = 3.84$, $p = 0.050$, $\eta_p^2 = 0.007$ (all other F s < 1.48 , p s > 0.228). Women reported significantly lower self-esteem ($M_w = 5.59$ vs. $M_m = 5.92$), higher awareness of the GPG ($M_w = 5.23$ vs. $M_m = 4.87$), lower positive affect ($M_w = 4.47$ vs. $M_m = 4.66$), and higher negative affect ($M_w = 1.97$ vs. $M_m = 1.78$). Given these significant a-paths (Fig. 1), we next examined indirect effects.

4.2.4. Multiple mediation analyses

We conducted a moderated mediation analysis using the *Process* macro (Hayes, 2013) with 5,000 bootstrapped samples. Gender was entered as the independent variable, first-offer assertiveness⁴ as the dependent variable, and the four mechanisms as multiple, competing mediators. Given that our experimental treatment did not exert a moderating effect on the psychological mechanisms (see previous paragraph), the moderated mediation model was expectedly also non-significant ($b = 4.34$, $SE = 43.45$, $CI_{95\%} [-102.57, 87.17]$).

To further explore the gender differences in first-offer behavior, we conducted a multiple mediation analysis (Fig. 7; Hayes, 2013; model 4). The analysis showed a significant total indirect effect, $b = 292.98$, $SE = 153.34$, $CI_{95\%} [2.70, 599.32]$, to which the psychological mechanisms contributed differently: Most influential was participants' self-esteem (accounting for 68.4 % of the total indirect effect), followed by GPG awareness (13.9 %), positive and negative affect (12.4 %), and self-efficacy (5.3 %; Fig. 7). In all, female (vs. male) participants reported lower levels of self-esteem, positive affect, and self-efficacy, but higher levels of negative affect and GPG awareness; these psychological mechanisms jointly accounted for women making less assertive salary offers compared to men.

5. Discussion

In addition to structural, societal factors (e.g., job choice, part-time work) and gender pay discrimination shown by HR

⁴ We also ran these multiple mediation analyses with participants' likelihood-to-initiate as the dependent variable. Here, the total indirect was not significant, $b = 0.92$, $SE = 0.80$, $CI_{95\%} [-0.62; 2.52]$, as the 95% confidence interval included zero.

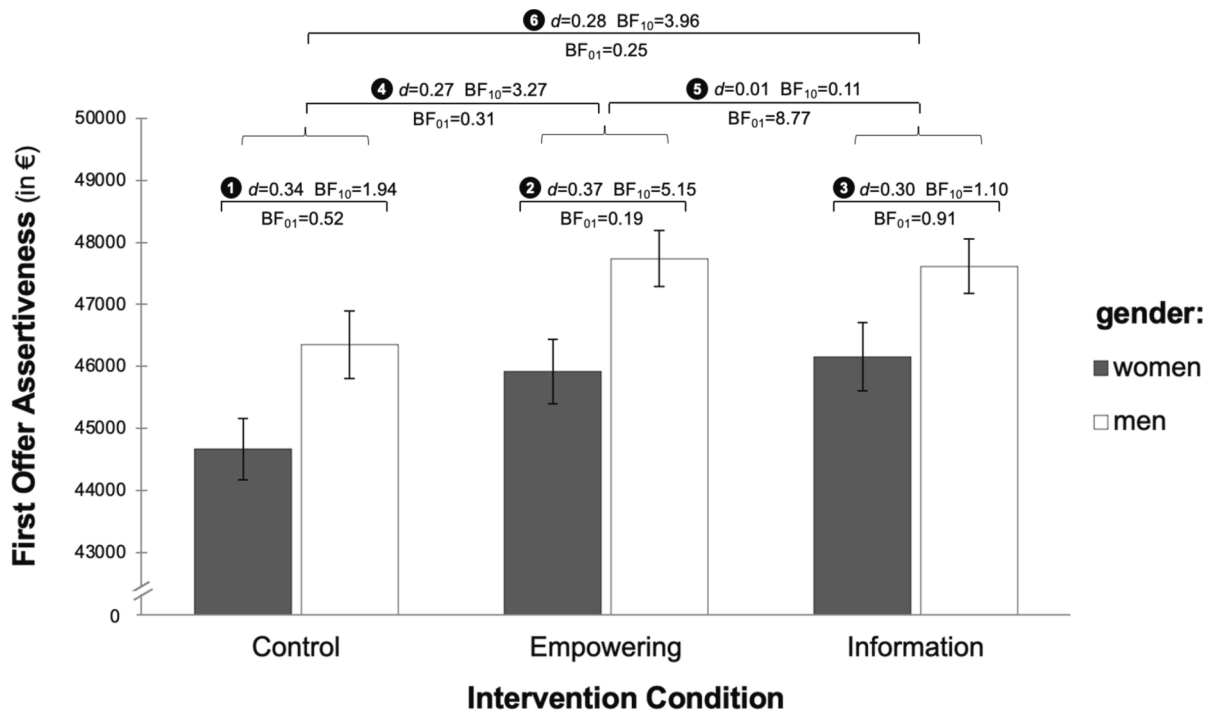


Fig. 6. Main study: first-offer assertiveness.

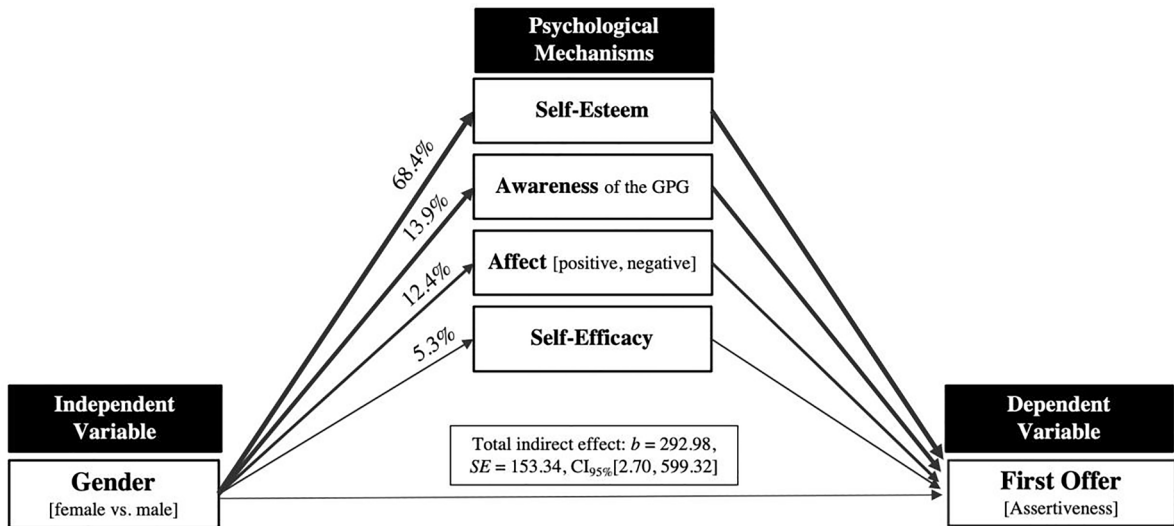


Fig. 7. Experimental Intervention Study: Multiple Mediation Analyses. Note. Women (compared to men) in this salary negotiation situation reported lower levels of self-esteem, positive affect, and self-efficacy, as well as higher levels of negative affect and GPG awareness. The total indirect effect was significant, $b = 292.98$, $SE = 153.34$, $CI_{95\%} [2.70, 599.32]$; percentage values and the thickness of a-paths and b-paths indicate how much the respective mechanism contributed to the total indirect effect.

professionals (Schuster et al., 2023), the negotiation behavior of job candidates can contribute to the globally prevalent GPG. The present study shows that women and men differ in their (1) likelihood-to-initiate a salary negotiation and (2) first-offer assertiveness—with women asking for, on average, a 1,658€ lower salary than men do ($M_w = 45,571€$ vs. $M_m = 47,229€$). Multiple mediation analyses show that (3) systematic differences in affect, self-efficacy, GPG knowledge, and self-esteem account for these gender differences in first-offer behavior.

In addition to shedding light on this gender disparity, we sought to test whether (and how) our interventions would change first-offer behavior. Empowering and informative messages elevated the salaries that women (and men) asked for. Women in the

empowerment and GPG information conditions did not differ from men in the control condition anymore. However, as men were also susceptible to our interventions, a surprisingly robust gender difference in first-offer assertiveness emerged across all conditions.

Our findings suggest the following practical recommendations: To elevate women's likelihood-to-initiate (Kugler et al., 2018; Leibbrandt & List, 2015) and first-offer assertiveness (Bowles et al., 2021), an empowering pre-negotiation message seems promising. This constitutes a fast, low-cost, easily scalable intervention that should have a positive societal impact on the magnitude of the GPG. Similarly, GPG information had a positive effect on the salary women asked for. Somewhat surprisingly, men were also more likely to initiate and ask for (even) more money when learning about the GPG (or being gender empowered).

Although our intervention focused on women's negotiation behavior, we explicitly do not mean to blame female negotiators for the GPG. In fact, prior research has shown that women are unfairly penalized for agentic behavior (Bowles et al., 2007) and that even experienced HR professionals markedly discriminate against women, creating a gender pay bias (Schuster et al., 2023). Changing these structural issues requires collective societal actions and is not the responsibility of female negotiators. In addition, making first offers and making them ambitiously are two promising prerequisites for better outcomes in distributive negotiations (Loschelder et al., 2016). In line with prior research (e.g., Bowles & Babcock, 2013), we therefore deem female negotiators' behavior a relevant lever (out of many) to counteract the societal gender pay gap.

As with any study, the present is not without limitations. First, although the Pilot Study suggests that participants become more aware of the unfair pay situation via our GPG information intervention, the effect could potentially be even larger if the information were conveyed not in percentages but, for instance, in absolute salary differences (1,658€) or in time. The Equal Pay Day, for example, on March 12th, 2024 in the U.S., conveys that women have to work 14.5 months in order to earn the same amount of money that men earn in 12 months. Second, the interventions we tested increased women's first offers ($\Delta_{\text{Empowerment}} = 1,246\text{€}$; $\Delta_{\text{Information}} = 1,486\text{€}$). Prior research, however, has documented a social backlash for women who negotiate assertively (e.g., Amanatullah & Morris, 2010). In the editorial process, an anonymous reviewer suggested that the social backlash from these interventions could be so strong that it leads to a net negative effect for negotiation outcomes. We agree with this theoretical possibility; however, (a) prior research highlights the massively strong positive impact of first offers on negotiation outcomes ('anchoring'; Loschelder et al., 2016; Schweinsberg et al., 2023) and (b) we are skeptical that the moderate increases in women's first offers would suffice to trigger a backlash that outweighs the beneficial anchoring effect. Phrased differently, future research would have to identify the point at which 'assertive' becomes 'too assertive' and show that this 1,400€ increase in offer assertiveness suffices to evoke social backlash that leads the counterpart to discriminate against women monetarily by more than 1,400€. Third, like the vast majority of prior first-offer research (i.e., 97.78 % of all prior effects; see Petrowsky et al., 2024), the present study comes with the limitation that it did not capture incentivized real-world data. The reasons are simple: (a) these data are not available; (b) even if they were, they would not be easily comparable (due to a plethora of different jobs); finally, (c) ethical constraints prevent researchers from applying currently untested pre-negotiation interventions in the real world. All that said, we wish to stress that there is little reason to believe that the present gender differences can be accounted for by a lack of monetary incentives: If women ask for less money in a simulated job negotiation than men, why would an arguably more stressful real-world negotiation context that is compatible with the male (not female) gender negotiation role attenuate this gender disparity? We would speculate that, if anything, an incentivized real-world salary negotiation exacerbates the observed differences; but this proposition remains an empirical question to be tested by future research.

Future research should also test (1) anticipation of social backlash and (2) social identity mechanisms (e.g., negotiating for woman-kind as a whole) as additional mediators (see Amanatullah & Morris, 2010) for (1) the remaining gender differences, and (2) the present effects on women elevated first offers. In addition, future interventions could attempt to make negotiating assertively more congruent with the female gender negotiation role (Eagly & Karau, 2002) or at least women's perceptions of their own negotiation role. Through a concerted effort to overcome these gender differences in negotiation behavior—in addition to the gender pay bias by HR professionals and systematic structural (dis-)advantages in the work environment—it might take less than the currently projected 135 years to overcome the remaining GPG (World Economic Forum, 2023).

6. Conclusion

We developed and empirically validated an empowering and a GPG-informing pre-negotiation intervention to reduce the impactful gender differences in first-offer behavior. Both interventions exerted positive effects on women's first-offer assertiveness that closed the gap to men in the control condition. Because men were also susceptible to our interventions, however, a robust gender gap remained that requires further attention.

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Special Issue on "Behavioral Consequences of Gender Difference"

Editors: Dr. Jaume Garcia-Segarra (Universitat Jaume I de Castellón), Dr. Iñigo Hernandez-Arenaz (Universidad Pública de Navarra), and Dr. Pedro Rey-Biel (ESADE Business School)

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