

Research papers

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Measuring
social norms
towards
women and
work in Tunisia

An assessment
of the ‘opinion-
matching’
method

DECEMBER 2023
No. 304

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Measuring social norms towards women and work in Tunisia

An assessment of the 'opinion-matching' method

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Abstract

The presence of patriarchal social norms and traditional gender roles is a potential explanation for persistent inequalities in labor market opportunities for women in the MENA region. We investigate this nexus with evidence from a survey experiment conducted among youth residing in disadvantaged neighborhoods across Tunisia – a context where young women face particularly strong barriers to joining the labor force. More precisely, we apply and assess the 'opinion-matching' method that relies on second-order beliefs to proxy for social norms. We test whether first-order beliefs are subject to social desirability bias and we investigate the effect of incentivizing second-order beliefs. We find that personal beliefs may suffer from social desirability bias or experimenter demand effects when elicited directly as opposed to indirectly through a list experiment. Moreover, we do find small, but significant differences in stated perceived social norms when prompted with financial incentives. Our findings have implications for the conclusion of whether pluralistic ignorance is an issue; we conclude that young Tunisians have a quite accurate picture of social norms held by their peers towards women working outside their home.

Social norms, besides structural barriers, should be made more progressive for women to work outside the home.

Keywords

Survey experiment, social norms, female labor force participation, opinion-matching method, measurement

Acknowledgements

We thank the Center of Arab Women for Training and Research (CAWTAR) based in Tunisia for valuable comments on the study design. The authors also thank Samy Kallel, Director General of BJKA Consulting, and his team for the professional implementation of the survey.

JEL Classification

A13, C83, C99, D91, O12, Z13

Original version

English

Accepted

July 2023

Résumé

La présence de normes sociales patriarcales et de rôles de genre traditionnels est une des explications potentielles des inégalités persistantes dans le marché du travail pour les femmes de la région MENA. Nous analysons ce lien à l'aide de données issues d'une enquête expérimentale menée auprès de jeunes de quartiers défavorisés en Tunisie - un contexte dans lequel les jeunes femmes sont confrontées à des obstacles particulièrement importants pour accéder au marché du travail. Plus précisément, nous appliquons et évaluons la méthode 'd'appariement des opinions' (*opinion-matching*) qui s'appuie sur des croyances de second ordre pour identifier les normes sociales. Nous testons si les croyances de premier ordre sont sujettes à un biais de désirabilité sociale et vérifions l'effet d'une incitation sur les croyances de second ordre, du type « l'individu X croit que l'individu Z croit ». Nous constatons que les croyances personnelles peuvent souffrir d'un biais de désirabilité sociale ou d'effets de demande de l'expérimentateur lorsqu'elles sont sollicitées directement plutôt qu'indirectement par le biais de la méthode *'list experiment'*. En outre, nous constatons des différences faibles, mais significatives, dans les normes sociales perçues lorsqu'elles sont encouragées par des incitations financières.

Les résultats ont des implications sur la question de savoir si l'ignorance pluraliste est un problème. Nous en concluons que les jeunes Tunisiens ont une image assez précise des normes sociales de leurs pairs à l'égard des femmes qui travaillent en dehors de leur domicile. Outre les obstacles structurels, cet article constate que les normes sociales devraient être rendues plus progressistes pour que les femmes puissent travailler en dehors du foyer.

Mots-clés

Enquête expérimentale, normes sociales, participation des femmes au marché du travail, méthode d'appariement des opinions, mesure.

Remerciements

Nous remercions le Centre des femmes arabes pour la formation et la recherche (CAWTAR), basé en Tunisie, pour ses précieux commentaires dans la conception de l'étude. Les auteurs remercient également Samy Kallel, directeur général de BJKA Consulting, et son équipe pour la mise en œuvre professionnelle de l'enquête.

Classification JEL

A13, C83, C99, D91, O12, Z13

Version originale

Anglais

Acceptée

Juillet 2023

Introduction

Social norms shape everyday human interactions and are crucial to explaining behavior in social and economic situations. Not without reason, the concept of social norms has entered the economic discourse besides – or even as opposed to – the long-standing concepts of rationality and self-interest (Basu 2003; Bicchieri 2006; Elster 1989). In the wake of this ‘paradigm shift’ (Görges and Nosenzo 2020), social norms have been incorporated into economic models (see e.g. Becker 1974; Andreoni and Bernheim 2009; Bernheim 1994; Bénabou and Tirole 2006). And, while becoming an important element of economic theory, the empirical side has made advances towards testing the role of social norms for explaining human decision-making and cooperation behavior (see Fehr and Schurtenberger 2018 for a recent survey), exploring ways to alter norms to achieve better social outcomes (e.g. Allcott 2011; Bursztyn, González, and Yanagizawa-Drott 2020; La Ferrara, Chong, and Duryea 2012), investigating norm enforcement (e.g. Fehr and Fischbacher 2004; Fehr and Gächter 2002), or developing robust and unbiased methods to measure social norms (e.g. Bicchieri and Xiao 2009; Krupka and Weber 2013). This study focuses on assessing one of the many empirical methods to elicit social norms through survey experiments.

Social norms are shared understandings within a social group about what is considered acceptable or unacceptable behavior in a given situation (e.g. Bicchieri 2006; 2017; Fehr and Schurtenberger 2018; Sugden 1998). Following this broad definition, social norms (also called ‘injunctive norms’) are beliefs about what one ought to do – or not to do – as perceived by others. Therefore, a convenient

method to approximate social norms is by asking survey participants what they believe others – typically in the same age group, community or geographic area – believe is appropriate or inappropriate. In other words, in the survey, respondents are asked about their second-order beliefs (SOBs). These beliefs differ from ‘first-order beliefs’ (FOBs), where survey participants are asked about their own beliefs. Görges and Nosenzo (2020) describe various methods to measure SOBs. In this study, we apply and assess the proposed ‘opinion-matching’ method (Bicchieri and Xiao 2009; Bicchieri et al. 2022).

The elicitation method consists of two-steps: in step one, a first group of respondents is asked about their own first-order beliefs towards a particular issue (e.g. *Do you think it is appropriate that...?*). Subsequently, the same or a new group of respondents is asked to guess the responses of the first group (i.e. SOBs). Considering that the distinction of personal beliefs from SOBs requires some degree of cognitive effort, this second step is usually financially incentivized to get a more accurate measure of social norms as perceived by the respondent. Respondents are monetarily remunerated proportional to the accuracy of their guesses at the end of the survey (Görges and Nosenzo 2020). The elicitation of both first- and second-order beliefs within one setting, moreover allows to explore the presence of ‘pluralistic ignorance’ (Katz, Allport, and Jenness 1931). This refers to a situation where most people hold a personal opinion, but incorrectly believe that most other people hold contrary beliefs – hence, average FOBs are misaligned with the prevailing SOBs (Bursztyn, González, and Yanagizawa-Drott 2020).

The two-step procedure, including the provision of financial incentives, is argued to provide many advantages towards other methods.¹ We take a closer look at this method, by assessing the robustness of both the first and second step, which are both required to get an accurate picture of the presence of pluralistic ignorance. With regard to the first step, a crucial assumption is that respondents reveal their true beliefs without responding bias. However, FOBs may suffer from social desirability bias (DeMaio 1984) or experimenter demand effects (Zizzo 2010; De Quidt, Vesterlund, and Wilson 2019), especially when being asked about socially sensitive topics. As for the second step, little is known about whether an incentivized approach delivers different responses than with an unincentivized one (Görges and Nosenzo 2020). To summarize, we will contribute by (i) systematically evaluating the robustness of FOBs by comparing them with responses from a list experiment, which is argued to be less sensitive to responding biases (Blair, Imai, and Lyall 2014; Rosenfeld, Imai, and Shapiro 2016; Glynn 2013), and (ii) assessing potential distortions in SOBs by eliciting them with and without financial incentives.

We embed the experimental assessment of the opinion-matching method in a survey on social norms towards women and work outside the home among young Tunisians living in disadvantaged neighborhoods. Tunisia is among the most advanced Middle East and North African (MENA) countries in terms of

women rights and legislation, but persisting gender inequalities remain with respect to female labor force participation (FLFP). The labor force participation rate of the female population (aged 15 plus) amounted to only 25% in 2021 as opposed to 67% for the male population (aged 15 plus) in Tunisia (International Labour Organization 2021).² While the lack of economic opportunities as well as persisting institutional barriers (e.g. the lack of support for working women) are one side of the explanation, prevailing social norms such as traditional gender roles represent the other side. While for men, the normative role is that of the breadwinner, the normative role for women is that of the homemaker. As such, young women are expected to marry and assume domestic responsibilities, which discourages them from seeking jobs in the labor market (e.g. Assaad and Krafft 2015; Assaad, Krafft, and Selwaness 2022; Assaad, Ghazouani, and Krafft 2017; Selwaness and Krafft 2021). The FLFP becomes even lower for young women residing in disadvantaged areas of lower income or the country's interior (Moghadam 2019), because additional normative mobility restrictions keep them from going to more prosperous or metropolitan areas, where relatively more (decent) jobs are available (Assaad and Krafft 2016; Boughzala 2013). The opinion-matching method has been applied in a couple of studies assessing social norms towards women and work outside the home in similar contexts in the MENA region (Bursztyn, González, and Yanagizawa-Drott 2020; Gauri, Rahman, and Sen 2019), with evidence pointing

¹ Other methods are for example the 'beliefs survey' and the 'Krupka-Weber' method. For a comparison see Görges and Nosenzo (2020).

² As a reference, in the MENA region, female labor force participation (FLFP) amounted to only 19% in 2022, against 71% for men (International Labour Organization 2022).

towards a misperception of prevailing social norms (Bursztyn, González, and Yanagizawa-Drott 2020; Bursztyn et al. 2023). We contribute to the existing evidence with data collected in late 2021 and early 2022 among young adolescents living in disadvantaged neighborhoods across Tunisia, taking stock of perceived social norms towards FLFP and potential misperceptions. Moreover, we systematically assess the applied method, which has not been done by other studies so far.

Overall, we observe widespread personal and perceived support among adolescent Tunisians for women working outside the home. Depending on the measure, the share of respondents finding it appropriate that women work outside their home ranges from 68% to 87%. We find evidence for potentially biased FOBs when elicited directly as opposed to indirectly, i.e. using a list experiment. In our particular sample, the degree of support for women working outside their home is much lower in the list experiment group. The significant discrepancy between the directly and indirectly elicited FOBs indicates a certain level of social desirability or experimenter demand effects. Moreover, while on average,

we do not observe any difference between stated perceived social norms among the group of young Tunisians that receives financial incentives and the group that receives none, we do find a shift in reported SOBs when separating by gender. With financial incentives, the stated perceived social norms do align more between young Tunisian men and women. One important implication of our findings concerns the conclusions made from applying the opinion-matching method on the existence of pluralistic ignorance. The potential misalignment between average true personal beliefs and perceived social norms depends on which measure of FOBs to trust.

The remainder of the paper is structured as follows: in Section 1, we describe the context of FLFP and social norms in Tunisia. Section 2 explains the opinion-matching method in more detail. Section 3 presents the data, the experimental set-up as well as descriptive statistics and balance tests. Section 4 presents the results of the two-step assessments. Section 5 discusses, and concludes.

1. Female labor force participation and social norms in Tunisia

Since the revolution in 2011, Tunisia is not only considered to be the only democracy in the Arab world (e.g. Yerkes 2019), it is also among the most advanced MENA countries in terms of women rights and legislation (Chambers and Cummings 2014; Kashina 2021; Nazir 2005). With the dawn of the independence in 1956, the Republic moved away from Muslim law and introduced the Code of Personal Status (CPS). Men and women are granted equal rights before family, society and state under the CPS, essentially entitling women to marriage on their own decision, divorce, education and employment (Kashina 2021).

Since then, the country has implemented further significant changes in the constitutional, legislative and policy framework to promote gender equality. The most notable progress has been made in education. According to the Global Gender Gap Report (World Economic Forum 2021), Tunisia is close to parity in educational attainment between boys and girls. In fact, while in 2021, 77.4% of boys completed lower secondary school, the respective percentage amounted to 99.3% for girls (World Bank, n.d.). Yet, the narrowing gender gap in education has not translated into the economy, where persistent gender inequalities remain between men and women with respect to FLFP. The rate of the female population (aged 15 plus) amounted to only 25% in 2021, as opposed to 67% for the male population (aged 15 plus) in Tunisia (International Labour Organization 2021).

While there has been a steady growth rate in women's involvement in the Tunisian labor market in the past 40 years, the slow speed is surprising in the light of important legislative measures taken by Tunisian authorities to strengthen FLFP since the 1990s (Kashina 2021). This includes an amendment to Article 23 of the CPS in 1993; the phrase "a woman should obey her husband in everything as head of the family" was replaced by "a woman is obliged to contribute to the family budget if she has the financial capacity". Also, in 1996, Article 5 was added to the Labor Code initially adopted in 1966, prohibiting labor discrimination on the basis of sex, while the wording of Article 135 mentioning a special "wage for women" was removed. Equal treatment of gender was further reinforced by Law 58 passed on August 11, 2017, with, in particular, Article 19 that prohibits "economic" and "financial" discrimination against women, including wage, working conditions or career opportunities (Kashina 2021).

However, there is a big discrepancy between what is legally prescribed and what is practiced in real life (Moghadam 2019). Despite the convergence of the formal legal framework to European standards, Tunisia remains a patriarchal society where gender-based discrimination persists in public and private life (Chambers and Cummings 2014). Conservative social norms and traditional values that are often based on Islamic culture still support beliefs regarding the role of women, and inform behaviors that deviate from formal rights enshrined in the legislative framework (e.g. Chambers and Cummings 2014; Clark, Ramsbey, and Adler 1991; Diwan and Vartanova 2017; Haghghat-Sordellini 2009; Sinha 2011).

Traditionally, the Tunisian society foresees a strong gender division (Nazier and Ezzat 2022). On the one hand, the normative role of men is that of the breadwinner who provides for the family with income while assuming low responsibility within the household. On the other hand, the normative role of women is that of the homemaker who assumes full responsibility in the domestic sphere and for raising the children (Assaad, Krafft, and Selwaness 2022; Lassassi and Tansel 2020). While education can be desirable for potential returns on the marriage market, it is less desirable for economic returns. In fact, wage work is only sought temporarily prior to marriage to potentially help secure good living conditions and pass time while waiting for marriage (Selwaness and Krafft 2021). Young women are expected to marry in order to complete their transition to adulthood, also because adult roles such as independent living, socially sanctioned sexual relations and childbearing, are limited to within marriage. With marriage and becoming the homemaker adding a substantial domestic burden, women face the difficulty of reconciling family formation, domestic responsibilities and market work. Therefore, FLFP rates remain low, because women either tend to leave work at marriage or rarely engage in it at all (Assaad and Krafft 2015; Assaad, Ghazouani, and Krafft 2017; Assaad, Krafft, and Selwaness 2022; Selwaness and Krafft 2021).

Additional gender norms complicate the transition into the labor force even further. For instance, only certain types of jobs are deemed socially acceptable for women (Selwaness and Krafft 2021). This connects to the notion of “female modesty”, a value particularly adopted in conservative Islamic culture (Syed 2010). It encourages restraint and inhibition, and related emotions of fear, shame and guilt when Muslim women for instance interact with males at work. Especially in work environments that promote “masculine” characteristics such as aggression, strength and dominance, it can produce severe tensions for Muslim women to reconcile their role and what constitutes appropriate on the one hand, and organizational requirements on the other (Syed, Ali, and Winstanley 2005). The compliance to female modesty may also explain why there are only few women in leadership positions (Hamza 2016), and why women’s wages are usually lower than men’s (Chambers and Cummings 2014). Moreover, both unmarried and married women face mobility constraints that keep them from moving to where the jobs are. While married women need to stay with established family, unmarried women are expected to continue to reside in their parents’ household until marriage (Assaad and Krafft 2016). This restriction particularly impacts young women living in poorer or provincial regions, who increasingly seek (higher) education but where suitable job opportunities are not as available as in more prosperous or metropolitan areas.

Although strong advances have been made in the formal legal framework regarding equal gender rights, persisting institutional structures are further reinforcing prevailing cultural and religious norms, and traditional gender roles. One important component is the lack of proper institutional support in terms of paid maternity leave, on-site child care facilities, social security or long-term job perspectives to encourage working mothers to remain in or join the labor force. The absence of support is particularly pertinent to women from low-income families and the working-class (Moghadam 2019). Moreover, despite the new constitution passed in 2014, the Tunisian government still maintains reservation for the implementation of reforms that stand in strong conflict with the Islam. This includes a reform to unequal inheritance laws, which is still favoring men at the expense of women (Chambers

and Cummings 2014; Kashina 2021) and therefore creates a strong barrier to the productive participation of women in the form of starting their own business (Hamza 2016).

On top of the inefficient interplay between formal and informal institutions, Tunisia has struggled economically since the political revolution in 2011, creating an untoward environment that further hinders women's economic participation – particularly for young women residing in disadvantages area of lower-income or the country's interior (Moghadam 2019).

Until today, high unemployment rates have been persistent in Tunisia. In 2022, the unemployment rate has been 16.1% of the total labor force. The rate rises to 23.6% for women and 13.0% for men (International Labour Organization 2022). This divide can be explained by the custom that men are typically given priority in employment opportunities, especially in the context of rising unemployment during economic crisis. Women's work became more precarious and the attitude towards women's paid work even more negative due to high male unemployment (Chambers and Cummings 2014; Kashina 2021; Moghadam 2019). The severity of unemployment becomes even more pronounced with higher levels of education and at younger ages; young adolescents between 15 and 30 years old make about one-third of the labor force and three-quarters of the unemployed. The Tunisian economy has not been creating sufficient jobs for the rapidly growing number of young people joining the labor force every year. The situation has become even more difficult with the educated youth expecting decent jobs currently offered primarily by the public sector instead of low-productivity, low-wage jobs offered by the private (informal) sector (Boughzala 2013). Particularly (young) Tunisian women prefer public sector work (Ayadi and Mattoussi 2014; Mouelhi and Goaid 2017). Thus, unemployment rates and duration of unemployment among young women living in poorer hinterland regions, especially in the West of the country, are the highest (Boughzala 2013).

As mentioned above, the evidence suggests that conservative social norms (including mobility restrictions) and the lack of economic opportunities (including decent jobs) discourage young, low-income women living in lagging regions from seeking jobs in the labor market (Kokas, El Lahga, and Lopez-Acevedo 2021), or even settling for vulnerable jobs (AlAzzawi and Hlászny 2020). In this paper, we aim to assess personal beliefs and perceived social norms towards the appropriateness of women working outside their home among youth living in disadvantaged neighborhoods, in order to shed light on potential discrepancies between personal beliefs and perceived social norms.

2. Methodological framework

The measurement of social norms is far from trivial and suffers from many potential biases. A common method, for instance, is to aggregate FOBs of a social group. FOBs are beliefs about what the individual personally considers appropriate or inappropriate. Yet, this method creates a measure that might confound norms and other relevant determinants of the issue under consideration (Görges and Nosenzo 2020). Moreover, there might be a misalignment between average FOBs and perceived social norms caused by a phenomenon called ‘pluralistic ignorance’ (e.g. Bursztyn, González, and Yanagizawa-Drott 2020), making average FOBs a poor proxy for prevailing social norms.

Social norms are broadly defined as shared understandings within a social group about what is considered acceptable or unacceptable behavior in a given situation (e.g. Bicchieri 2006; 2017; Fehr and Schurtenberger 2018; Sugden 1998). Hence, social norms (or ‘injunctive norms’) are beliefs about what one ought to do – or not to do – as perceived by others. Therefore, a proposed method to approximate social norms is to ask about SOBs. Görges and Nosenzo (2020) provide a review of three methods for the elicitation of SOBs, and describe their respective benefits and challenges. Aside the ‘belief survey’ and the ‘Krupka-Weber’ method,³ the opinion-matching method is argued to address many of the concerns raised against the other two methods (Bicchieri and Xiao 2009; Bicchieri et al. 2022).

The opinion-matching method consists of a two-step elicitation procedure. In a first step, a group of respondents are asked to report their own (first-order) beliefs about the appropriateness of a certain behavior. In the second step, the same (or a new) group of respondents is asked to guess the most common response of the first step (i.e. to report their SOBs of appropriateness). In order to incentivize a distinction between their own FOBs and the SOBs in step two, which requires a certain degree of ‘cognitive effort’, and to measure more accurately the perceived social norm, respondents receive financial incentives proportional to the accuracy of their response in the second step (Bicchieri and Xiao 2009; Bicchieri et al. 2022; Görges and Nosenzo 2020). With the two-step procedure providing data on FOBs and SOBs, this method also enables measuring to what extent there exist misconceptions about social norms. Possibly, these norms are misperceived in the sense that men and women privately find that women are well placed to work outside the house, but they think others may disapprove (Görges and Nosenzo 2020; Bursztyn, González, and Yanagizawa-Drott 2020).

However, while the opinion-matching method compensates for the caveats of the other two methods, it also comes with some disadvantages. One is that, by construction, the first step cannot be incentivized because it measures personal opinions. Responses therefore are prone to responding biases. Survey participants may provide socially desirable responses that may not reflect their true personal opinion. Here, respondents may align their answer with what is perceived to be the social norm – hence, causing social desirability bias (DeMaio 1984) – or they may respond in line with what

³ For the sake of brevity, we refrain from providing a detailed account of both methods and refer the interested reader to Görges and Nosenzo (2020).

they believe the interviewer or experimenter wants to hear. The latter effects are called ‘experimenter demand effects.’ More precisely, considering the sensitive nature of the topic in that setting, social experimenter demand effects, could occur where respondents perceive social pressure to respond what constitutes appropriate behavior according to the experimenter (Zizzo 2010). Such biases can in turn undermine the measurement of SOBs if second-step respondents anticipate this, and provide answers that align with the belief distortion in the first step instead of perceived social norms (Görges and Nosenzo 2020). A second disadvantage surfaces from the administrative perspective, because the implementation of the opinion-matching method comes with monetary costs and the payment of the financial reward – contingent on an accurate response – after the survey is finalised.

These two sets of disadvantages raise questions on (i) the robustness of FOBs elicited in the first step, and (ii) the need for financial incentives in the second step. We address these two concerns by experimentally assessing the opinion-matching method in a survey on social norms towards women and work among young Tunisians.

3. Data, survey experiment and balance tests

3.1. Survey context

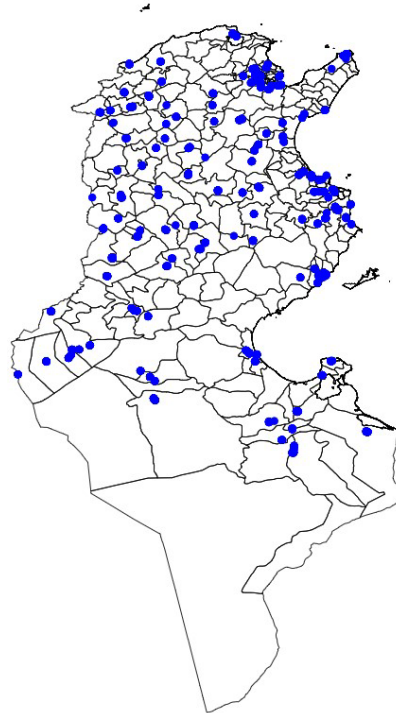
The opinion-matching survey experiment was embedded in the baseline survey data collection of a larger impact evaluation of the 'Programme de Réhabilitation et d'Intégration des Quartiers d'Habitation' (PRIQH 2), a programme aiming to improve the living conditions of the poor living in disadvantaged neighborhoods across Tunisia. For this project, governorates could propose projects identifying neighborhoods in need of basic infrastructure upgrading. From a total of 313 project applications received from throughout Tunisia, 224 projects were considered eligible based on population size, housing density and urbanization criteria.⁴ Of those, 121 were selected to fit within the investment envelope allocated by the Tunisian Five-Year Plan, with a larger share of the overall budget allocated to less developed regions, as indicated by the Tunisian Regional Development Index. The 121 selected projects were planned to receive a multi-pronged intervention over the period 2019-2024, including basic infrastructure, such as the rehabilitation of roads, street lights, the improvement of drinking water, rainwater drainage and wastewater treatment systems, and the construction of socio-collective facilities. The impact evaluation study focuses on the areas to be treated in the first two years as "treatment areas". Each governorate has at least one treatment area in that period, with up to six treatment areas in the governorate of Mahdia. These were matched to control areas from the projects that were eligible but not selected due to budget constraints, resulting in a total of 66 treatment and 66 control areas.

In each area, 40 households were randomly selected, totaling 5,280 households that were interviewed in the 132 areas between December 2021 and February 2022. Within each household, three questionnaires were applied: (1) a household questionnaire (N = 5,280); (2) an individual questionnaire that was either answered by a male or a female adult respondent (N = 5,280); and (3) a youth questionnaire that was answered by up to two young adults living in the households and aged 16 to

⁴ Eligibility criteria were: more than 200 households in the project area, a density greater than 20 dwellings/hectare, and an urbanization rate greater than 80%. The project area, also called the intervention zone, was geographically indicated on a map highlighting the boundaries of the areas that needed the infrastructure works and did not correspond to an entire administrative level. The average size of the areas are: 5,672 inhabitants, 1,227 dwellings, 48,751 hectares surface.

30 years (N = 2,659).⁵ The survey experiment was embedded in the youth questionnaire.⁶ Due to the focus on low-income neighborhoods, our findings are very particular to disadvantaged areas in Tunisia. Yet, as Figure 1 indicates, these areas are distributed across the entire country, including areas in the relatively prosperous flat coastal zone, which is perceived to have a less conservative mindset, and areas located in the poorer remote non-coastal zone.

Figure 1. Location of sampled low-income neighborhoods across Tunisia



Note: The blue dots indicate all areas where a youth questionnaire was answered after the household and individual questionnaire.

⁵ Out of a total of 3,720 16-to-30-year-old members within the surveyed households, 2,659 youth questionnaires were completed, equivalent to 71.5%. 282 eligible respondents to this questionnaire refused to answer the questions (7.6%), and 385 eligible respondents were unreachable (10.3%) (in other regions, traveling, or not available). The remaining non-responses consist in eligible respondents who were not interviewed for other reasons. When respondents refused to take part in the survey or were not reachable, no information was collected. It is important to note that the individuals that were approached to take part in the survey were not informed of the exact content of the questions they were to be asked, and, in particular, the experiments we planned in running. In this sense, non-responses of eligible youth members of surveyed households should not be related to the experiment we conducted; they are not expected to have any implications in result interpretation.

⁶ The experiments were conducted as part of the first youth questionnaire module asking about respondents' values, and targeted all surveyed household eligible youth respondents in the same way.

3.2. Experimental design

Table 1 presents the experimental design. We followed a stratified randomization approach, where we stratified at the area level – assuming that social norms are uniform within areas but not necessarily between areas. Within an area, the 40 households were randomly allocated to the respective treatment and control groups according to their household ID (HH ID).

The first separation took place between households with the HH ID 1 to 20 (i.e. Group FOB_DQ) and 21 to 40 (i.e. Group FOB_LE). They differed in terms of whether they were part of the first step of the opinion-matching experiment or served for the list experiment (LE). Respondents in Group A were directly asked about their first-order beliefs towards women and work in Tunisia; more specifically, they were asked the following direct question (DQ) “*In general, do you think it is appropriate that women work outside the home?*”, which they had to answer on a 4-point Likert-scale ranging from 1 = very inappropriate, 2 = inappropriate, 3 = appropriate to 4 = very appropriate. This first step is by construction not incentivized and may therefore be vulnerable to responding bias. For instance, instead of responding in line with their true, personal opinion, they might answer in line with what is perceived to be the social norms, or with what they perceive the interviewer wants to hear (DeMaio 1984; Zizzo 2010).

Table 1. Experimental design

Group FOB_DQ: HH ID 1-20		Group FOB_LE: HH ID 21-40	
List experiment (N = 1,286)			
FOB: Direct question (N = 1,373)		HH ID [21,30]	HH ID [31,40]
		LE_C: Control group; 3 statements (N = 654)	LE_T: Treatment group; 4 statements (N = 632)
Financial incentive experiment		Financial incentive experiment	
Even HH ID (2, 4, ..., 18, 20)	Uneven HH ID (1, 2, ..., 17, 19)	Even HH ID (22, 24, ..., 38, 40)	Uneven HH ID (21, 23, ..., 37, 39)
Group SOB_NI: Control group = no incentive (N = 667)	Group SOB_FI: Treatment group = financial incentive (N = 706)	Group SOB_NI: Control group = no incentive (N = 652)	Group SOB_FI: Treatment group = financial incentive (N = 634)

In order to test the validity of the responses to the FOB-question in Group FOB_DQ, we conducted a list experiment (LE) with the other half of the sample in Group FOB_LE. In a list experiment (Blair, Imai, and Lyall 2014; Glynn 2013; Rosenfeld, Imai, and Shapiro 2016), respondents are randomly assigned to either a control or a treatment group. In the former, respondents are presented with a list of statements that are contentious but not stigmatized. In the latter, respondents are presented with an identical list of items but also an additional, potentially stigmatized item for which the experimenter would like to elicit beliefs. Respondents in both groups are then asked to indicate how many of the statements they agree with – they do not have to state which ones, only the number. The true degree of support for the item of interest at the sample level can then be inferred by comparing the average number of agreements in the treatment group with the average number of agreements in the control group. In our setting, the statements were the following, with the fourth one being the item of interest that is only posed in the LE treatment group (i.e. the personal opinion towards the appropriateness of women working outside the home):

- (1) *In my opinion, Tunisian youth should receive privileged access to job vacancies.*
- (2) *In my opinion, working in the public sector is better than working in the private sector.*
- (3) *In my opinion, vocational training is good for finding a job.*
- (4) *In my opinion, it is appropriate that women work outside of the home.*

The second split took place within Group FOB_DQ and Group FOB_LE. Half of each group (i.e. those with even HH IDs) were asked about their SOBs without receiving any financial incentive (i.e. Group SOB_NI). The question was posed as follows: “If we ask 30 other young people of your age living in the area if they find it appropriate that women work outside the home, how many do you think will find it appropriate?” The other half of each group (i.e. those with uneven HH IDs) were asked about their SOBs and were incentivized financially according to the accuracy of their response (i.e. Group SOB_FI): “We are interviewing a number of other young people in the village. You will be asked to guess how many of these people will find it appropriate that women work outside the home. If you make a very good estimate, you can win TND 60. The two respondents with the best estimates win the prize of TND 60 in

the form of call credit that you can obtain at [SHOP]. If we ask 30 other young people of your age living in the area if they find it appropriate that women work outside the home, how many do you think will find it appropriate?"

3.3. Sample description

As described in the previous sub-section, our sample is divided threefold at various levels. For our analysis to be credible, we need balance of observable characteristics between the groups of each level.

First, in order to assess whether FOBs are unbiased, we need the sample that is asked the direct question to be comparable to the sample that participates in the list experiment. Table 2 presents the summary statistics for each sample. Respondents in the LE sample are on average more likely to be married, less likely to have secondary education and more likely to have tertiary or higher education. Yet, while these differences are statistically significant, the respective values in Column (7) indicate that these differences are not of economic importance.⁷

Table 2. LE and DQ sample description

	List experiment (LE)		Direct question (DQ)		LE - DQ		
	(1) Mean	(2) SD	(3) Mean	(4) SD	(5) Diff.	(6) p-value	(7) Norm. diff.
Age (years)	23.4	4.5	23.3	4.4	0.1	0.917	-0.003
Female	0.528		0.515		0.013	0.501	-0.018
Married	0.101		0.081		0.020	0.069	-0.050
Primary educ.	0.082		0.071		0.012	0.253	-0.031
Secondary educ.	0.624		0.656		-0.032	0.088	0.047
Vocational educ.	0.107		0.115		-0.009	0.483	0.019
Tertiary educ. or higher	0.187		0.158		0.029	0.051	-0.054
Unemployed, work w/o pay	0.355		0.353		0.002	0.909	-0.003
Student	0.375		0.361		0.014	0.469	-0.020
Paid worker	0.138		0.142		-0.004	0.789	0.007
Independent worker	0.050		0.053		-0.003	0.692	0.011
Housewife	0.082		0.090		-0.009	0.426	0.022
Household size (members)	4.7	1.5	4.7	1.4	0.0	0.599	0.014
Asset index (score)	0.123	1.003	0.132	0.963	-0.010	0.802	0.007
N	1,286		1,373				

Note: The table presents balance comparison between respondents receiving the direct FOB question and the list experiment FOB question. Columns (1) and (3) report the mean values for each group and Columns (2) and (4) report the respective standard deviation to the means. Column (5) shows the difference between the two group means and Column (6) the p-values for the test of equality of means. Column (7) indicates the normalized difference. The joint null of equal means is not rejected at standard levels ($F = 1.019$, p -value = 0.428).

⁷ We assess the normalized difference additional to the t-statistic in order to account for the relatively high sample size. All normalized differences are below the critical threshold of 0.25 (Imbens and Wooldridge 2009).

Second, for the list experiment to deliver valid estimates, the control group (receiving the three contentious statements) and the treatment group (receiving an additional stigmatized statement) need to be comparable. Respondents in the list experiment treatment group are less likely to be female, more likely to work for pay and less likely to be housewives (see Table 3). However, the values in Column (7) indicate that the differences are small in size.

Third, in order to assess whether financial incentives result in different responses than without incentives when eliciting SOBs, respondents in both groups need to be comparable. Table 4 shows that respondents in the financial incentive group are less likely to be female and have tertiary or higher education, and live in slightly larger households. Again, the normalized differences render these differences to be neglectable.

Table 3. LE_C and LE_T sample description

	Control group (LE_C)		Treatment group (LE_T)		LE_C - LE_T		
	(1) Mean	(2) SD	(3) Mean	(4) SD	(5) Diff.	(6) p-value	(7) Norm. diff.
Age (years)	23.5	4.5	23.2	4.4	0.1	0.205	-0.050
Female	0.555		0.500		0.055	0.048	-0.078
Married	0.104		0.098		0.006	0.727	-0.014
Primary educ.	0.078		0.087		-0.009	0.556	0.023
Secondary educ.	0.630		0.619		0.011	0.676	-0.016
Vocational educ.	0.101		0.112		-0.011	0.507	0.026
Tertiary educ. or higher	0.191		0.182		0.009	0.673	-0.017
Unemployed, work w/o pay	0.375		0.335		0.039	0.142	-0.058
Student	0.369		0.381		-0.013	0.635	0.019
Paid worker	0.110		0.168		-0.058	0.003	0.118
Independent worker	0.050		0.049		0.001	0.908	-0.005
Housewife	0.096		0.066		0.030	0.051	-0.077
Household size (members)	4.7	1.4	4.7	1.5	-0.1	0.543	0.024
Asset index (score)	0.134	0.958	0.111	1.049	0.023	0.688	-0.016
N	654		632				

Note: The table presents balance comparison between the respondents in the list experiments of the treatment and control group. Columns (1) and (3) report the mean values for each group and Columns (2) and (4) report the respective standard deviation to the means. Column (5) shows the difference between the two group means and Column (6) the p-values for the test of equality of means. Column (7) indicates the normalized difference. The joint null of equal means is not rejected at standard levels ($F = 1.530$, $p\text{-value} = 0.107$).

Table 4. NI and FI sample description

	No incentive (NI)		Financial incentive (FI)		NI - FI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mean	SD	Mean	SD	Diff.	p-value	Norm. diff.
Age (years)	23.3	4.4	23.4	4.5	0.1	0.344	0.026
Female	0.541		0.502		0.038	0.048	-0.054
Married	0.092		0.090		0.002	0.845	-0.005
Primary educ.	0.076		0.077		-0.001	0.919	0.003
Secondary educ.	0.626		0.655		-0.029	0.119	0.043
Vocational educ.	0.108		0.113		-0.005	0.681	0.011
Tertiary educ. or higher	0.190		0.154		0.035	0.017	-0.066
Unemployed, work w/o pay	0.346		0.362		-0.015	0.405	0.023
Student	0.380		0.356		0.024	0.202	-0.035
Paid worker	0.131		0.149		-0.018	0.179	0.037
Independent worker	0.048		0.055		-0.007	0.384	0.024
Housewife	0.095		0.078		0.017	0.115	-0.043
Household size (members)	4.6	1.4	4.8	1.5	-0.1	0.049	0.054
Asset index (score)	0.124	0.996	0.132	0.969	-0.008	0.831	0.006
N	1,319		1,340				

Note: The table presents balance comparison between respondents receiving the SOB question with and without financial incentives. Columns (1) and (3) report the mean values for each group and Columns (2) and (4) report the respective standard deviation to the means. Column (5) shows the difference between the two group means and Column (6) the p-values for the test of equality of means. Column (7) indicates the normalized difference. The joint null of equal means is not rejected at standard levels ($F = 1.345$, p -value = 0.186).

4. Assessment of the opinion-matching method

4.1 How robust are first-order beliefs?

When being asked directly, 86.9% of the respondents on average state that they find it (very) appropriate that women work outside their home. This number paints a rather progressive picture of young Tunisian's attitudes. This raises the question on whether these FOBs suffer from any type of response bias. We assess this concern by comparing the stated degree of support for women working outside the home with the degree of support inferred from the list experiment. Before starting the analysis for the validity of the FOBs, we evaluate the validity of results from the list experiment. The validity is based on three assumptions: (i) successful randomization, (ii) no design effects, and (iii) floor effects (Lépine, Treibich, and D'Exelle 2020; Porter et al. 2021).

The first assumption requires that individuals allocated to the LE treatment and control group are comparable and hence, on average, likely to agree with the same number of non-sensitive statements in any given list. Evidence for the comparability of both groups within the LE sample is given in Section 3.3.⁸

Table 5. Test for design-effects

	Number of statements			
	0	1	2	3
π_{y1}	0.005	0.154	0.257	0.266
π_{y0}	0.000	0.100	0.253	-0.033
Bonferroni-corrected p-value				0.166

Note: π_{yt} indicates the joint probabilities with $t = 0$ reflecting the control group and $t = 1$ the treatment group. Calculated using the `kict deff` command in Stata developed by Tsai (2019).

The second assumption is necessary so that the inclusion of the sensitive item does not change the number of positive answers to the non-sensitive items. We test this by implementing a statistical test developed by Blair and Imai (2012). The test estimates the joint probabilities of the responses to the stigmatized item and the non-stigmatized items. The null hypothesis of the test states that all the estimated joint probabilities are positive ($\pi_y \geq 0$), which indicates no design effect. In turn, the alternative hypothesis states that any of the estimated joint probabilities are negative, which would render the estimates based on the list experiments questionable. Probabilities cannot be negative by definition, so if some of the joint probabilities are, the test checks whether they have arisen by chance. To increase the power of the test, Blair and Imai (2012) propose using the method of generalized moment selection.

⁸ Additionally, we observe no systematic refusals in responding to the list experiment questions between the treatment and control group.

As indicated in Table 5, one π_{y0} is negative. However, we conclude that the assumption of no design effects is valid, because the Bonferroni-corrected p-value indicate that we cannot reject the null hypothesis of no design effect (at all conventional significance levels).

The third assumption requires the absence of ceiling (i.e. a respondent would honestly answer “yes” to all non-sensitive items) and floor (i.e. a respondent would honestly answer “no” to all non-sensitive items) effects, so that individuals do not become reluctant to provide truthful answers if they believe they no longer benefit from the privacy of their responses answers (Glynn 2013; Kuklinski, Cobb, and Gilens 1997). Thus, the existence of ceiling and/or floor effects would lead to an underestimation of the true population supporting the sensitive item (Blair and Imai 2012). Table 6 summarizes the number of statements that respondents in the control and treatment groups on average stated to agree with. The proportion of respondents in the control group that agreed with all or none of the non-sensitive items is comparably small, which indicates that the list experiment does not suffer from ceiling or floor effects.

Table 6. Summary of list experiment results

	Number of statements					N
	0	1	2	3	4	
Control group (%)	0.5	25.4	50.9	23.2		654
Treatment group (%)	0.0	10.4	40.7	22.3	26.6	632
Both groups (%)	0.2	18.0	45.9	22.8	13.1	1,286

Having established that the results from the list experiments are valid, we can now derive the share of respondents who find it appropriate that women work outside their home when respondents are being asked indirectly as opposed to directly. This number can be derived by subtracting the average number of stated agreements in the control group (i.e. 1.969) from the average number of stated agreements in the treatment group (i.e. 2.659). As indicated in Table 7, 68.1% of the respondents in the list experiment sample on average state that they find it appropriate that women work outside their home. This share is significantly lower than of the sample of respondents that has been asked directly. Hence, the stated degree of support is much more progressive than their true opinions (as inferred from the list experiment), which can indicate social desirability bias or experimenter demand effects, or both. In fact, our finding is in line with evidence from a supplementary qualitative study (Ziadi, Goedhuys, and Bouraoui 2023) that was conducted to understand the social norms perceived by Tunisian youth in the surveyed disadvantaged neighborhoods⁹. In the focus group discussions that were conducted in Hkaima (Mahdia) and Métouia (Gabès), the two areas where the survey results indicated opposing norms, with Hkaima being most conservative and Métouia being most progressive,

⁹ A total of 12 focus group discussions (FGDs) were held, with six FGDs in Hkaima and six in Métouia. The groups were further stratified by gender – as it was considered that participants could more freely express themselves on the topic in single gender groups – and by age cohort [15-18; 19-24; 25-30] to allow maximum homogeneity within the groups to observe changes in perceived norms at this stage in life. The participants were out-of-sample participants from the main survey.

participants generally say that it can be appropriate that women work outside their home when being asked about that. Yet, when probing further into their responses, it becomes apparent that there are several conditions attached to women working outside their home; for instance, it is only appropriate if co-workers are also female, if they manage to fulfill their duties as a housewife and to the children, if they work close to home, if they use safe transport to get to work, and if the work is considered ‘decent’ on a number of contractual and social protection aspects.

Table 7. Validity of FOBs

Share of respondents who find it (very) appropriate that women work outside their home:	
Direct question	0.869
List experiment	0.681
p-value	0.000

Note: The p-value stems from a test of equality of coefficients from the direct question and the list experiment sample.

The discrepancy between the stated support for women working outside their home and the degree of support inferred using the list experiment is different to what other studies in similar contexts found. In their survey with a national sample of about 1,500 married Saudi men, for instance, Bursztyn et al. (2020) also compare the stated degree of support for women working outside their home (i.e. 82%) with the degree of support inferred using a list experiment (i.e. 80%). The difference is only minimal, indicating that social desirability bias or experimenter demand effects are low. The authors compare the FOBs to the SOBs elicited among the same sample and find an average wedge of 25 percentage points. Hence, a substantial amount of Saudi men experiences pluralistic ignorance. That is, they hold a rather progressive private opinion towards women working outside their home, but the incorrectly believe that most other Saudi men hold a more traditional opinion.¹⁰ Yet, if we follow the same strategy, we may find different levels of pluralistic ignorance depending on which FOB measure we are following. We will explore this after analyzing the SOBs among our sample of young Tunisians.

¹⁰ It has to be noted that the sample in the study by Bursztyn et al. (2021) differs strongly from ours. While we interview adolescent male and female Tunisians, Bursztyn et al. (2021) conduct an online survey with a national sample of married Saudi men.

4.2 Are financial incentives necessary to get more accurate second-order beliefs?

We assessed SOBs by asking respondents how many of 30 other young people of the same age in the area find it appropriate that women work outside the home. For the analysis, we will express the stated number in shares. A higher share indicates more progressive perceived social norms towards women working outside their home.

To state what they perceive others believe requires that respondents are able to separate their response from their own personal beliefs in the second step of the opinion-matching method. This requires a certain degree of cognitive effort, which can be achieved through financial incentives. That is, respondents stating a share closest to the true share (as measured by the average FOBs collected in the first step of the opinion-matching method) will be remunerated accordingly. In order to test whether financial incentives yield different SOBs, we conducted the second step with a group receiving an incentive and another group receiving none. Table 8 summarizes the results. We do not find a significant difference in responses between the two groups; on average, young people believe that between 71-72% of young people of the same age in the area find it appropriate that women work outside their home.

Table 8. Average SOBs with and without financial incentives

Share of respondents who find it (very) appropriate that women work outside their home	(1)	(2)	(3)
	Mean	SD	N
Second-order beliefs			
No incentive (NI)	0.719	0.255	1022
Financial incentive (FI)	0.714	0.245	1340
Difference in means (NI - FI)	0.005		
p-value	0.666		

Note: The p-value is from a difference in means test between SOB's of the NI and FI group.

Our findings could indicate that financial incentives are not necessary to incentivize cognitive effort.¹¹ Yet, we only tested one specific level of financial incentives, and not larger ones. Hence, the chosen size of the financial incentive might not be enough to trigger effectiveness. The exploration of varying levels of incentives are thus an important venue for further research. However, we can elucidate whether the saliency of the incentive chosen in our setting depends on the type of respondent.

¹¹ Although ex-post calculations on the Minimum Detectable Effect (MDE) size reveal that we lack power to distinguish an insignificant effect from a very small effect (See Appendix A), we believe that a difference of 0.005 – even if significant – is economically negligible.

In line with the framing literature (e.g. Brewer 2003; Haider-Markel and Joslyn 2001; Reitmann et al. 2020; Van Gorp, Vettehen, and Beentjes 2009), we hypothesize that the need for financial incentives to induce cognitive effort for separating personal from second-order beliefs may co-vary with specific socio-demographic characteristics (e.g. gender, education and wealth) or the level of involvement with the issue under investigation. While we do not observe any significant differences in reported SOB between the NI and FI group once we split the sample by the level of education or wealth¹², we do find that financial incentives evoke differential responses once we look at male and female respondents separately (see Table 9).

Table 9. Heterogenous effects by gender

	SOB: Stated share of respondents who find it (very) appropriate that women work outside their home
Financial incentive (=1)	0.035** (0.016)
Female (=1)	0.131*** (0.016)
FI × Female	-0.066*** (0.021)
Constant	0.647*** (0.013)
Observations	2,362
R-squared	0.039

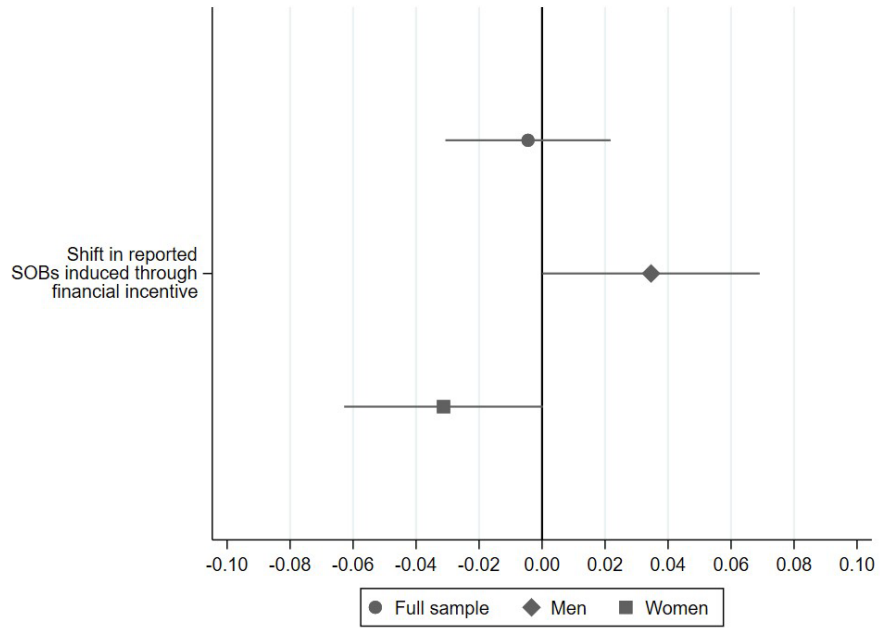
Note: Standard errors are clustered at area-level. *** indicates p-value < 0.001, ** p-value < 0.01 and * p-value < 0.05.

Without financial incentives, men state that a share of 64.7% other young Tunisians in the area would find it appropriate that women work outside their home. Women, on the other hand, state a higher share. Hence, assuming that women might hold more progressive personal views about FLFP than men, it can potentially be inferred that without financial incentives, respondents may rather align the SOB-question with their personal views. Yet, once financial incentives come into place, men report a higher share compared to without financial incentives, and women report a lower share (see Figure 2). More precisely, when being inquired “*If we ask 30 other young people of your age living in the area if they find it appropriate that women work outside the home, how many do you think will find it appropriate?*”, young male Tunisians respond on average one person more, and young female respondents, one person less.¹³ Thus, with financial incentives, the stated perceived social norms of young Tunisian men and women are more aligned.

¹² Results will be made available upon request.

¹³ An effect of (-)0.03 corresponds to 3 percentage points, which translates into around 1 person with 30 people representing 100%.

Figure 2. Shift in reported SOBs with and without financial incentives, by gender



Note: The depicted coefficients indicate the shift in reported SOBs when financially incentivized for the full sample (circle), men (diamond) and women (square).

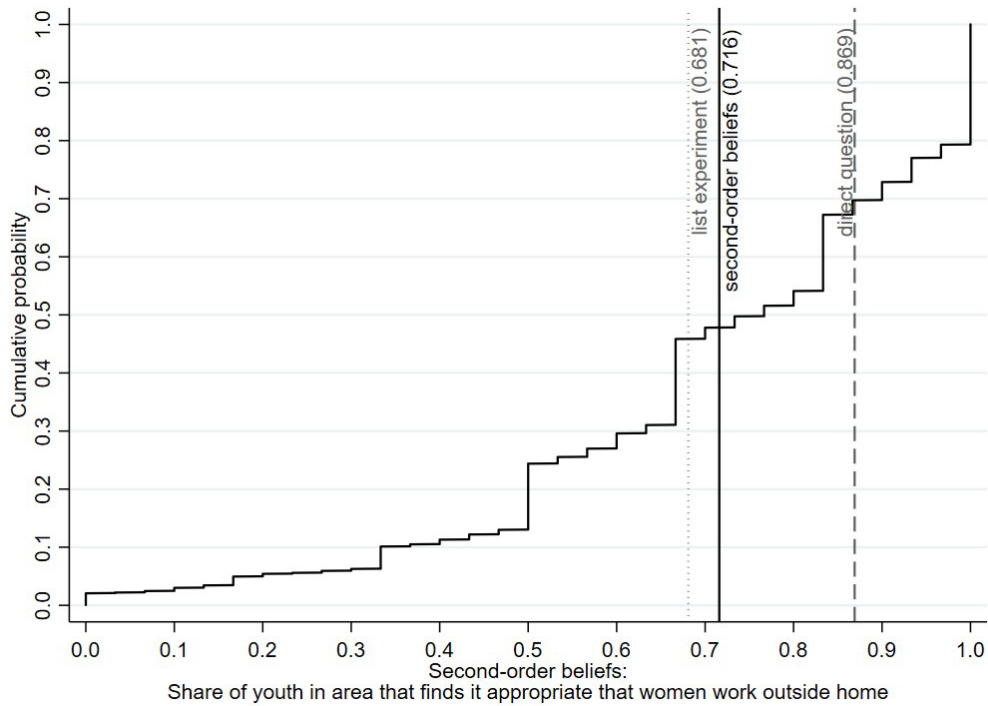
5. Discussion and conclusion

The opinion-matching method provides a two-step approach to elicit robust beliefs about social norms on the appropriateness of a certain behavior. We apply the method in a survey on social norms towards women working outside the home among young Tunisians living in disadvantaged neighborhoods and assess two important features.

First, we evaluate the first step of the opinion-matching method that consists of eliciting personal opinions towards the appropriateness of women working outside their home. By comparing the degree of support gathered through a direct question with the degree of support inferred using a list experiment, we find a significant discrepancy, which could indicate a certain level of social desirability bias or experimenter demand effects. Qualitative work supports this overreporting; when being asked directly, Tunisians do report that they find it appropriate for women to work outside their home, but when probing into this progressive response, several conditions to the appropriateness become apparent.

Second, we test the need for financial incentives in the second step, which consists of eliciting the degree of support towards women working outside their home among the social network as perceived by the respondents. In order to ensure respondents make an effort of distinguishing personal beliefs (as stated in the first step) from the SOBs (as stated in the second step), respondents are incentivized by being remunerated proportional to the accuracy of their guesses as derived from averaging the FOBs from the first step. We randomly assigned respondents to a group that received financial incentives and a group that received none, and find no significant difference on average. Yet, once we separate by gender, men reporting a more conservative share without financial incentives do report a higher share with financial incentives, whereas women reporting a more progressive share without financial incentives do report a lower share with financial incentives. Hence, financial incentives make the stated perceived social norms towards male and female Tunisians align more.

Figure 3. Misperceptions about others' beliefs



Note: CDF of respondents' guesses about the share of young Tunisians in their area agreeing with the statement that it is appropriate that women work outside their home. The vertical line shows the average share of young Tunisians agreeing with the statement. Dashed/dotted vertical lines show the true proportion of respondents agreeing with the statement; the dashed line states the degree of support derived from the direct questions and the dotted line the degree of support inferred from the list experiment.

Our findings have implications for the existence of pluralistic ignorance towards perceived social norms about women working outside their home among youth living in low-income areas in Tunisia. Figure 3 displays the two measures of personal beliefs and the measure of perceived social norms. When assuming unbiased FOBs, one could infer a misalignment between true average personal beliefs and perceived social norms; the wedge is about 15 percentage point and statistically significant at the 1%-level. Yet, with the supporting qualitative evidence and the solid implementation of our list experiment, we conclude that when being directly asked, respondents do not state their true personal beliefs. Instead of 86.9% stating that they personally find it appropriate that women work outside their home, we deduce from the list experiment that the true share is only 68.1%. With this number, the wedge of 3.8 percentage points is statistically insignificant, which indicates no presence of pluralistic ignorance.

With social norms and the potential existence of pluralistic ignorance becoming more and more relevant in development programs and policies, our findings show that unbiased, appropriate measures are crucial. Whenever possible, FOBs should be assessed with measures such as list experiments to deliver unbiased responses, and the second step to elicit SOBs should be incentivized.

Based on our findings, we conclude that there are no pronounced levels of pluralistic ignorance. Hence, young Tunisians have a relatively accurate picture of social norms held by their peers towards women working outside their home in their community. Hence, in order to increase female insertion into the labor market, both personal opinions and social norms need to progress towards a more favorable perception of young women working outside their home. A starting point would be to defuse some of the constraining conditions attached to women working outside their home, e.g. normalizing women working in mixed-gender environments by enforcing policies to protect women in the workplace, or women commuting further away where jobs are available ensuring safe public transport. Yet, against the background that the precarious economic situation and persistent institutional structures reinforce prevailing norms and gender roles, lifting some of the supply-side barriers is also an important step towards increasing FLFP. This, for instance, comprises the enforcement of policies to support working mothers and the creation of decent and secure jobs, particularly in disadvantaged neighborhoods.

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Legal deposit 4th quarter 2023
ISSN 2492 - 2846

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Graphic design MeMo, Juliegilles, D. Cazeils

Layout Denise Perrin, AFD

Printed by the AFD reprography service

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