Online Appendix for:

Does Interacting with Women Encourage Civic and Prosocial Attitudes?

Evidence from Simulated Contact Experiments in Saudi Arabia and Kuwait by Calvert W. Jones, University of Maryland

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# Appendix A. Additional Detail on Experiments and Fieldwork

The experimental designs are informed by original fieldwork conducted by the author(s) between 2009 and 2016 in the Gulf region, including work in the United Arab Emirates, Kuwait, Bahrain, Qatar, Saudi Arabia, Qatar, and Oman. The fieldwork included visits to schools and universities, observing classroom dynamics and interviewing faculty, students, and staff on gender-segregated campuses (in Arabic and English). The experiments could not be face-to-face due to risks and challenges in these countries, as discussed in the paper.

To design them, input from local faculty was combined with existing theory and research to construct vivid and engaging scenarios of simulated social interaction. The scenario used in Saudi Arabia involved a simulated interview with a female student from another university. In Kuwait, a mystery scenario was used in which subjects worked with another detective, randomly assigned as male or female, to solve a bank robbery. This scenario was previously shown to be an engaging workplace task within experiments on diverse interactions (Loyd et al. 2013; Phillips 2003; Phillips, Liljenquist, and Neale 2009). Materials for the mystery scenario were adapted with permission from Phillips, Liljenquist, and Neale (2009).

Both experiments employed similar procedures and materials, using voluntary anonymous paper-and-pencil surveys offered to participants in classroom settings at local universities in Medina, Saudi Arabia (n=197) and Kuwait City, Kuwait (n=201) in 2016. The universities were large public universities, with some additional subjects in Kuwait sampled from a nearby private Arab university.[[1]](#footnote-1) Subjects were recruited from introductory-level classes in education, media, and communications. Surveys were facilitated logistically by women faculty and university administrative staff, and administered in person by men faculty colleagues to college men participants on the men’s campuses of the segregated universities. They took about 10 minutes for students to complete.

The fieldwork, including the experiments, received the approval of the Institutional Review Boards (IRB) at [university]. Surveys were anonymous and did not collect any personally identifying information. Paper-based surveys included an informed consent introduction, explaining that the survey was voluntary and respondents would remain anonymous. Respondents were informed they were free to refuse to participate with no consequence, and that they could choose to skip any questions.

All surveys were translated into Arabic. No students chose not to participate (likely because the surveys provided a break from class lectures). Of the 398 surveys administered, a total of nine were unusable (3 in Kuwait, 6 in Saudi Arabia) due to illegibility or obvious inattention, such as answering all questions with the same choice or failing to answer most questions. Due to time constraints, and also the straightforward nature of the treatment—man/woman, with clearly gender-identifying names—manipulation check items were not included. The controlled conditions and presence of faculty in the room helped ensure that most students attended to the survey.

## A1. Adherence to the APSA Principles and Guidance for Human Subjects Research

This research, in terms of planning, administration, and analysis, adheres to the principles and guidance described in the APSA Principles and Guidance for Human Subjects Research. Simulated contact experiments were used and involved no known risks to participants. No deception was used on the part of the interviewers or researchers. Respondents could refuse to participate, and they could also refuse to answer individual questions.

For informed consent, the surveys included an introductory page with the IRB-approved script in Arabic. The script included clear information about the voluntary nature of the respondent’s participation, the fact that refusal to participate would have no consequences, and the fact that the respondent’s answers would remain completely anonymous and not linked to the respondent in any way. The script also emphasized that the study data would be kept in secure digital files and their access would be limited to scholars committed to maintaining the integrity of the data. The script explained that there were no known risks associated with the study, and that while the participant would not experience any direct benefits from participation, the information collected may contribute to general knowledge of human behavior. The faculty members and assistants who administered the surveys also provided this information verbally to the students. Contact information for the principal investigator and also the IRB office overseeing this research was included should the participant want further information or clarification.

## A2. Note on Preregistration

For these experiments, no pre-analysis plan (PAP) was registered, for several reasons. First, the experiments were conducted in 2016, and at the time, the registration process was still in its infancy. Very few political scientists were submitting plans yet (Ofosu and Posner 2021). Moreover, in 2016, the norms and standards for what should be included in pre-analysis plans were still developing, and the registrations that were submitted were not consistent (Ofosu and Posner 2021). Few if any journals required a PAP then, and political scientists had not yet adopted the process in great numbers.

Most importantly, the experiments in Saudi Arabia and Kuwait were only possible due to brief windows of opportunity, given rapidly changing political conditions in both countries, and thanks to colleagues at universities in those countries who were able to facilitate administration of surveys within gender-segregated contexts. As noted in the article, the opportunity to conduct research in Medina is extremely rare, and the experiments presented here are one-of-a-kind, offering a rare glimpse into the effects of mixed-gender interactions among Saudi men, in a city in which foreigners have traditionally been prohibited from entering. Ofosu and Posner (2021) report that the modal researcher in their sample who provided a PAP in 2018 spent 2-4 weeks preparing the pre-registration materials; there would have been insufficient time to prepare a PAP because of the short window of opportunity to conduct these experiments.

Finally, Ofosu and Posner (2021) suggest that PAPs are most useful for research involving complex statistical analyses with multiple possibilities for controls and modeling strategies. By contrast, the experiments here are two-group designs with random treatment assignments, aligned with the “Goldberg model,” in which treatments are identical except for the gender of the person featured (e.g., Sapiro 1981). The main results are presented as simple differences in means (t-tests) without controls or alternative models needed.

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# Appendix B. Question Wording and Answer Scales

Outcome variables were selected based on fieldwork and consultation with in-country scholars about appropriate, low-risk measures tapping civic and prosocial attitudes that would resonate locally. The list below shows item wording and answer scales used to construct all outcome variables in the two studies (in English and Arabic). Arabic was used.

For *openness*, responses to two Likert items drawing from the updated dogmatism scale in Shearman and Levine (2006) were averaged. For *egalitarianism*, which focused on gender egalitarianism, two items were combined (averaged) building on Benstead (2013) and the Arab Barometer. *Tolerance* was assessed with a four-item index (averaged) of Likert statements drawn from Woo et al. (2014).

*Rule-following* (including *law-abidingness*) was measured with an index of items adapted from the World Values Survey. The index asks respondents how justifiable they find various ethically questionable behaviors, such as “exaggerating on your resume.” Two of the items were illegal (“accepting a bribe” and “driving over the speed limit”), and both the overall index of five items (*rule-following*) as well as a subset of the two illegal items (*law-abidingness*) are analyzed; items were reverse-scored and then averaged so that higher scores on the indices reflect heightened tendency toward rule-following.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Items** | | **Answer Scale** | |
| **English** | **Arabic Translation** | **English** | **Arabic Translation** |
| *Openness* | There is usually only one correct opinion about an issue\* | عادة ما يكون هناك رأي واحد صحيح فقط حول أي قضية | 1=strongly disagree -7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| I believe there are two sides to every question, and try to look at both | انا أؤمن أن هنالك وجهان لكل سؤال، وأحاول البحث عن كليهما | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| *Rule-following* | Taking government benefits that you do not need\* | أخذ الإعانات الحكومية التي لست بحاجة لها | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| Accepting a bribe\* | قبول رشوة | 1=never justifiable -7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| Driving over the speed limit\* | القيادة فوق السرعة المحددة | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| Exaggerating on your resume\* | المبالغة في سيرتك الذاتية | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| Hiring a family member for a position in a business, when another applicant is more qualified\* | تعيين أحد أفراد العائلة في وظيفة بينما هناك شخص متقدم للوظيفة أكثر كفاءة منه | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| *Law Abidingness* (subset of two items from rule-following index) | Accepting a bribe\* | قبول رشوة | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| Driving over the speed limit\* | القيادة فوق السرعة المحددة | 1=never justifiable - 7=always justifiable | 1= لا يمكن تبريرها على الإطلاق -  7= دائما مبررة |
| *Tolerance* | I enjoy living in a diverse community, with people from different religious backgrounds | أنا أستمتع للعيش في مجتمع متنوع، مع أناس من أديان مختلفة | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| I prefer spending time with people of my own nationality\* | أنا أفضل قضاء الوقت مع أشخاص من بلدي، الذين لديهم نفس جنسية لي | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| I like to hear different people’s views on political issues, even when I don’t agree | أحب أن أسمع آراء الناس مختلفة حول القضايا السياسية، حتى عندما أنا كنت لا أتفق معهم | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| I enjoy spending time with people from different ethnic backgrounds | أنا أستمتع بقضاء الوقت مع أشخاص من خلفيات عرقية مختلفة | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| *Egalitarianism* | Men and women should have equal job opportunities, wages, and salaries | يجب على الرجال والنساء أن تتساوى فرص عملهم، وأجورهم ومرتباتهم | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |
| In general, social and economic problems would improve if there were more women in government | عموماً، ستتحسن الأوضاع الاجتماعية و الاقتصادية لو كان هناك نساء أكثر في الحكومة | 1=strongly disagree - 7=strongly agree | - 1= أعارض بشدة  7= أوافق بشدة |

\* Reverse-scored

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# Appendix C. Descriptive Statistics

The tables below show descriptive statistics for demographic variables. For religiosity, 1=religious, 2=somewhat religious, and 3=not religious (answer choices mirroring the Arab Barometer). For income, scaled 1-7, higher scores indicate higher (self-reported) income. Age was measured as respondents’ given age.

## Table C1. Demographics by treatment condition

The table below shows descriptive statistics for demographic variables by treatment condition in Kuwait and Saudi Arabia, and also pooled across the two sites.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Interaction with | Kuwait | | Saudi Arabia | | Pooled Data | |
|  | x̄ (sd) | Difference (se) | x̄ (sd) | Difference (se) | x̄ (sd) | Difference (se) |
| Age | Woman | 21.3 | -.71  (.53) | 19.6 | -.11  (.46) | 21.2 | -.50  (.48) |
|  | (3.82) | (.74) | (3.71) |
| Man | 22.0 | 19.7 | 21.7 |
|  | (3.43) | (1.16) | (3.30) |
| Religiosity | Woman | 2.02 | .01  (.09) | 1.93 | -.07  (.09) | 1.98 | -.03  (.06) |
|  | (.61) | (.61) | (.61) |
| Man | 2.01 | 2.0 | 2.01 |
|  | (.61) | (..52) | (.57) |
| Income | Woman | 4.26 | -.07  (.12) | 4.28 | .08  (.12) | 4.27 | .003  (.08) |
|  | (0.76) | (..76) | (.76) |
| Man | 4.33 | 4.20 | 4.26 |
|  | (0.86) | (.85) | (.85) |

## Table C2. Demographics across samples

The table below compares the demographics of the two samples. No significant differences appear except for age; Saudi participants were somewhat younger than Kuwaiti ones.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Kuwait  x̄ (sd) | Saudi Arabia  x̄ (sd) | Difference(se) |
| Age | 21.7(3.65) | 19.7(1.02) | 1.96(.77)  p=.011 |
| Religiosity | 2.02(.61) | 1.97(.57) | .05(.06) |
| Income | 4.29(.81) | 4.24(.81) | 0.05(.08) |

# Appendix D. Evidence of Gender Stereotypes

Saudi subjects were asked to judge whether each adjective (drawn from common gender trait stereotypes) was “more like guys” or “more like girls” on a scale of 1 to 10, where 1 = “more like guys” and 10 = “more like girls.” Figure D1 reports the results—the mean ratings (with 95% confidence intervals) of gendered trait adjectives in terms of whether they are viewed as more masculine or more feminine (within the Saudi sample, n=191).

As expected, the table shows that participants viewed stereotypically masculine traits (“decisive” and “powerful”) as “more like guys,” and stereotypically feminine traits (“warm” and “truthful”) as more feminine in comparison to the stereotypically masculine traits. Thus, they appear to endorse benevolent sexist stereotypes about women. At the same time, it is interesting to observe that the male stereotypes appear stronger, in that they are viewed as more masculine than the female stereotypes are viewed as feminine; the latter are closer to the midpoint. This may suggest that men’s assumptions about women’s traits are evolving, in keeping with rapidly changing regulations surrounding gender in Saudi Arabia, while their assumptions about men’s traits may be more stable.

## Figure D1. Mean ratings of gendered adjectives

Chart

Description automatically generated

A further confirmation can be found by averaging responses for the two stereotypically masculine and the two stereotypically feminine traits, respectively, to create trait indices, and assessing the difference using a paired samples t-test. Table D1 shows the means, standard deviations, difference, standard error of the difference, and Cohen’s d to estimate effect size. These results confirm that Saudi men in the sample judged “warm” and “truthful” to be more descriptive of girls and “decisive” and “powerful” to be more descriptive of guys.

## Table D1. Paired samples t-test

|  |  |  |
| --- | --- | --- |
|  | **Mean(sd)** | **Difference (se)** |
| *Warm/Truthful* | 6.37 (2.15) | 3.00 (0.29) p<.001  Cohen’s d=.8 |
| *Decisive/Powerful* | 3.37 (2.53) |

# Appendix E. Additional Analysis on Interaction Effects

The following table reports results from regressions of the dependent variables on indicators for the gender of the interlocutor (0=man, 1=woman), self-reported religiosity (1=religious, 2=somewhat religious, and 3=not religious), and the interaction (gender of interlocutor\*religiosity). Because main experimental results are reported in the article, the focus here is the interaction, and level-of-significance indicators appear only for the interaction terms for each dependent variable (and are shaded for ease of reference). Interaction effects were non-significant in the case of other demographic variables measured (self-reported income and age).

As can be seen, significant or marginally significant interaction effects appeared for religiosity in several cases, and in all those cases the pattern was similar, with higher religiosity appearing to dampen the positive civic effects of interacting with a woman (as depicted in Figure 1 in the article). (In all cases, the coefficient for the interaction term was negative, even when not significant.) While no hypotheses were proposed about religiosity, the results are suggestive and highlight a need for further research on types of religiosity (or politicized religiosity, e.g., political Islam, political Christianity) and the demands they are perceived to make on gender relations in different contexts.

## Table E1. Interaction Effects: Religiosity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Kuwait  B(se) | Saudi Arabia  B (se) | Pooled  B(se) |
| Openness | (Constant) | 4.85 (1.08) | 3.61 (1.04) | 4.29 (0.75) |
| Gender of Interlocutor | -0.16 (0.69) | 0.88 (0.7) | 0.29 (0.49) |
| Religiosity | 0.41 (0.52) | 0.99 (0.51) | 0.67 (0.36) |
| Gender of Interlocutor \* Religiosity | -0.18 (0.33) | -0.69 (0.34)  p=043 | -0.4 (0.23)  p=.088 |
| Egalitarianism | (Constant) | 2.05 (1.27) | 1.35 (1.3) | 1.67 (0.91) |
| Gender of Interlocutor | 0.29 (0.8) | 1.18 (0.86) | 0.71 (0.59) |
| Religiosity | 1.43 (0.61) | 1.12 (0.64) | 1.31 (0.44) |
| Gender of Interlocutor \* Religiosity | -0.51 (0.38) | -0.61 (0.42) | -0.56 (0.28)  p=.049 |
| Ethics | (Constant) | 6.01 (0.73) | 4.91 (0.65) | 5.44 (0.49) |
| Gender of Interlocutor | 0.01 (0.47) | 0.6 (0.43) | 0.32 (0.32) |
| Religiosity | -0.11 (0.35) | 0.3 (0.32) | 0.1 (0.24) |
| Gender of Interlocutor \* Religiosity | -0.13 (0.23) | -0.28 (0.21) | -0.21 (0.16) |
| Law Abidingness (subset) | (Constant) | 6.62 (0.89) | 5.61 (0.87) | 6.12 (0.62) |
| Gender of Interlocutor | -0.17 (0.57) | 0.33 (0.58) | 0.09 (0.41) |
| Religiosity | -0.25 (0.42) | 0.23 (0.43) | -0.02 (0.3) |
| Gender of Interlocutor \* Religiosity | -0.08 (0.27) | -0.25 (0.28) | -0.17 (0.2) |
| Tolerance | (Constant) |  | 3.74 (0.91) |  |
| Gender of Interlocutor | 0.11 (0.61) |
| Religiosity | 0.42 (0.45) |
| Gender of Interlocutor \* Religiosity | -0.19 (0.3) |

# Appendix F. Additional Context on Gender Inequality

To provide some deeper context, in Saudi Arabia, the male guardianship system has historically treated adult women as perpetual legal minors, subject to restrictions that do not apply to men (Doumato 1992, 2001; Deif 2008; Al-Rasheed 2013; Le Renard 2014; Human Rights Watch 2016). Despite recent reforms spearheaded by the crown prince, Mohammad bin Salman, Saudi women may not get married or access certain kinds of healthcare without permission from a male guardian, such as a father, husband, or son, and men may file cases against women relatives for “disobedience,” which can result in imprisonment (Human Rights Watch 2016). Until 2018, women were not allowed to drive, and only in the past fifteen years have they gained the ability, typically by royal decree, to work, rent an apartment, check into hotels, travel, study abroad, and apply for a passport, without first obtaining male permission.

Although Kuwait is notably less conservative, similar norms exist (Human Rights Watch 2000; al-Mughni 2001; Tétreault 2001; Al-Sabah 2013; Alzuabi 2016; Aldosari 2016). Unlike Saudi Arabia, Kuwait has long had an elected parliament exercising considerable independence—though women only gained the right to vote in 2005, compared to men in 1961—and a constitution outlining a general commitment to equality. Nevertheless, the country’s personal status law requires that Sunni Muslim women must obey their husbands and, if single, seek permission from a male guardian to marry (Human Rights Watch 2021). A global study found that 99% of Kuwaiti men express some prejudice against women (UNDP 2020).

While both Saudi Arabia and Kuwait remain relatively gender-inegalitarian by global standards, conditions in both countries continue to change. Feminist activism is growing (Olimat 2012; Shalaby 2015; Alsahi 2018). At the time of the research, Saudi Arabia was undergoing, and continues to undergo, rapid change in regulations surrounding gender relations. In 2017, King Salman (who succeeded King Abdallah in 2015) issued a decree to lift the ban on women driving. In Kuwait, activists launched a social media campaign in 2021 against sexual harassment and violence against women (“Lan Asket,” I will not be silent), which have generally been taboo topics (Radwan & Al Ibrahim, 2021).

A critical area of contestation continues to be gender segregation. Segregation and male guardianship both have ambiguous legal status. Indeed, they are often maintained more by informal social norms (Human Rights Watch 2016; Al-Bakr et al. 2017), and are also regularly challenged. In Saudi Arabia, as mentioned, some restrictions have been lifted recently, yet with no constitution or bill of rights, changes typically occur by royal decree. Judges are not necessarily bound by such decrees and changes remain universally neither supported nor enforced (Tønnessen 2016).

It is important to emphasize that practices of segregation and male guardianship should not be deemed “traditional” or “Islamic” and are in no way static (Gause 2010; Le Renard 2008; Meijer 2010). In rural areas of Saudi Arabia, men had long worked alongside women prior to the 1960s, and it was not until that decade that segregation was institutionalized by state officials, who viewed it as progressive.[[2]](#footnote-2) Moreover, Kuwait University was co-ed until an Islamist-leaning parliament in the 1990s proposed gender segregation in classes, libraries, labs, and extracurricular activities. Despite many students petitioning against it, the university has been segregated by law, with separate men’s and women’s campuses, since 2001 (and private universities since 2008)—though local interpretations and enforcement vary, and the “segregation law” was challenged again in 2016 (Algharabali 2010; AlMatrouk 2016).

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# Appendix G. JEPS Reporting Guidelines

## G1. Hypotheses

The experiment is designed to investigate the effects of simulated contact with women on civic and prosocial attitudes among Saudi and Kuwaiti college men. The hypotheses include H1a, which represents a “hard test” of the results from similar studies conducted in more gender-egalitarian contexts, and an alternative hypothesis (H1b) drawn from social dominance theory.

H1a. Men in simulated interactions with women will display higher civic and prosocial orientations compared to those in simulated interactions with men.

H1b. Men in simulated interactions with women will display lower civic and prosocial orientations compared to those in simulated interactions with men.

## G2. Subjects and Contexts

Saudi and Kuwaiti college men were selected for the study as a “hard test” of H1a. The students in the study were enrolled in classes in Arab universities in Kuwait City, Kuwait, and Medina, Kingdom of Saudi Arabia. No incentives were offered. See Appendix A for further details.

## G3. Allocation Methods

Subjects were randomly assigned to the treatment and control groups in both locations. Demographic characteristics of those assigned are shown in Appendix C, Tables C1 and C2. With respect to blinding, all involved were unaware of outcome assignments, including the faculty member who administered the surveys in the classes. See Appendix A for more information.

## G4. Treatments

The treatment group received surveys in which the simulated interaction was with a woman, and the control group received surveys in which the same simulated interaction was with a man. The paper-based surveys, which took approximately 10 minutes, were all provided in Arabic, including the introductions. No deception was used. There were no practice rounds or instructions other than the text material on the surveys.

The text of the treatment and control conditions follow.

**Kuwait Study – Treatment Group**

Imagine you’re a detective investigating a crime. Suppose someone broke into a bank last night about 3 AM and stole thousands of Kuwaiti dinars in two black briefcases. The police have three suspects.

A picture containing shape

Description automatically generated

**Abdulla**: Abdulla was seen driving near the bank around 2 AM. His car was found this morning abandoned on a dirt road near the airport, with keys inside. Police are trying to find him but his friends say they think he left the country by plane early this morning. There are tire tracks next to the bank that match Abdulla’s abandoned car.

**Layla:** Layla was stopped this morning for speeding, and two black briefcases were found in her car. The briefcases look like the briefcases stolen from the bank, but they are empty. She has no alibi for the time of the crime. When the police asked why she had two empty briefcases, she refused to answer the question.

**Hamdan:** Hamdan works at the bank as a lower level manager, and has access to the bank vaults. He says he left work at 9 PM. However, no one at the bank can confirm this, so he has no alibi, and his wife says he did not return home until sunrise. The police also learn that Hamdan has major debts that he needs to pay off.

Now, suppose you’re preparing for your first meeting with another detective. The other detective is Maryam. She is a woman who has been working the same number of years as you as a detective. She has studied the same materials on the three suspects above, and has also selected a suspect for further investigation. Together, you and Maryam will put all the pieces together and solve the crime.

At your first meeting, how likely do you think it is that Maryam will agree with you on which suspect is most likely to have committed the crime?

Now suppose you are ready for your meeting with Maryam. But before the meeting, you discover that Maryam disagrees with you, and has selected a different suspect for further investigation.

Congratulations! Your meeting with the other detective, Maryam, was a success. After discussing several possibilities, you agree on which suspect to investigate, and you solve the crime together.

**Kuwait Study – Control Group**

Imagine you’re a detective investigating a crime. Suppose someone broke into a bank last night about 3 AM and stole thousands of Kuwaiti dinars in two black briefcases. The police have three suspects.

A picture containing shape

Description automatically generated

**Abdulla**: Abdulla was seen driving near the bank around 2 AM. His car was found this morning abandoned on a dirt road near the airport, with keys inside. Police are trying to find him but his friends say they think he left the country by plane early this morning. There are tire tracks next to the bank that match Abdulla’s abandoned car.

**Layla:** Layla was stopped this morning for speeding, and two black briefcases were found in her car. The briefcases look like the briefcases stolen from the bank, but they are empty. She has no alibi for the time of the crime. When the police asked why she had two empty briefcases, she refused to answer the question.

**Hamdan:** Hamdan works at the bank as a lower level manager, and has access to the bank vaults. He says he left work at 9 PM. However, no one at the bank can confirm this, so he has no alibi, and his wife says he did not return home until sunrise. The police also learn that Hamdan has major debts that he needs to pay off.

Now, suppose you’re preparing for your first meeting with another detective. The other detective is Fahad. He is a man who has been working the same number of years as you as a detective. He has studied the same materials on the three suspects above, and has also selected a suspect for further investigation. Together, you and Fahad will put all the pieces together and solve the crime.

At your first meeting, how likely do you think it is that Fahad will agree with you on which suspect is most likely to have committed the crime?

Now suppose you are ready for your meeting with Fahad. But before the meeting, you discover that Fahad disagrees with you, and has selected a different suspect for further investigation.

Congratulations! Your meeting with the other detective, Fahad, was a success. After discussing several possibilities, you agree on which suspect to investigate, and you solve the crime together.

**Saudi Arabia Study – Treatment Group**

Imagine that a girl at a nearby school or university would like to interview you for her class project. Her is name is Fatima, and she would like to hear your perspective and opinions about a wide range of issues. You have never met Fatima, but you know that the school she attends is a good one, and she is nice and smart.

A picture containing text

Description automatically generated

Fatima says, “Thank you for the opportunity to interview you. I am very interested to hear your opinions on different issues in society. First, do you agree or disagree with the following statements?”

Now, Fatima says, “Let’s move to your perspective about the way the world works today. Below are some different opinions about the way the world works. To what extent do you agree or disagree with the following statements?”

Then, Fatima looks at what you answered and nods. “Thanks for that, and here are some more questions. What do you think about these?”

Fatima replies, “Thank you. Here are some actions that people sometimes do. How justifiable do you, personally, think they are?”

Fatima adds, “Thank you so much for your patience. I have one last question. Do you agree or disagree with these statements?”

**Saudi Arabia Study – Control Group**

Imagine that a guy at a nearby school or university would like to interview you for his class project. His name is Hassan, and he would like to hear your perspective and opinions about a wide range of issues. You have never met Hassan, but you know that the school he attends is a good one, and he is nice and smart.

![A picture containing text, tool

Description automatically generated]()

Hassan says, “Thank you for the opportunity to interview you. I am very interested to hear your opinions on different issues in society. First, do you agree or disagree with the following statements?”

Now, Hassan says, “Let’s move to your perspective about the way the world works today. Below are some different opinions about the way the world works. To what extent do you agree or disagree with the following statements?”

Then, Hassan looks at what you answered and nods. “Thanks for that, and here are some more questions. What do you think about these?”

Hassan replies, “Thank you. Here are some actions that people sometimes do. How justifiable do you, personally, think they are?”

Hassan adds, “Thank you so much for your patience. I have one last question. Do you agree or disagree with these statements?”

**Kuwait Study – Treatment Group (Arabic)**

تخيل أنك المخبر للتحقيق في جريمة. لنفترض أن شخصاً اقتحم البنك الليلة الماضية حوالي 03:00 صباحاً وسرق آلاف الدنانير الكويتية في اثنين من الصناديق الصغيرة السوداء. الشرطة لديها ثلاثة مشتبهين بهم.



**عبد الله:**

شوهد عبد الله و هو يقود بالقرب من البنك حوالي 02:00 صباحاً. عثر على سيارته صباح اليوم مهجورة على طريق ترابي بالقرب من المطار، مع المفاتيح بالداخل. تحاول الشرطة للعثور عليه ولكن أصدقاءه يقولون انهم يعتقدون أنه غادر البلاد على متن طائرة في وقت مبكر من صباح اليوم. هناك مسارات إطارات بجانب البنك و هي تتطابق سيارة عبدالله المهجورة

**ليلى:**

اوقفت ليلى صباح اليوم لتجاوزها السرعة المقررة، وعثر على اثنين من الصناديق الصغيرة السوداء في سيارتها. والصناديق الصغيرة تشبه الحقائب المسروقة من المصرف، ولكن كانت فارغة. لم يكن لديها عذر لوقت وقوع الجريمة. عندما سألتها الشرطة لماذا كان لديها اثنين من الحقائب الفارغة، رفضت الإجابة على السؤال

**حمدان:**

يعمل حمدان في البنك في ​​مستوى مدير صغير، و يمكنه الوصول إلى خزائن البنك. ويقول انه ترك العمل في 09:00 مساءً. ومع ذلك، لا يمكن لأحد في البنك أن يؤكد ذلك، حتى انه لا يوجد لديه عذر، وزوجته تقول انه لم يعد إلى منزله حتى شروق الشمس. الشرطة تعلم أيضا أن حمدان عليه ديون كبيرة يحتاج إلى سدادها

الآن، لنفترض أنك تستعد للقائك الأول مع المخبر آخر. المخبر الآخر هو مريم. إنها امرأة عملت نفس العدد السنوات التي عملتها كمخبر. و درست نفس المواد عن المشتبه بهم الثلاثة المذكورين أعلاه، واختارت أيضا أحد المشتبه بهم لمزيد من التحقيق. معا، ستعمل أنت ومريم لحل هذه الجريمة.

في اجتماعكم الأول، في رأيك ما مدى احتمال اتفاقك مع مريم على مشتبه به المرتكب الجريمة؟

الآن لنفترض أنك على استعداد لاجتماعك مع مريم. ولكن قبل الاجتماع، تكتشف أن مريم تختلف معك، واختارت المشتبه به آخر للتحقيق معه.

تهانينا! اجتماعك مع المخبر الآخر، مريم، كان ناجحاً . وبعد مناقشة عدة احتمالات، تم الإتفاق على المتهم الذي يجب التحقيق معه، و حللتم الجريمة معاً.

**Kuwait Study – Control Group (Arabic)**

تخيل أنك المخبر للتحقيق في جريمة. لنفترض أن شخصاً اقتحم البنك الليلة الماضية حوالي 03:00 صباحاً وسرق آلاف الدنانير الكويتية في اثنين من الصناديق الصغيرة السوداء. الشرطة لديها ثلاثة مشتبهين بهم.



**عبد الله:**

شوهد عبد الله و هو يقود بالقرب من البنك حوالي 02:00 صباحاً. عثر على سيارته صباح اليوم مهجورة على طريق ترابي بالقرب من المطار، مع المفاتيح بالداخل. تحاول الشرطة للعثور عليه ولكن أصدقاءه يقولون انهم يعتقدون أنه غادر البلاد على متن طائرة في وقت مبكر من صباح اليوم. هناك مسارات إطارات بجانب البنك و هي تتطابق سيارة عبدالله المهجورة

**ليلى:**

اوقفت ليلى صباح اليوم لتجاوزها السرعة المقررة، وعثر على اثنين من الصناديق الصغيرة السوداء في سيارتها. والصناديق الصغيرة تشبه الحقائب المسروقة من المصرف، ولكن كانت فارغة. لم يكن لديها عذر لوقت وقوع الجريمة. عندما سألتها الشرطة لماذا كان لديها اثنين من الحقائب الفارغة، رفضت الإجابة على السؤال

**حمدان:**

يعمل حمدان في البنك في ​​مستوى مدير صغير، و يمكنه الوصول إلى خزائن البنك. ويقول انه ترك العمل في 09:00 مساءً. ومع ذلك، لا يمكن لأحد في البنك أن يؤكد ذلك، حتى انه لا يوجد لديه عذر، وزوجته تقول انه لم يعد إلى منزله حتى شروق الشمس. الشرطة تعلم أيضا أن حمدان عليه ديون كبيرة يحتاج إلى سدادها

الآن، لنفترض أنك تستعد للقائك الأول مع المخبر آخر. المخبر الآخر هو فهد. إنه رجل عمل نفس العدد السنوات التي عملتها كمخبر. و درس نفس المواد عن المشتبه بهم الثلاثة المذكورين أعلاه، واختار أيضا أحد المشتبه بهم لمزيد من التحقيق. معا، ستعمل أنت وفهد لحل هذه الجريمة.

في اجتماعكم الأول، في رأيك ما مدى احتمال اتفاقك مع فهد على مشتبه به المرتكب الجريمة؟

الآن لنفترض أنك على استعداد لاجتماعك مع فهد. ولكن قبل الاجتماع، تكتشف أن فهد يختلف معك، واختار مشتبه به آخر للتحقيق معه

تهانينا! اجتماعك مع المخبر الآخر، فهد، كان ناجحاً . وبعد مناقشة عدة احتمالات، تم الإتفاق على المتهم الذي يجب التحقيق معه، و حللتم الجريمة معاً.

**Saudi Arabia Study – Treatment Group (Arabic)**

تخيل أن فتاة من مدرسة قريبة أو الجامعة ترغب في مقابلتك لمشروع صفها. اسمها فاطمة، هي تود أن تسمع وجهة نظرك و آراءك حول مجموعة واسعة من القضايا، أنت لم تقابل فاطمة قط ولكن تعلم أن فاطمة تذهب إلى مدرسة ممتازة وأن فاطمة لطيفة و ذكية

.

تقول فاطمة: "شكرا لك على هذه الفرصة لمقابلتك. أنا مهتمة جدا لسماع آرائك حول قضايا مختلفة في المجتمع. أولا، هل تتفق أو تختلف مع العبارات التالية؟"

تقول فاطمة: "الآن اريد ان أسألك عن الطريقة التي تنظر بها الى العالم، الى اي مدى تتفق او تختلف مع العبارات التالية؟"

تنظر فاطمة الى إجاباتك بالإيجاب. " شكرًا، هنالك المزيد من الأسئلة، ما رأيك في العبارات التالية؟"

ترد فاطمة: "شكراً، لدينا هنا بعض السلوكيات التي يقوم بها الناس أحيانا. ما مدى تبريرها برأيك؟"

وتضيف فاطمة: "شكرا جزيلا لك على صبرك. لدي سؤال أخير، هل توافق أو تعارض العبارات التالية؟"

**Saudi Arabia Study Control Group (Arabic)**

تخيل أن شاب من مدرسة قريبة أو الجامعة يرغب في مقابلتك لمشروع صفه. اسمه أحمد، هي يود أن يسمع وجهة نظرك و آراءك حول مجموعة واسعة من القضايا، أنت لم تقابل أحمد قط ولكن تعلم أن أحمد يذهب إلى مدرسة ممتازة وأن أحمد لطيف و ذكي.



يقول أحمد: "شكرا لك على هذه الفرصة لمقابلتك. أنا مهتم جدا لسماع آرائك حول قضايا مختلفة في المجتمع. أولا، هل تتفق أو تختلف مع العبارات التالية؟"

يقول أحمد: "الآن اريد ان أسألك عن الطريقة التي تنظر بها الى العالم، الى اي مدى تتفق او تختلف مع العبارات التالية؟"

ينظر أحمد الى إجاباتك بالإيجاب. " شكرًا، هنالك المزيد من الأسئلة، ما رأيك في العبارات التالية؟"

يرد أحمد : "شكراً، لدينا هنا بعض السلوكيات التي يقوم بها الناس أحيانا. ما مدى تبريرها برأيك؟"

ويضيف أحمد: "شكرا جزيلا لك على صبرك. لدي سؤال أخير,هل توافق أو تعارض العبارات التالية؟"

## G5. Results

The question wording and answer scales for the dependent variables are shown in Appendix B, including the coding for indices. Several demographic questions were also included, listed below.

**English**

What is your gender? \_\_\_ Male \_\_\_ Female

What is your age? \_\_\_\_\_\_\_\_

What is your country of citizenship? \_\_\_\_\_\_\_\_\_\_\_\_\_

Generally speaking, would you describe yourself as:

\_\_ Religious

\_\_ Somewhat religious

\_\_ Not religious

Where would you place your household on the scale of income levels? 1 stands for “very poor” and 7 stands for “very wealthy.” Please circle a number.

1 2 3 4 5 6 7

In addition, subjects in the Saudi Arabia study were asked to rate the following adjectives as “More like guys” or “More like girls”:

**More like guys More like girls**

Warm 1 2 3 4 5 6 7 8 9 10

Decisive 1 2 3 4 5 6 7 8 9 10

Truthful 1 2 3 4 5 6 7 8 9 10

Powerful 1 2 3 4 5 6 7 8 9 10

**Arabic**

الجنس: ❑ذكر ❑أنثى

عمرك: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ما هي جنسيتك؟ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

بشكل عام، هل تصف نفسك بانك شخص...

❑ ﻤﺘﺩﻴﻥ

❑ ﻤﺘﺩﻴﻥ إلى حد ما

❑ ﻏﻴﺭ ﻤﺘﺩﻴﻥ

في أي مستوى من مستويات الدخل تقيم دخل منزلك؟ المقياس 1 "فقير جدا" و 7 "ثري جدا." الرجاء وضع دائرة حول الرقم المناسب.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

ثري جدا متوسط فقير جدا

الرجاء قراءة الكلمات التالية . اختر لأي مدى الصفات التالية تصف الفتيات أكثر من الفتيان ، أو الفتيان أكثر من الفتيات ، أو يصف كل من الفتيات والفتيان على حد سواء

|  | تصف الفتيان | |  | | | | | | | | **تصف الفتيات** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| دافئ | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| حاسم | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| قوي | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| صادق | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

The hypotheses listed in section H1 above were specified in advance. The analyses involving the interaction between religiosity and the dependent variables were exploratory in nature, as described in the paper.

## G6. Statistical Analysis

All statistical analyses were conducted using SPSS. The primary statistical analysis to test the hypotheses involved t-tests for independent samples that compared the dependent variable means of the treatment and control groups. Table 1 in the paper shows means, standard deviations, t values, degrees of freedom, and p values (where appropriate). See Appendix C for descriptive statistics on demographic variables by study site and treatment group. See Appendix D for statistical analysis of gender stereotype data from the Saudi Arabia sample. Appendix E contains details for the regression analyses that explore the interaction between treatment group and religiosity levels.

## G7. Other Information

The experiment was reviewed and approved by the Institutional Review Board at [redacted]. The experiment was not preregistered, as explained in Appendix A, section A2. Funding was provided by the university of the author(s). The names of the Arab universities where the experiments were conducted are not released publicly in order to preserve the anonymity of the subjects and research participants. There are no conflicts of interest.

1. The names of the Arab universities where the experiments were conducted are not released publicly in order to preserve the anonymity of the subjects and research participants. [↑](#footnote-ref-1)
2. Specifically, as public education spread, it was initially only for boys, and when King Faisal (r. 1964-1975) sought to include girls, the proposal was vociferously opposed by some *ʿulamāʾ* and other conservative elements in society, until it was agreed that separate schools for boys and girls would be required by law. [↑](#footnote-ref-2)