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Working Paper

On the Malleability of Implicit Attitudes Towards Women Empowerment: Evidence from Tunisia

IZA Discussion Papers, No. 12471

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Nillesen, Eleonora; Grimm, Michael; Goedhuys, Micheline; Reitmann, Ann-Kristin; Meysonnat, Aline (2019) : On the Malleability of Implicit Attitudes Towards Women Empowerment: Evidence from Tunisia, IZA Discussion Papers, No. 12471, Institute of Labor Economics (IZA), Bonn

This Version is available at:

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DISCUSSION PAPER SERIES

IZA DP No. 12471

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Towards Women Empowerment:
Evidence from Tunisia**

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JULY 2019

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ISSN: 2365-9793

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ABSTRACT

On the Malleability of Implicit Attitudes Towards Women Empowerment: Evidence from Tunisia*

We use an implicit association test (IAT) to measure implicit gender attitudes and examine the malleability of these attitudes using a randomized field experiment and quasi-experimental data from Tunisia. Women that appear most conservative respond to a randomized video treatment by reducing their implicit gender bias. Also, female interviewers invite more conservative responses to the IAT, especially among the male subsample. Perceived religiosity of the interviewer affects self-reported gender attitudes, but not IAT measures, suggesting social desirability may be at work. We discuss the implications of our findings for the use of implicit measures in development research.

JEL Classification: C83, D91, O12

Keywords: women empowerment, implicit association test, interviewer effects, Middle East and North Africa

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* The authors would like to thank seminar participants at CSAE Oxford, APSA Annual Meeting Boston, DIW Berlin, ZEF Bonn, University of East Anglia, University of Passau and UNU-MERIT for valuable comments and suggestions. The authors also thank Samy Kallel, Director General of BJKA Consulting, and his team for the professional implementation of the survey. This research was supported by funds from the International Labour Organisation (ILO) in Geneva, Switzerland (TAQEEM Initiative). The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the ILO.

I. Introduction

Recently there is an ever-increasing opportunity to do micro-level surveys across the world. This provides researchers with access to a wealth of fine-grained data to assess key questions for development. Data potential is however strongly defined by its quality and surveys typically largely rely on self-reported answers to questions (Di Maio and Fiala 2018). There are often no, or only limited possibilities for researchers to crosscheck answers through direct observation or alternative sources like administrative information. That may also not be necessary; we routinely accept that self-reported data on unambiguous questions such as the number of siblings or bike ownership carry a low risk of measurement error and are unlikely to provide incentives for misreporting (Baldwin 2000). Crosschecking would then lead to unnecessary survey costs and an additional burden for both the respondent and the enumerator. What about questions then that are plausibly more sensitive, more abstract, or both? If the former, respondents may not feel comfortable stating the truth if they believe this portrays an unfavorable image of themselves in view of existing laws or social norms. Abstract questions on the other hand may be prone to measurement error due to erroneous interpretations, whereas a combination of sensitive and abstract questions may suffer from both problems. Researchers therefore have started to increasingly rely on other (complementary) methods, including (unobtrusive) observational measures (Efferson et al. 2015), indirect survey questions (Rosenfeld, Imai, and Shapiro 2016) or some form of automatically retrieved associations like the implicit association test (IAT) (Greenwald, Nosek, and Banaji 2003; Kim 2006; Greenwald et al. 2009).

Our study uses an IAT to investigate attitudes towards women empowerment, an arguably sensitive and abstract topic that in recent years has become a top priority on national and global development agendas (UN Women 2011; European Commission 2015). Although women empowerment is a worthy goal of its own, there is also an extensive literature demonstrating a strong two-way link between women empowerment and economic development (Duflo and Udry 2004; Ashraf, Karlan, and Yin 2010; Duflo 2012; Cuberes and Teignier 2014). In many regions, significant parts of society are nevertheless unsupportive of women empowerment as the role of women in society is defined by religious norms and traditions with pervasive stereotypes towards women's ability to take decisions (Klasen and Lamanna 2009; Duflo 2012). Taking stock of gender attitudes therefore helps to better target policies and interventions that may be conducive to change prevailing social norms and behavior in favor of gender equality in particular areas or among particular groups. Yet, to empirically test whether interventions are indeed conducive to change, we need reliable data on gender attitudes. We use an IAT given the sensitivity and abstract nature of the topic, the impossibility of directly observing gender attitudes, and the fact that none of the indirect methods including a list or an endorsement experiment or a randomized response technique would be an obvious candidate to elicit gender attitudes (see also Rosenfeld, Imai, and Shapiro 2016).

Our study is set in Tunisia, a setting where traditional gender norms prevail. We developed an Arab version of the IAT to measure respondents' unbiased implicit attitudes towards women empowerment. In addition, we examine whether implicit gender attitudes are malleable at least in the short run. Lab experimental evidence suggests that implicit measures may change in response to strengthening or weakening associations, or setting goals to weaken or strengthen bias, for example by making antiprejudice norms salient (for example Dasgupta and Greenwald 2001; Blair 2002; Dasgupta and Asgari 2004; Ferguson and Bargh 2004; Ferguson 2008; Horcajo, Briñol, and Petty 2010; Rudman and Phelan 2010; Todd et al. 2011). The question is whether we observe such relationships outside of the lab. We use two different cues to get at this issue, one of which is randomized, whereas the other takes the

form of a quasi-experiment. Our randomized intervention is a short video, representing real-life gender reforms affecting Tunisian society in the recent past, present and foreseeable future, and has three interrelated aims: to (i) provide people with information about these reforms, (ii) set goals with respect to gender equality, and (iii) be conducive to weakening gender stereotypes. Being primed on these issues may provide important insights into how society will react to future reforms that are clearly underway and may help policymakers anticipate these reactions, not only in Tunisia, but also in other societies where strong gender inequality is an issue. We hypothesize that the video intervention affects implicit gender attitudes. We also hypothesize that such an effect may differ by groups. Specifically, we expect men and women to react differently to such an intervention due to gender-specific preferences, motivation, and goals. In addition, we expect differential impacts for groups with traditional versus modern norms towards gender parity as measured by self-reported, explicit attitudes.

Although a video intervention may affect gender attitudes as we hypothesize above, we also argue that personal traits of the interviewer or experimenter play a role. We look at two traits we deem particularly relevant for our setting: gender and perceived religiosity. Studies in the US show that respondents provide more progressive and egalitarian answers on gender-sensitive questions when interviewed by women (Kane and Macaulay 1993; Huddy et al. 1997). By contrast, Benstead (2014b) finds that only men report more egalitarian views to female interviewers in a study in Morocco. This suggests that context matters and that interviewer effects might be asymmetric (Flores-Macias and Lawson 2008). We are aware of only two studies that look at the effects of (perceived) interviewer religiosity in survey responses. Benstead (2014a) finds that respondents in Morocco interviewed by female interviewers wearing a hijab, which serves as a signal of adherence to Islam, are more likely to have high confidence in religious leaders; are more likely to support Shari'a law; and less likely to agree that minorities should have equal rights, with effects being more pronounced for religious respondents. Blaydes and Gillum (2013) provide evidence that Muslim women report to be more religious, and provide less frequent reports of forced sex when interviewed by an enumerator wearing a hijab. Yet, both studies only involve self-reported answers to survey questions. With the quasi-experiment we complement these studies and investigate whether gender and perceived religiosity of the enumerators (the latter proxied by women wearing a hijab) affect implicit *and* explicit attitudes.

By analyzing whether implicit attitudes not only differ in response to short treatments, but also in response to who is conducting the treatment and (or) survey, we challenge the common assumption that implicit attitudes reflect highly stable mental representations stemming from long-term socialization processes (Wilson, Lindsay, and Schooler 2000; Petty et al. 2006). Instead, our results support limited but emerging evidence on the malleability of implicit attitudes in response to targeted interventions. Our results are as follows. We find that short primes in the form of a randomized video treatment reduce the implicit gender bias (IAT score) among women that have the most conservative, explicit attitudes, towards gender parity. We believe that explicit attitudes may be more reflective of social norms rather than true individual beliefs, hence the video treatment may have had more informational value for these women that operate in social networks characterized by traditional gender norms vis-à-vis women surrounded by progressive network members.

Our quasi-experiment on interviewer effects shows that female interviewers trigger more conservative responses to the IAT, but only among men. We find no significant effect for women, but if anything, the coefficient for the IAT variable is negative, suggesting the bias is reduced. Perhaps having a female interviewer works as an unintended prime, as this may

arguably reflect a counter stereotypical or, in an extreme case, a provocative image of women, affecting men more than women.

Perceived religiosity of the female interviewer does not affect implicit attitudes – it does, however, invite more conservative responses among self-reported gender attitudes, with the effect being stronger for the rather sensitive topic of domestic violence. Taken together, these latter two findings are consistent with an interpretation of social desirability at work when using self-reported survey questions for sensitive issues.

The remainder of the paper is structured as follows. In Section II we introduce the IAT developed and used in this study. In Section III we present the study context and how we conducted the IAT. This section also describes the randomization and implementation of the video treatment, how we measured explicit attitudes in addition to implicit ones, and how we assessed interviewer effects. In Section IV we lay out our empirical strategy. Section V presents our results and Section VI ends with a brief discussion and a conclusion.

II. An IAT on Women Empowerment

IATs are widely used to measure implicit attitudinal strengths or concept preferences. Respondents sit in front of a computer screen and only use three keys on a keyboard ('E', 'I' and the spacebar). Participants go through a sequence of tasks, each called a 'block'. During each block the respondent is asked to correctly categorize a series of target and attribute stimuli as fast as possible. Respondents see words appearing one by one on the screen and press the appropriate key; 'E' if the word belongs to the category on the left side of the screen and 'I' if it belongs to the category on the right side of the screen.

[Place Table 1 here]

As indicated in Table 1, the target stimuli in our IAT were popular Arab Tunisian male and female names. We selected these names after careful consideration with our local partners as we wanted to ensure that (i) names were common enough to be immediately recognized as male or female, (ii) were not tied to a specific group or social class, and (iii) had no connotations with specific events or attributes. Attribute stimuli were Arab words associated with 'dependence' or 'independence' to operationalize the concept of empowerment. The selection of attributes similar to the selection of names resulted from elaborate discussions with our local partners and pre-tests to ensure attributes were related either to the concept of (women) empowerment or its antonym, known in the Arab language and commonly understood by everyone.ⁱ

Respondents first practiced categorizing female and male names, followed by another practice block where they categorized words associated with dependence and independence. After two blocks of practice rounds respondents were then presented with the double categorization task. In the stereotypical setting 'female names' and 'dependence' shared the same response key, whereas in the counter stereotypical block 'female names' and 'independence' belonged to the same key. All respondents completed seven blocks (see Table A1 in the Online Appendix, which presents the sequence of trial blocks), with the first two blocks practicing single cues, block three presented a practice block with the stereotypical cues on each side, and block four was the same as block three, but the actual test block. Block five, six and seven repeated the steps in the first three blocks, now with the counter stereotypical cues on each side. In each block, there is only one single correct response; for example, the name

‘Sarah’ has to be categorized under ‘female name’, the word ‘follower’ has to be classified under ‘dependence’. The basic premise of an IAT is that pairing concepts, for example ‘Sarah’ and ‘leader’ is easier (faster) if a respondent associates these concepts more strongly than others, such as ‘Sarah’ and ‘follower’.

III. Study Context and Implementation of the IAT

A. A Representative Survey

In October and November 2017, we conducted a nationwide representative socio-economic survey among 1,000 households in Tunisia as part of a larger research project with the purpose to take stock of levels of women empowerment across the country.ⁱⁱ Households were selected based on a stratified random sampling method, with stratification at the highest (governorate), medium (delegations), and lowest administrative unit (sectors). We selected 115 sectors, of which 48 were rural and the remaining 67 urban. Per sector we selected ten households, whereas within each household we interviewed up to four adult individuals (older than 18 years of age) per household. We obtained written informed consent from each survey participant. For this particular paper we use a subsample of the survey consisting of 460 observations. The survey covers sets of standard demographic and socio-economic questions in addition to an extensive number of modules related to dimensions of women empowerment, including self-reported attitudes towards gender parity and domestic violence. We use these data to explore balance in our treatment and control groups, increase the precision of our estimates in a regression framework, and assess impact heterogeneity.

B. A Randomized Video Priming Treatment

We used a two-minute video to assess the extent to which implicit attitudes are malleable at least in the short run. The original video was developed by Jeune Afrique, a French-language pan-African weekly news magazine, for ‘13 August Tunisia Women’s Day’.ⁱⁱⁱ The video features all legal achievements on women rights in Tunisia starting from 1956, with the *Code du Statut Personnel* established by Habib Bourghiba.^{iv} The video has three interrelated goals: first it is intended to serve as providing information about women’s legal rights. Even though every Tunisian citizen may be expected to know their rights, this is by no means guaranteed. Especially in areas where strong traditional norms prevail, people may be less aware of actual laws safeguarding women’s legal rights. Second, the video can be seen as a form of weakening gender stereotypes (Dasgupta and Greenwald 2001). The video shows women across Tunisian society protesting and speaking in public to demand equal rights to men; these women are against a background of banners with highlighted achievements thus far, including the abolishment of polygamy and repudiation of women, contraceptive and abortion rights, gender equality in the constitution as well as legal measures to protect women from violence and rape. Third, the video may be interpreted as a means to weaken gender bias by priming a specific goal. The video provided information using subtitles in French, to which we added a female voice-over in Tunisian Arabic transmitting the same facts.

Within each sector, a random selection of five households was allocated to the video priming experiment. The other five households per sector were selected to participate in a different survey experiment and are hence not part of this study. Of the five households we selected for this study, two or three of them would see the two-minute video by Jeune Afrique (treatment group), whereas the other two or three would see an equally long, but neutral ‘placebo’ video on Tunisia’s UNESCO World Heritage Sites (control group). The placebo video was comparable to the treatment video in terms of length, female voice-over in Tunisian Arabic,

informational banners appearing on-screen in French language, and music. Video selection was randomized at the household level and not the individual level in order to avoid confusion among respondents and enumerators (Duflo, Glennerster, and Kremer 2007; Glennerster and Takavarasha 2013). The randomized video experiment and IAT were always conducted after the main survey was completed.

C. Implementation of the IAT

To conduct the IAT, we decided to have all words appear on-screen requiring respondents to be sufficiently proficient in reading Arabic. We decided against using audio and visual IATs as the concept of empowerment and its antonym is difficult to capture in pictures. Indeed, pre-testing the audio and visual IATs confirmed our belief that the pictures were considered ambiguous. Our choice has some implications for the external validity of our sample as we could only include respondents that are literate. Yet, literacy rates in Tunisia in 2014 were close to 86 percent for men (World Bank n.d.) and just below 72 percent for women (World Bank n.d.), suggesting we have not compromised too much on the external validity of our sample. Also, confining the sample to literate people arguably reduces the possible problem of measuring people's capability to deal with the task at hand instead of measuring their implicit attitudes towards empowerment. We decided to follow Greenwald, Nosek and Banaji (2003) in developing an IAT with seven blocks. The number of blocks and trials is of course an arbitrary choice, but the literature suggests that IAT measures are relatively robust to procedural variations such as the number of trials, the number of examples per concept and the time interval between trials (Greenwald et al. 2009).

The IAT was programmed in Tunisian Arabic using Inquisit 5.0 software. We did not counterbalance the order of categorization rules; in order to avoid suspicion, we required all respondents within the same household to do exactly the same test. Also, we did not a priori know the number of members within a single household who would take the test and hence, we could have ended up with very uneven distributions of two different versions if we had counterbalanced the order per sampled household. Also, the number of observations within each of the two subgroups would have been relatively small (see also Nosek, Greenwald, and Banaji 2005 showing that extensive practice trials reduce potential order effects).

The IAT was administered to both experimental groups immediately after the videos. Each household member would first watch the video by him- or herself and take the test individually – no one was allowed to ask for help among any of the other household members. Questions for clarifications were addressed to the enumerator. We measured reaction time in milliseconds and calculated implicit attitudes from an IAT D-score, a statistic with a range of -2.00 to 2.00 (Greenwald, Nosek, and Banaji 2003). IAT D-scores are calculated by dividing the difference in reaction time for two pairings by the standard deviation of all reaction times across conditions. Hence, the score has the character of a standardized effect size measure. Absolute values below 0.2 can be considered as small effects, between 0.2 and 0.5 as medium effects, and larger than 0.5 as large effects (Cohen 1977). Negative IAT D-scores signal that people more easily pair “independent” with “women” and “dependent” with “men”, whereas positive IAT D-scores signal people find it easier to pair “independent” and “men” and “dependent” and “women”.

D. Explicit Attitudes towards Women Empowerment

As we also want to contrast implicit with explicit attitudes, we constructed a measure of explicit attitudes by relying on two sets of responses to statements related to (i) gender parity

and (ii) domestic violence. In our survey preceding the video treatment, respondents were requested to indicate their (dis)agreement to each statement on a five-point Likert scale. Specifically, each respondent was asked the following seven questions related to attitudes towards gender equality:

- *A man should have the final word about important decisions in the home.*
- *Men should decide whether a woman can work outside the house.*
- *Jobs should rather be given to men than to women.*
- *Men should take the decision with respect to a woman's education.*
- *Men should decide where a woman can go to and when.*
- *Doing the cooking, cleaning and washing are a woman's responsibility.*
- *A young woman should obey her brother(s).*

Each statement relates to female decision-making power in different domains; the first statement is a fairly straightforward measure for attitudes towards decision-making in the household. The remaining items relate to attitudes towards decisions on women's occupation and employment opportunities, education, mobility and time use. These dimensions directly affect the daily life of women and are core dimensions in other empowerment surveys (see for example Alkire et al. 2013), where women are considered empowered if they can take control over and make their own decisions related to these aspects. The last item related to obedience towards brothers is particular to more conservative communities where women are not only expected to be subordinate to the male primary decision-maker, but also to younger and next-in-line male members of the family.

Another correlate to female empowerment is domestic violence. Actual domestic violence against women is a very direct and substantial threat to women's empowerment. However, even if women are just exposed to the menace of violence or perceive that the violence against women is justified in certain cases, it can be assumed that this represents a serious threat to their empowerment. The following six questions were the statements related to domestic violence:^v

It is justified that a man hits or beats his wife...

- *if she goes out without telling him.*
- *if she neglects the children.*
- *if she argues with him.*
- *if she buys things without his consent.*
- *if she applies for a new job or engages in a new livelihood without his consent.*
- *if she files a complaint against him to a higher authority or the police.*

For the analysis of explicit attitudes, we construct measures to summarize the statements on gender parity and domestic violence. First, we transform the answer category from a five-point Likert scale to a binary choice consisting of 'not disagreeing' with a specific statement where 'not disagreeing' means respondents either answered they 'strongly agree', they 'somewhat agree' or they 'neither agree, nor disagree'. The corresponding opposite category consists of 'disagreeing' where the respondents answered either 'somewhat disagree' or 'strongly disagree'. For both the gender parity and the domestic violence module we then calculate the number of statements that a respondent does 'not disagree' with. For the interpretation we believe that 'not disagreeing' reflects a rather conservative attitude with an inclination towards gender inequality and justification for domestic violence as it is clearly

not reflective of a progressive view on women empowerment. As a consequence, a higher share of statements (either out of seven for gender parity or out of six for domestic violence) indicates higher support for gender parity and domestic violence and hence fewer progressive attitudes.^{vi}

E. Interviewer Characteristics

We argue that a video intervention may affect gender attitudes, yet we believe that more subtle cues like the personal traits of the interviewer or experimenter may play a role too. We look at two traits we deem particularly relevant for our setting: gender and perceived religiosity.

The allocation of enumerators was based on practical and organizational conditions; enumerators were typically selected from the region in which they conduct the interviews to facilitate the use of local languages and dialects when needed. The survey team consisted of six interviewer teams with one group leader and three to four interviewers. In total, 21 interviewers conducted the interviews with 11 of them being female and six of the female interviewers wearing a hijab. Although we did not formally randomly assign enumerators and thus treat it as a quasi-experiment, in practice it was nearly a random process. That is, interviewers would be assigned to houses by the group leader with none of them having any prior knowledge on people living in a particular house. Also, we never heard of interviewers being replaced after entering a respondent's house. We are therefore less concerned with self-selection issues, which is confirmed by a balance test (see Table A4 in the Online Appendix). The test only shows that individuals that are unemployed were slightly less likely to be interviewed by a woman whereas individuals with wage work or entrepreneurs are slightly more likely to be interviewed by a female enumerator. Moreover, young and married respondents are slightly more likely to be interviewed by a female enumerator wearing a hijab. We control for these imbalances in all our regressions.

IV. Empirical Strategy

We rely on the cluster randomized treatment assignment to estimate the intent-to-treat (ITT) impact of the video intervention on implicit attitudes towards women empowerment. A multivariate regression of treatment status on observable characteristics of the individuals shows that randomization was generally successful; none of the regression coefficients are statistically significant except for explicit attitudes (see Table A5 in the Online Appendix). We address the imbalance on these covariates after introducing Equation 2.

In our benchmark specification we regress the IAT score on the treatment status with and without control variables:

$$(1) Y_{ijv} = \alpha + \beta_1 T_{jv} + \beta_2 \mathbf{X}_{ijv} + \beta_3 \mathbf{Z}_{jv} + \varepsilon_{ijv},$$

where Y_{ijv} is the IAT score for individual i , in household j , and sector v . T_{jv} is an indicator variable taking the value 1 for treatment households, \mathbf{X}_{ijv} is a vector of individual control variables, and \mathbf{Z}_{jv} is a vector of household level controls, including interviewer characteristics. ε_{ijv} is the error term. The coefficient β_1 estimates the ITT impact of the video treatment using ordinary least squares (OLS). All standard errors are clustered at the household level.

We estimate Equation 1 also separately for women and men as we expect that both may react differently to the video.

To further assess impact heterogeneity, we use the constructed measures of explicit attitudes as they arguably proxy for social norms which may or may not resemble “true” individual beliefs. We augment Equation 1 by including a vector of two categorical variables that each refer to different categories of self-reported explicit attitudes for gender parity and domestic violence, respectively, and their interaction with the treatment indicator variable:

$$(2) Y_{ijv} = \alpha + \beta_1 A_{ijv} + \beta_2 T_{jv} + \beta_3 A_{ijv} \times T_{jv} + \beta_4 X_{ijv} + \beta_5 Z_{jv} + \varepsilon_{ijv},$$

where A_{ijv} is the vector of a categorical variable indicating the attitude towards (i) gender parity and (ii) domestic violence of individual i , in household j , and sector v . The categories consist of the number of statements a respondent is “not disagreeing” with, where a low category (“not disagreeing” with zero statements) indicates progressive and a high category (“not disagreeing” with all seven/six statements) represents conservative norms.

Although our video treatment was randomly allocated, there is some imbalance of treatment allocation with respect to self-reported explicit attitudes (see Table A5 in the Online Appendix). To estimate impact heterogeneity with respect to explicit attitudes, we hence apply a special variant of matching based on propensity score weighted regressions as proposed by Hirano and Imbens (2001) and Hirano, Imbens and Ridder (2003). The basic idea here is to combine a propensity score approach with an OLS regression-based specification. The “matching estimation” gives the propensity scores that are used to create weights for the subsequent OLS regression in order to increase comparability between the assessed groups across observable characteristics of the individuals, including interviewer characteristics and explicit attitudes. In other words, control group observations are individually reweighted, so that they jointly become similar to the treatment group, particularly with respect to explicit attitudes. More precisely, we determine two propensity scores for men and women separately; one with covariates and gender parity attitudes and the other with covariates and domestic violence attitudes. These propensity scores then enter a weight that is applied to the OLS regression. To attain the treatment effect, this individual weight can be computed as outlined in Brunell and DiNardo (2004) for both treatment and control observations i , denominated μ_i^T and μ_i^C respectively:

$$(3) \mu_i^T = 1 \quad \text{and} \quad \mu_i^C = [(\Pr(T=1/X)) / (1 - (\Pr(T=1/X)))] \times (p^C / p^T)$$

where \Pr stands for probability, the vector X for the covariates (including explicit attitudes), p^T for the fraction of treatment observations, and p^C refers to the fraction of control observations.

Our final set of regressions identifies the effect of interviewer characteristics on our outcomes of interest. We extend Equation 1 using different dependent variables, which consist of (i) the IAT D-score:

$$(4) Y_{ijv} = \alpha + \beta_1 W_{ijv} + \beta_2 I_{jv} + \beta_3 W_{ijv} \times I_{jv} + \beta_4 X_{ijv} + \beta_5 Z_{jv} + \varepsilon_{ijv},$$

where W_{ijv} is an indicator variable taking the value 1 if the individual i , in household j , and sector v is a woman. I_{jv} is an indicator variable representing the respective interviewer characteristics; it takes on the value 1 if the enumerator interviewing household j in sector v is female or if the interviewer is female wearing a hijab. Moreover, we extend Equation 1 by also using (ii) the share of gender parity statements “not disagreeing” with and (iii) the share of domestic violence statements “not disagreeing” with:

$$(5) A_{ijv} = \alpha + \beta_1 W_{ijv} + \beta_2 I_{jv} + \beta_3 W_{ijv} \times I_{jv} + \beta_4 X_{ijv} + \beta_5 Z_{jv} + \varepsilon_{ijv},$$

with A_{ijv} now indicating the respective share of statements “not disagreeing” with. In order to analyse heterogeneous effects for men and women, we always include an interaction term of respondent gender and the respective interviewer characteristic.

V. Results

A. Descriptive Statistics

We first present the distribution of the overall IAT D-scores with a histogram in fractions and a normal density function for comparison.

[Place Figure 1 here]

Figure 1 shows the distribution of the IAT D-score of our Tunisian sample, and for comparison a normal distribution function. The mean score is 0.03 indicating that on average there is a slight tendency to associate women with dependency and men with independence. Yet, there is substantial variation in outcomes where a non-negligible group (about 15 percent of our sample) has scores between 0.5 and 1, demonstrating severely biased gender attitudes. At the same time, we observe some 9 percent of our sample having very progressive gender attitudes, supporting the notion of a deep political and cultural divide in Tunisian society.

Table 2 shows the descriptive statistics for the explicit attitude measures for the male and female subsamples.

[Place Table 2 here]

The support for gender inequality is high for both men and women, although more pronounced for the male subsample, and reflects traditional social norms that still prevail in the Tunisian society. For both men and women proportions are highest on “obedience to brothers” followed by the first item on male decision-making in the household and are lowest on the decision with respect to a woman’s education. Self-reported attitudes towards domestic violence are less pronounced, although almost 30 percent of men in our sample agree with the statement that a man can beat his wife if she neglects the children. The remaining shares “not disagreeing” on the other statements range from 21 to 25 percent. As with gender parity we also observe women on average to have a more progressive view on all items than men. To illustrate the overall distribution, Figure 2 presents the fraction of respondents “not disagreeing” with zero to seven (gender parity) or zero to six (domestic violence) statements.

[Place Figure 2 here]

The final set of summary statistics comprises the set of all control variables (see Table 3) we use in our regression models to control for some of the imbalances and improve the precision of our estimates.

[Place Table 3 here]

B. Impact of the Video Treatment

Our main hypothesis is that the video treatment may affect implicit attitudes towards women empowerment. Figure 3 presents the distributions of the IAT outcomes with kernel density plots for both treatment and control groups, and for men and women separately.

[Place Figure 3 here]

The solid grey line represents outcomes for the treatment group and the dashed grey line represents the control group. The p-value of a Hartigan dip test for unimodality is 0.997 for the treatment group and 0.991 for the control group, which implies that the treatment does not generate any change in the unimodal distribution of implicit attitudes. Moreover, a two-sided Wilcoxon rank-sum test cannot reject the null hypothesis that treatment and control observations have the same distribution ($p=0.866$) implying that the video treatment does not provoke an average location shift of the IAT D-score distribution, neither up- nor downwards. Results however become slightly more pronounced when looking at the subgroups. Part B in Figure 3 presents the distribution for the subsample of men, where we also do not see much difference between the two groups. If anything, the treatment group tends to display slightly more conservative attitudes. By contrast, the picture for our subsample of women is somewhat different. Our treatment reduces extreme attitudes; the variance is smaller than that in the control group and the peak of the distribution centers around zero, indicating neutral or moderate attitudes.

Next, we estimate outcomes in a multivariate regression framework. Table 4 presents the results of regressing the IAT D-score on a treatment dummy, including a relevant set of control variables (see Equation 1). The results confirm that the video treatment does not reveal a strong average treatment effect; neither for the male, nor the female subsample.

[Place Table 4 here]

However, given the strong political and religious divide in present-day Tunisia we may expect certain groups in society to react differently to the video. We therefore investigate in Table 5 whether implicit responses to the treatment covary with explicit self-reported attitudes. Although there does not seem to be a clear pattern for men, we do observe considerable “action” for the subsample of women. First, there is a positive correlation between explicit and implicit attitudes, regardless of treatment. That is, women that do not disagree with up to seven or six statements, indicating more conservative attitudes, have higher IAT scores and hence are more biased against women. Second, particularly women with conservative explicit attitudes on gender parity respond to the treatment; treated conservative women are more likely to associate women with independence than untreated conservative women. The video thus triggers, at least in the short run, more easily associations between women and leadership, decision-making and power, and particularly so for women that have (and are plausibly surrounded by) more conservative norms. There is however no such effect for domestic violence.

[Place Table 5 here]

C. Gender and perceived religiosity of the interviewer on implicit and explicit attitudes

To examine the possible role of interviewer effects we make use of a quasi-experimental set-up; out of 21 enumerators 11 were female with about half of them wearing a hijab. Enumerators were typically selected from the region in order to facilitate logistics and to enable the use of local languages and dialects if needed. We were hence unable to a priori randomly allocate enumerators to households. Yet, because enumerators had no idea of who was living in a household before entering and there were no reports of enumerators being replaced the allocation was essentially random and should be unrelated to our outcomes of interest.

[Place Table 6 here]

Panel A of Table 6 presents the results of the effects of interviewer gender and perceived religiosity on implicit attitudes. Columns 1 and 2 present the interviewer gender effects and Columns 3 and 4 present the perceived religiosity effect for respondents interviewed by the female enumerators. We find robust effects that female interviewers reinforce conservative attitudes towards women empowerment; the IAT D-score increases on average by 0.14 to 0.15 points. Respondents may see female interviewers as a threat, which might reinforce negative attitudes towards empowerment when interviewed by a female enumerator. This effect is driven by our male subsample testified by the negative interaction between female interviewer and female respondent. Lastly, wearing a hijab does not seem to reinforce an implicit gender bias.

Panel B and C in Table 6 present results with explicit attitudes as our dependent variable. We use the share of statements that a respondent is “not disagreeing” with as the dependent variable; the variable ranges between 0 (“not disagreeing” with none of the statements) and 1 (“not disagreeing” with all seven or six statements). Hence, a positive coefficient would indicate more conservative attitudes on gender parity and domestic violence, respectively.

In Panel B we find explicit attitudes on gender parity not to be sensitive to interviewer gender effects. When it comes to perceived religiosity, we find that an enumerator wearing a hijab induces more conservative responses, although this is not robust to adding covariates. For attitudes towards domestic violence (Panel C) we find interviewer gender effects; female interviewers on average invite more conservative responses, and more interestingly, there is a strong positive association between perceived religiosity and self-reported attitudes. This latter result suggests that respondents increasingly align their answers with perceived norms of the interviewer if topics become more sensitive (which is arguably the case here, as we expect the topic of gender parity to be less sensitive than that of domestic violence). Taken together with the absence of such an effect for the IAT scores we interpret this as suggestive evidence of social desirability issues at work when using self-reported measures.

VI. Discussion and Conclusions

This study provides new evidence on the malleability of implicit attitudes towards sensitive topics using an Implicit Association Test in a developmental field setting. We find that short

primes have little average effects on Tunisian citizens, but reduce gender biased attitudes for specific subgroups, especially for conservative women as measured by their explicit attitudes. The video which shows real-life gender reforms affecting Tunisian society may have induced a change in the mindset of women in the treatment group. Due to the fact that particularly those with conservative explicit attitudes towards gender parity have slightly more progressive implicit attitudes after seeing the video, we can think of two potential channels consistent with these results. First, there could be an information effect. Although progressive laws are in place in Tunisia, they are not necessarily known to all, possibly due to homophily effects in social networks (McPherson, Smith-Lovin, and Cook 2001). Second, the video may change attitudes by weakening gender stereotypes, and women featuring in that video may serve as role models of some kind that help set progressive goals for the individual respondent. Thus, contrary to the widespread assumption that implicit attitudes tap into past experiences that are relatively resistant to change (Bargh 1999; Petty et al. 2006), we find them to be malleable to short treatment interventions as in Dasgupta (2013); Lai et al. (2014) and Gawronski et al. (2017). Future studies should investigate the effect of repeatedly exposing individuals to such treatments (or similar situations) or for a longer time and assess whether and how a change in attitudes maps onto actual behavioral change.

In light of recent evidence reviewed by Di Maio and Fiala (2018) and Chapman, Benedict and Schiöth (2018), we also test for interviewer effects for two arguably significant characteristics of the interviewer: gender and perceived religiosity (interviewers wearing a hijab). As we could not randomize these two aspects across treatment conditions and respondents, this takes the form of a quasi-experiment where we argue that enumerator selection on the basis of only logistical and practical considerations is unlikely to systematically correlate with our variables of interest. We find that the gender of the interviewer affects overall responses to both our explicit and implicit attitude measures, with effects being slightly more pronounced for the latter. Female interviewers tend to invite more conservative responses from men, whereas they mitigate gender-biased responses from women. This is not inconsistent with earlier studies that report that men tend to react stronger towards provocation (Borden 1975; Hyde 2014). We also find that wearing a hijab (or conversely not wearing a hijab) invites more conservative (progressive) responses, but only for explicit attitudes. This suggests that self-reported survey questions on sensitive topics like domestic violence are prone to social desirability bias, which means that respondents align their answers with perceived norms of the interviewer, consistent with evidence reported by Blaydes and Gillum (2013) and Benstead (2014a).

Our design only allows us to measure impacts immediately after the priming intervention, so we do not know whether results sustain in the long run. Yet, it is not inconceivable that such interventions coupled with policies and awareness may have the power to change attitudes and behavior in the long run and thereby reduce discriminatory intentions and actions that produce structural gender inequalities. Recent evidence by Charlesworth et al. (2019) shows that long-term implicit attitudes with respect to sexuality, race and skin tones have all moved towards decreasing prejudice in just over a decade (2007-16). Gender equality may be next.

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Table 1

IAT Stimuli

Target stimuli		Attribute stimuli	
Female name	Male name	Dependent	Independent
Saida	Mehdi	Weak	Strong
Nour	Walid	Obedient	Lead
Sarah	Nizar	Follower	Decide
Hela	Karim	Incapable	Influence
Sonia	Sami	Submission	Capable
Mariam	Khaled	Oppressed	Succeed

Table 2

Explicit Attitudes towards Gender Parity and Domestic Violence

	Share "not disagreeing"	
	Men	Women
Gender parity		
A man should have the final word about important decisions in the home.	0.766	0.670
Men should decide whether a woman can work outside the house.	0.617	0.541
Jobs should rather be given to men than to women.	0.752	0.600
Men should take the decision with respect to a woman's education.	0.593	0.492
Men should decide where a woman can go to and when.	0.706	0.492
Doing the cooking, cleaning and washing are a woman's responsibility.	0.678	0.622
A young woman should obey her brother(s).	0.794	0.730
Domestic violence:		
It is justified that a man hits or beats his wife ...		
... if she goes out without telling him?	0.224	0.227
... if she neglects the children?	0.299	0.265
... if she argues with him?	0.252	0.205
... if she buys things without his consent?	0.206	0.162
... if she applies for a new job/engages in a new livelihood without consent?	0.210	0.184
... if she files a complaint against him to the police?	0.243	0.211
N	214	185

Notes: "Not disagreeing" = [strongly agree | somewhat agree | neither agree or disagree] vs. "disagreeing" [somewhat disagree | strongly disagree].

Table 3

Descriptive Statistics for Control Variables

	Full sample	Mean	
		Men	Women
Woman (=1)	0.463		
Age (years)	37.5	38.1	36.8
Married (=1)	0.563	0.518	0.615
No education (=1)	0.028	0.016	0.042
Primary education (=1)	0.315	0.320	0.310
Secondary education (=1)	0.439	0.478	0.394
Tertiary or higher education (=1)	0.217	0.186	0.254
Unemployed (=1)	0.209	0.235	0.178
Student/inactive (=1)	0.459	0.320	0.620
Wage worker (=1)	0.326	0.421	0.216
Entrepreneur (=1)	0.111	0.170	0.042
Migrant, any country (=1)	0.057	0.081	0.028
Migrant, EU/North America (=1)	0.026	0.036	0.014
Rural area (=1)	0.387	0.401	0.371
Coastal governorate (=1)	0.543	0.538	0.549
N	460	247	213

Notes: The employment status refers to 12 months before the survey; an individual can possibly have had various employment statuses within that period and hence, numbers do not necessarily add up to 100 percent. An individual is labeled a migrant when he or she has lived abroad for more than six months. Apart from rural vs. urban areas, we also look whether the individual is located in a coastal vs. non-coastal governorate. The relatively prosperous flat coastal zone is perceived to have a less conservative mindset than departments located in the poorer remote non-coastal zone of Tunisia.

Table 4

Impact of Video Treatment on IAT D-Scores for the Overall Sample and by Gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Full sample		Men		Women	
Video treatment	-0.026 (0.041)	-0.014 (0.046)	0.006 (0.056)	-0.010 (0.062)	-0.061 (0.058)	-0.018 (0.072)
Controls	NO	YES	NO	YES	NO	YES
N	460	399	247	214	213	185
Adjusted R-squared	-0.001	0.002	-0.004	0.033	0.001	-0.063

Notes: OLS estimates with robust clustered standard errors in parentheses; standard errors are clustered at HH-level. Further controls include gender, age category (18-30 years), marital status, level of education, occupational status in past 12 months, migration status (to EU or North American country), location of HH (rural, governorate on coast), interviewer characteristics (gender and perceived religiosity) and explicit attitude measures (towards gender parity and domestic violence). *** indicates significance at 1%, ** at 5%, and * at 10%.

Table 5

Impact of Video Treatment on IAT D-Scores by Explicit Attitudes

	(1)	(2)	(3)	(4)
	IAT D-score: Men		IAT D-score: Women	
Gender parity				
No. statements "not disagreeing"; 0	Ref.	Ref.	Ref.	Ref.
1-6	0.092 (0.257)	0.029 (0.211)	0.207 (0.172)	0.268* (0.141)
7	-0.168 (0.262)	-0.262 (0.215)	0.306* (0.165)	0.339** (0.141)
Treatment (=1)	-0.096 (0.315)	-0.147 (0.250)	0.212 (0.170)	0.234 (0.145)
1-6 × Treatment	0.037 (0.324)	0.076 (0.268)	-0.176 (0.200)	-0.211 (0.184)
7 × Treatment	0.147 (0.331)	0.230 (0.269)	-0.336* (0.202)	-0.349* (0.184)
Constant	0.105 (0.252)	-0.258 (0.476)	-0.272* (0.151)	-0.247 (0.168)
N	214	214	185	185
Adjusted R-squared	0.025	0.036	0.006	-0.009
Domestic violence				
No. statements "not disagreeing"; 0	Ref.	Ref.	Ref.	Ref.
1-5	-0.065 (0.103)	-0.093 (0.117)	-0.003 (0.146)	-0.026 (0.146)
6	-0.106 (0.136)	-0.133 (0.139)	0.008 (0.122)	0.041 (0.125)
Treatment (=1)	-0.009 (0.094)	-0.006 (0.097)	-0.002 (0.079)	-0.002 (0.078)
1-5 × Treatment	0.030 (0.138)	0.047 (0.152)	0.025 (0.202)	0.046 (0.210)
6 × Treatment	0.103 (0.193)	0.067 (0.193)	-0.072 (0.235)	-0.098 (0.237)
Constant	0.097 (0.076)	-0.431 (0.451)	-0.048 (0.064)	-0.009 (0.143)
N	214	214	185	185
Adjusted R-squared	-0.020	-0.012	-0.026	-0.060
Controls	NO	YES	NO	YES

Notes: "Not disagreeing" with none (= 0) of the statements reflect progressive norms, whereas "not disagreeing" with all seven/six statements represents conservative norms. OLS estimates with robust clustered standard errors in parentheses; standard errors are clustered at HH-level. Further controls include age category (18-30 years), marital status, level of education, occupational status in past 12 months, migration status (to EU or North American country), location of HH (rural, governorate on coast) and interviewer characteristics (gender and perceived religiosity). *** indicates significance at 1%, ** at 5%, and * at 10%.

Table 6

Interviewer Effects on Explicit and Implicit Attitudes

	(1)	(2)	(3)	(4)
(A) IAT D-score				
Woman (=1)	-0.043 (0.070)	-0.032 (0.073)	-0.223** (0.101)	-0.186* (0.106)
Female interviewer (=1)	0.135** (0.062)	0.145** (0.064)		
Woman × fem. interviewer	-0.148* (0.086)	-0.150* (0.088)		
Interviewer with hijab (=1)			-0.046 (0.072)	-0.026 (0.070)
Woman × hijab			0.047 (0.116)	0.059 (0.119)
N	460	460	296	296
Adjusted R-squared	0.030	0.017	0.040	0.041
(B) Gender parity				
Woman (=1)	-0.107 (0.066)	-0.103* (0.061)	-0.195*** (0.070)	-0.184*** (0.068)
Female interviewer (=1)	0.086 (0.060)	0.051 (0.055)		
Woman × fem. interviewer	-0.006 (0.076)	0.022 (0.069)		
Interviewer with hijab (=1)			0.117** (0.056)	0.067 (0.054)
Woman × hijab			0.099 (0.081)	0.136* (0.075)
N	399	399	251	251
Adjusted R-squared	0.028	0.096	0.074	0.159
(C) Domestic violence				
Woman (=1)	-0.030 (0.048)	-0.023 (0.051)	-0.079* (0.044)	-0.028 (0.055)
Female interviewer (=1)	0.147*** (0.053)	0.142*** (0.050)		
Woman × fem. interviewer	-0.007 (0.063)	0.016 (0.062)		
Interviewer with hijab (=1)			0.244*** (0.060)	0.243*** (0.063)
Woman × hijab			0.033 (0.069)	0.052 (0.070)
N	399	399	251	251
Adjusted R-squared	0.031	0.037	0.084	0.095
Controls	NO	YES	NO	YES

Notes: The dependent variable for Panel A is the IAT D-score. Panel B and C have the share of statements on gender parity and domestic violence that the individual is “not disagreeing” with as the dependent variable. OLS estimates with robust clustered standard errors in parentheses; standard errors are clustered at HH-level. Further controls include age category (18-30 years), marital status, level of education, occupational status in past 12 months, migration status (to EU or North American country), location of HH (rural,

governorate on coast). In Panel A we also control for the treatment status. For Columns 1 and 2 we use the full sample, for Columns 3 and 4 we use the sample of respondents interviewed by women. *** indicates significance at 1%, ** at 5%, and * at 10%.

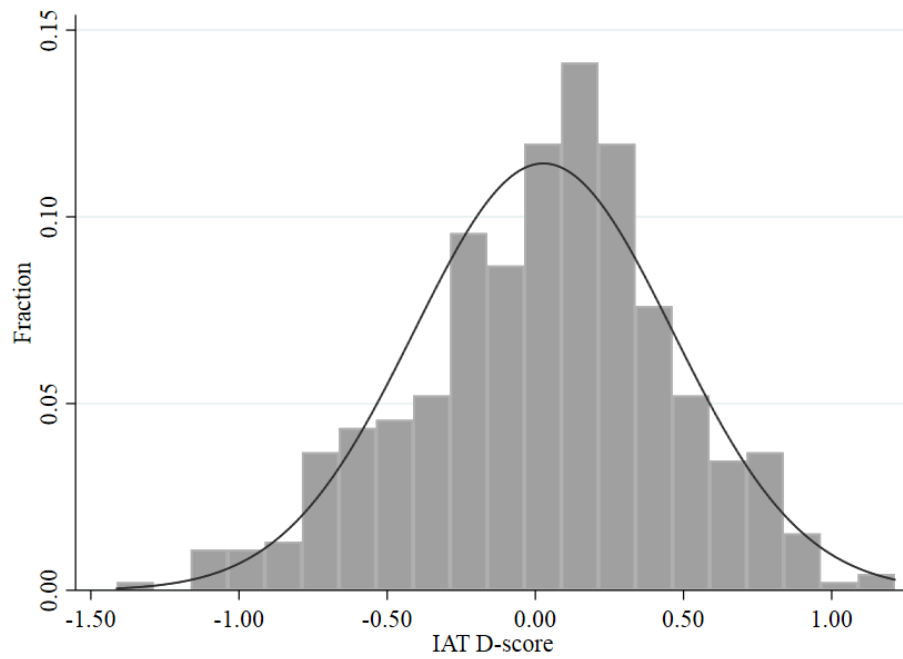
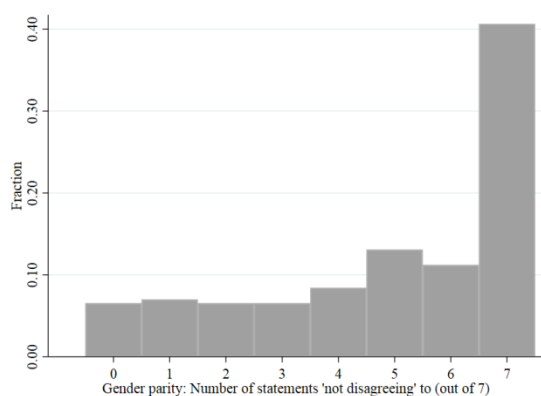


Figure 1

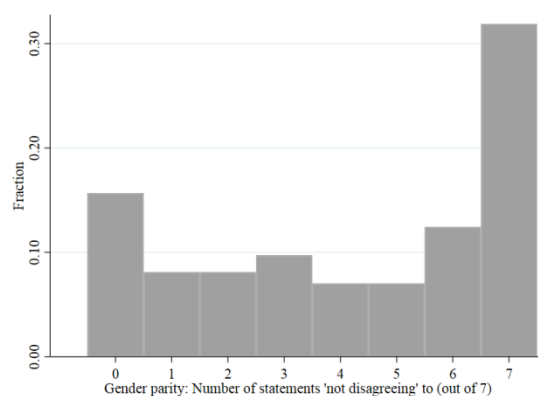
Distribution of IAT D-Scores

Notes: The mean IAT D-score is 0.027 (SD=0.437, N=460). A positive score with $\text{IAT-D} \in [0, 2]$ indicates implicit associations between dependent/women and independent/men. A negative score with $D \in [-2, 0]$ indicates implicit associations between independent/women and dependent/men.

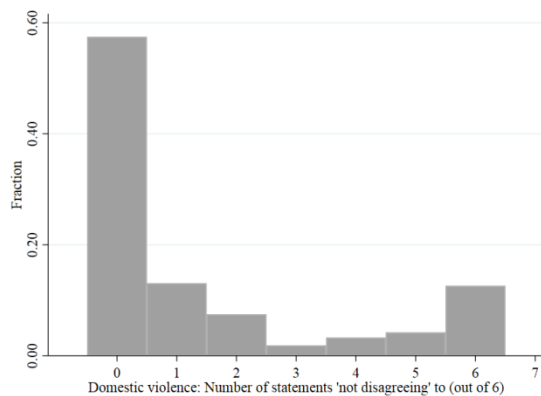
(A) Men



(B) Women



(C) Men



(D) Women

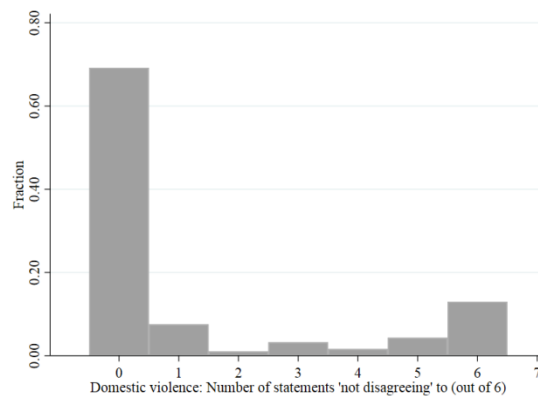
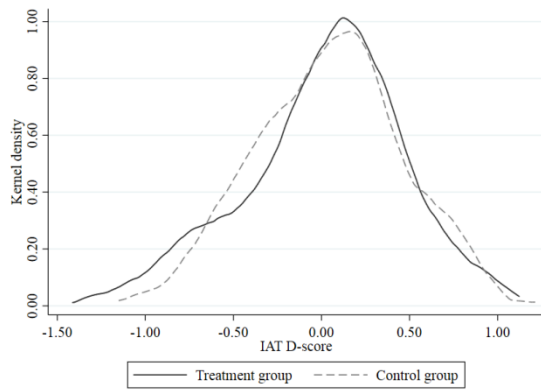


Figure 2

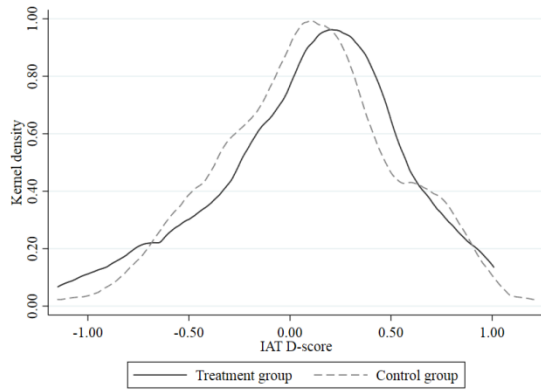
Explicit Attitude Descriptives

Notes: (A) Men: Number of statements on gender parity “not disagreeing” with (out of seven). (B) Women: Number of statements on gender parity “not disagreeing” with (out of seven). (C) Men: Number of statements on domestic violence “not disagreeing” with (out of six). (D) Women: Number of statements on domestic violence “not disagreeing” with (out of six).

(A) Full sample



(B) Men



(C) Women

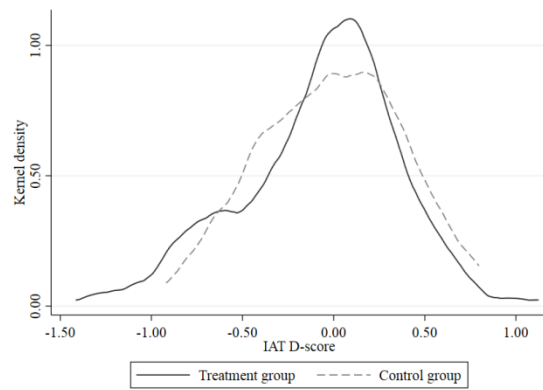


Figure 3

Impact of Video Treatment on IAT D-Scores for the Overall Sample and by Subgroup

Notes: (A) The full sample (N=460). (B) The male sample (N=247). (C) The female sample (N=213).

ⁱ Technically we are measuring gender stereotypes with this specific IAT design rather than preferences for gender empowerment. We believe these measures are related, but a taste-based IAT may conceivably have generated different results.

ⁱⁱ The results of the project are described in Ghali et al. (2018).

ⁱⁱⁱ For the original video see: <http://dai.ly/x5wnrgo>.

^{iv} Due to the fact that a near equivalent of this video was freely available on the internet there is of course a small, but non-zero possibility that people in both the treatment and control group had already seen the video. Our randomized intervention should therefore perhaps be interpreted as a randomized encouragement design.

^v These questions were taken from the Demographic and Health Surveys (DHS) (see: <https://dhsprogram.com/>) and hence have already been asked in the same way in many countries, including Tunisia. Yet, the DHS questions also include the statement “*It is justified that a man hits or beats his wife if she refuses to have sex with him*”. We decided to omit this statement after discussions with our local partners as it was judged as being too sensitive and hence carried a risk that many respondents would, at best, refuse to answer the question or, at worst, end the interview.

^{vi} We only have full information on explicit attitudes for 399 respondents. A test on whether this type of attrition is related to any of the covariates reveals that those missing information on explicit attitudes are more likely to live in a rural area (see Table A2 for a definition of the covariates and Table A3 for the test of systematic attribution in the Online Appendix). We control for this imbalance in all our regressions.

Online Appendix

for “On the Malleability of Implicit Attitudes towards Women Empowerment: Evidence from Tunisia” by E. E. M. Nillesen, M. Grimm, M. Goedhuys, A. K. Reitmann and A. Meysonnat

Table A1

Sequence of Trial Blocks in the Women Empowerment IAT

Block	No. of trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Practice	Female names	Male names
2	20	Practice	Words associated with ‘dependent’	Words associated with ‘independent’
3	20	Practice	Female names and ‘dependent’ words	Male names and ‘independent’ words
4	40	Test	Female names and ‘dependent’ words	Male names and ‘independent’ words
5	20	Practice	Male names	Female names
6	20	Practice	Male names and ‘dependent’ words	Female names and ‘independent’ words
7	40	Test	Male names and ‘dependent’ words	Female names and ‘independent’ words

Table A2

Definition of covariates

Variable	Type	Definition
Gender	Dummy	1 if female, 0 if male
Age category	Dummy	1 if aged 18-30 years, 0 if aged above 30 years
Marital status	Dummy	1 if married, 0 otherwise
Level of education	Categorical	0 if no schooling (reference category), 1 if primary education, 2 if secondary education, 3 if tertiary or higher education
Occupational status	Dummy	1 if entrepreneur or wage worker in past 12 months, 0 otherwise (inactive, unemployed or student)
Migration status	Dummy	1 if migrated to an EU or North American country, 0 otherwise
Area	Dummy	1 if rural, 0 if urban
Governorate	Dummy	1 if coastal, 0 if non-coastal

Table A3*Balance of Characteristics of Respondents with and without Information on Explicit Attitudes*

	(1)
	Missing information on explicit attitudes (=1)
Woman (=1)	-0.015 (0.035)
Young; 18-30 years (=1)	0.082 (0.057)
Married (=1)	0.044 (0.061)
No education (=1)	Ref.
Primary education (=1)	0.018 (0.106)
Secondary education (=1)	-0.064 (0.104)
Tertiary or higher education (=1)	-0.009 (0.102)
Unemployed (=1)	0.035 (0.050)
Wage worker or entrepreneur (=1)	-0.030 (0.037)
Migrant, EU/North America (=1)	0.053 (0.118)
Rural area (=1)	-0.099*** (0.035)
Coastal governorate (=1)	-0.056 (0.039)
IAT D-score	0.024 (0.033)
Constant	0.173 (0.119)
N	460
Adjusted R-squared	0.020

Notes: The supplementary table provides the results of a multivariate regression of “having missing information on explicit attitudes” on observable characteristics of the individuals. Robust standard errors in parentheses; standard errors clustered at HH-level. *** indicates significance at 1%, ** at 5%, and * at 10%.

Table A4*Interviewer Balance Test*

	(1)	(2)
	Female interviewer (=1)	Female interviewer with hijab (=1)
Woman (=1)	0.057 (0.043)	0.033 (0.055)
Young; 18-30 years (=1)	0.074 (0.074)	0.139* (0.080)
Married (=1)	0.085 (0.079)	0.264*** (0.092)
No education (=1)	Ref.	Ref.
Primary education (=1)	0.126 (0.165)	0.035 (0.148)
Secondary education (=1)	-0.001 (0.165)	0.023 (0.155)
Tertiary or higher education (=1)	-0.001 (0.166)	-0.104 (0.160)
Unemployed (=1)	-0.168*** (0.061)	-0.236*** (0.084)
Wage worker or entrepreneur (=1)	0.144*** (0.050)	-0.031 (0.054)
Migrant, EU/North America (=1)	0.101 (0.124)	0.002 (0.169)
Rural area (=1)	-0.024 (0.059)	-0.013 (0.070)
Coastal governorate (=1)	-0.030 (0.058)	-0.125* (0.067)
Treatment (=1)	-0.041 (0.059)	-0.049 (0.066)
Constant	0.517*** (0.191)	0.621*** (0.187)
N	460	296
Adjusted R-squared	0.054	0.077

Notes: The supplementary table provides the results of a multivariate regression of interviewer characteristics (gender and perceived religiosity) on observable characteristics of the interviewed individuals. Robust standard errors in parentheses; standard errors clustered at HH-level. *** indicates significance at 1%, ** at 5%, and * at 10%.

Table A5*Video Treatment Balance Test*

	(1)
	Treatment (=1)
Woman (=1)	-0.069 (0.054)
Young; 18-30 years (=1)	0.054 (0.088)
Married (=1)	0.141 (0.095)
No education (=1)	Ref.
Primary education (=1)	-0.065 (0.150)
Secondary education (=1)	-0.062 (0.154)
Tertiary or higher education (=1)	-0.054 (0.157)
Unemployed (=1)	-0.018 (0.070)
Wage worker or entrepreneur (=1)	-0.066 (0.058)
Migrant, EU/North America (=1)	-0.152 (0.185)
Rural area (=1)	-0.028 (0.070)
Coastal governorate (=1)	-0.034 (0.070)
Gender parity (No. statements "not disagreeing"); 0	Ref.
1-6	-0.158* (0.094)
7	-0.231** (0.106)
Domestic violence (No. statements "not disagreeing"); 0	Ref.
1-5	-0.063 (0.070)
6	-0.141 (0.105)
Constant	0.817*** (0.206)
N	399
Adjusted R-squared	0.012

Notes: The supplementary table provides the results of a multivariate regression of treatment status on observable characteristics of the individuals. Robust standard errors in parentheses; standard errors clustered at HH-level. *** indicates significance at 1%, ** at 5%, and * at 10%.