

NBER WORKING PAPER SERIES

INFORMATION AND SOCIAL NORMS:
EXPERIMENTAL EVIDENCE ON THE LABOR MARKET ASPIRATIONS OF SAUDI WOMEN

Monira Essa Aloud
Sara Al-Rashood
Ina Ganguli
Basit Zafar

Working Paper 26693
<http://www.nber.org/papers/w26693>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 2020, Revised December 2020

This research was supported by a grant from the Saudi Arabia Labor Market Research program administered by Evidence for Policy Design (EPoD) at the Harvard Kennedy School and the Saudi Arabia Human Resources Development Fund (HRDF). We appreciate support from King Saud University in conducting the surveys, and various participants of focus groups that enabled the design of the survey instruments and the interpretation of the results. We thank Jennifer Peck and participants at the SITE-Stockholm School of Economics ‘Gender in Economics’ conference and the 2019 EPoD-HRDF Policy Forum for useful comments. We benefited from input from Taghreed Alhaddab, Yaser Al Husaini, and Semiray Kasoolu. Jacob French, Zachary Milne and Kevin Winseck provided excellent research assistance. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2020 by Monira Essa Aloud, Sara Al-Rashood, Ina Ganguli, and Basit Zafar. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Information and Social Norms: Experimental Evidence on the Labor Market Aspirations of Saudi Women

Monira Essa Aloud, Sara Al-Rashood, Ina Ganguli, and Basit Zafar

NBER Working Paper No. 26693

January 2020, Revised December 2020

JEL No. D80,D83,J10,J20,Z10

ABSTRACT

How important are social norms, information gaps and family constraints in explaining the low rates of female labor force participation (FLFP) in conservative societies? To answer this question, we conducted a field experiment embedded in a survey of female university students at a large public university in Saudi Arabia. We randomly provided one subset of individuals with information on the labor market and aspirations of their female peers (T1), while another subset was provided with this information along with a prime that made their parents more salient (T2). We find that expectations of working among those in the Control group are quite high, yet students underestimate the expected labor force attachment of their female peers. We show that social information matters: relative to the Control group, expectations about own labor force participation are significantly higher in the T1 group, which is driven primarily by receiving information about their peers' aspirations. We show that T2, as intended, causes students to report a higher importance of parents' approval of their choices. However, we do not find that the impact of information is counteracted by evoking parental expectations: impacts for the T2 group on labor market expectations are not smaller than those for T1 group. However, T2 does lead to higher expectations of working in Education and the Public sectors - sectors that are more socially acceptable for women, suggesting that parental expectations their daughters' labor market aspirations but partly shape them.

Monira Essa Aloud
King Saud University
Riyadh
Saudi Arabia
mealoud@ksu.edu.sa

Sara Al-Rashood
King Saud University
Riyadh
Saudi Arabia
sara.alrashood@gmail.com

Ina Ganguli
Department of Economics
Crotty Hall 304
412 N. Pleasant Street
University of Massachusetts Amherst
Amherst, MA 01002
iganguli@econs.umass.edu

Basit Zafar
Department of Economics
University of Michigan
611 Tappan Street
Ann Arbor, Michigan 48109
and NBER
basitak@gmail.com

1. Introduction

A woman's decision about whether to work outside of the home depends on a number of factors, including her own aspirations, her expected earnings, and her beliefs about prevailing gender norms (Jayachandran, 2019). However, in many contexts, women may not have complete information about these factors when making decisions, particularly when the social and economic environments are changing rapidly (Fernandez, 2013). Even if this information is readily available, particularly in countries with more conservative gender norms, her *family's* preferences may still be a constraint to her participation (Bursztyrn, Gonzalez and Yanagizawa-Drott, 2020).

An example of such a fast-changing context is the Kingdom of Saudi Arabia (KSA), where female labor force participation (FLFP) rates have been increasing recently, but cultural barriers to FLFP persist. FLFP in KSA remains low by international standards, yet has inched up from 14% in 1990 to 18% in 2010. The shift has been more rapid in recent years, with FLFP increasing to 23% in 2018 - roughly a 27% increase over less than a decade.¹ In such a rapidly changing social and economic environment – where opportunities for women to work outside of the home have increased and the stigma surrounding FLFP has declined – there is good reason to believe that young women may be misinformed about labor market opportunities and the pace of social change. If so, could providing information on the pace of progress have an impact on women's labor market aspirations? Or would they still be constrained by their families' expectations and prevailing long-standing social norms?

To answer these questions, we conducted a randomized information experiment embedded in an original survey at the female campus of King Saud University (KSU) in 2018, the largest public university in KSA.² Our focus on the labor market aspirations of university women stems from the fact that tertiary enrollment in Saudi Arabia has increased rapidly in recent years (from 39% in 2010 to 68% in 2017 for women)³ and women's employment rates are highest among university graduates.⁴ It is precisely these women who are more likely to be on margin of deciding whether to enter the labor force in the coming years.

For approximately 1,000 female KSU students, we first collected information about students' perceptions of the labor market aspirations of their female peers ("population" beliefs), as well as their perceptions about labor market returns. *Before* the elicitation of students' own labor market aspirations ("self" beliefs) in the final stage of the survey, a random subset of respondents ("T1", henceforth) was provided with objective information about labor market statistics (such as actual average monthly wages of female college graduates), and social information about aspirations of their female peers (such as the average likelihood of KSU women expecting to work

¹ World Development Indicators, World Bank (<https://datacatalog.worldbank.org/dataset/world-development-indicators>). This change is not specific to KSA, and is underway in most Muslim-majority countries- for example, FLFP nearly doubled from 12.5% in 1995 to 24% in 2018 in Pakistan.

² KSU was one of 2 Saudi universities in the top 150 universities in the AWRU ranking in 2018.

³ World Development Indicators, World Bank

⁴ The employment rate for women with University degrees is 38% overall, and 25% among 25-34 year olds and 67% for 25-44 year olds (2017 Labor Force survey conducted by the General Authority of Statistics, GaStat).

at age 25). Thus, this intervention combines both standard labor market information as well as information about peers' aspirations, or "second-order beliefs".⁵

If (1) students' own future labor market expectations depend, in part, on their perceptions of other females' choices and expectations, or on labor market measures such as salaries, and (2) students' perceptions and beliefs are systematically biased, then this information may impact respondents' self beliefs. However, in a fast-changing society where current decisions may still be anchored in the long-standing norms of the previous generation, the impact of such information may be diminished if they consider parental expectations about working outside of the home a binding constraint (Fernandez, 2013).

Our second treatment arm (T2) investigates this hypothesis by providing a separate randomly selected group with the *same information* provided in T1, along with a prime that *evokes their parents' expectations*. To do this, we ask the respondents whether they would like to share a summary of their survey responses with their parents.⁶ While we do not *actually* share the responses with the parents, this prime is meant to bring to mind the expectations of the student's parents, which we would expect to be more in line with historic gender norms. In fact, we show that students assigned to the T2 arm are more likely to report that parents' approval of their choices is important to them (relative to their Control and T1 counterparts), suggestive of the treatment being effective in evoking the role of family and parents. A comparison of impacts of T2 with those of T1 is then informative about the extent to which parental expectations may dampen the effect of T1, the information treatment. If we see that the impacts of T2 are no smaller than those in T1, that would suggest that parents of the current generation of Saudi college students are not constraining their daughters' future choices. Note that T2 may lead to positive impacts if (1) parents are not opposed to their daughters working, and/or (2) daughters feel comfortable enough to communicate their future plans with their parents, even if their parents do not actively support their daughters working. While our main survey does not allow us to cleanly disentangle the two, a positive impact of T2 on expectations would allow us to rule out family as an impediment to educated females' labor market aspirations in Saudi Arabia.

A crucial element of our design is that all respondents first report their beliefs about the measures that were subsequently revealed through the information treatment, allowing us to directly investigate the mechanisms through which the information may have an impact. We first show that the labor market expectations in the Control group are quite high. The mean reported *self* belief for working at age 25 is 67.7% in the Control group, significantly higher than the mean *population* belief for the proportion of KSU students working at age 25 (51.7%). In fact, for all the labor market beliefs, respondents' self beliefs are (economically and statistically) significantly higher than their corresponding population beliefs, implying that students underestimate the labor

⁵ The social information came from a small pilot survey that we had administered to a convenience sample of KSU students a few months prior to the study, while official statistics were used for the labor market statistics.

⁶ Note that students were asked if they would like a summary of their *own* responses shared with their parents, not the information about the labor market and peer aspirations presented to the students in the survey (see exact wording in Section 2.1).

market aspirations of their peers. In a society undergoing substantial transition, this underestimation is perhaps not surprising.

Turning to the experiment, we find that information matters: relative to the Control group, expectations about future labor force participation are significantly higher in the T1 group. Further, it is largely students who severely under-estimate the expectations of their female peers who are impacted by the treatment. This suggests that the impact of the intervention is primarily due to new social information about peers.

Our prior was that the effect of information provision may be dampened by evoking parental expectations about working outside of the home. However, we find little evidence of this: the T2 treatment also significantly increases students' own labor market expectations relative to the Control group and, in many dimensions, the effects are larger than those observed in the T1 group (although not always statistically different). This suggests that, if anything, the T2 parent prime amplifies the impacts of the information treatment. This amplification is primarily driven by students who report wanting to share their responses with their parents. We also find evidence of meaningful heterogeneity by student background, with larger impacts for students with working mothers.

To understand why the parent prime leads to large impacts on self beliefs about future employment, we conducted a second survey with a convenience sample of 150 female KSU students. The results, while only suggestive, indicate that the parents' treatment did not dilute the effects of the information treatment as these parents appear to expect their daughters to work, confirming that social norms about women working outside of the home are changing, at least in this selective segment of the society. Some students report wanting the opportunity to discuss their future plans with their parents and to inform their parents about the changing social norms regarding the FLFP. We cannot rule out that some students in the T2 group may even be over-reporting their expectations of working in order to please their parents, which may be leading to the larger effects in some cases of T2 compared to T1. In light of these results, a fruitful direction for future work would be to investigate the actual beliefs and preferences of parents. Regardless, our results indicate that the fear that parents may be impeding the aspirations of young Saudi educated women may not be warranted.

Strikingly, the T2 treatment led to a significant increase in the reported expectation of working in the Education sector, small decline in the intended likelihood of working in the Service sector, and an increase in the likelihood of working in the public sector. Current employment rates for women are highest in the Education sector, as teaching is considered a socially acceptable profession, and Services less so (Evidence for Policy Design, 2015; Miller, Peck, Seflek, 2019). Similarly, public sector jobs are more desirable among Saudis and employ the majority of working women (Evidence for Policy Design, 2015). Thus, the parent prime seems to push students into sectors more consistent with prevailing social norms. This is also in line with findings from focus groups with parents, where several said they wanted their daughters to work, but at the same time exhibited a strong preference for gender segregation in the workplace; sectors like education are much more likely to provide such an amenity. This suggests that policies that make other sectors

amenable for women by making it easier to abide by social customs on gender segregation may be useful.

Ex post, it is not entirely surprising that information impacts students' choices. There is a large literature showing that educational and labor market choices can be impacted by the provision of labor market information (e.g. Wiswall and Zafar, 2015; Hoxby and Turner, 2015; Jensen, 2010) and social information (Bursztyn et al., 2020; Coffman et al., 2017). Many of these studies are based in settings where information is arguably more readily available than in the Saudi context, suggesting potentially larger information gaps in our context. However, ex ante, it is far from clear that in a setting with conservative gender norms, information could shift individuals' aspirations. Our findings are quite encouraging on this front, and suggest that, in an environment with cultural barriers to FLFP like Saudi Arabia, information on a potentially sensitive cultural topic can impact intended choices. Our results make the case for information campaigns that disseminate both objective and social information about the labor market to be targeted at both students and parents, and for facilitating communication regarding future plans between parents and their daughters.

This paper contributes to the literature examining the role of culture and changing social norms on female labor market outcomes and labor supply choices (e.g. Fernandez and Fogli, 2009; Jayachandran, 2019). Consistent with the idea of the inter-generational transmission of attitudes and norms (Dhar, Jain and Jayachandran, 2018a), we find that impacts are larger for female students whose mothers have worked in the past. These results are in line with both theory and existing evidence. For example, evidence from the US shows that girls who grow up around women who work are more likely to work as adults (Olivetti, Patacchini, and Zenou, forthcoming), and that a married woman is more likely to work if her husband's mother had worked while he was young (Fernandez, Fogli and Olivetti, 2004). Our findings also suggest that the process of social change can be expedited by leveraging social information that contributes to learning during a period of transition (Fernandez, 2013). Our results support the growing body of evidence which finds that interventions can even increase the pace of change in social norms regarding gender roles. For example, recent work by Dhar, Jain and Jayachandran (2018b) from India shows that gender norms of students can be changed through school-based discussions about gender equality.

Our results also speak to a related literature that has examined how educational and career decisions are jointly made in the household (e.g., Bursztyn and Coffman, 2012). Our findings suggest that family and parents could be leveraged to have meaningful impacts on women's labor market choices, which would be consistent with evidence that providing parents with information can impact educational outcomes of their children (Dizon-Ross, 2019; Andrabi, Das and Khwaja, 2017). Giving students the opportunity to discuss future plans with their parents may even empower students and impact labor market outcomes, which is a promising area for further research.

Finally, our paper adds to a small but growing literature on the role of cultural norms on female labor force participation and employment in the Saudi context. Using a randomized information experiment, Bursztyn, Gonzalez and Yanagizawa-Drott (2020) show that correcting misperceptions of social norms among Saudi husbands leads to greater labor force participation

among their wives. Like the current study, they elicit individuals' second-order beliefs, that is, beliefs about others' beliefs (regarding female labor supply norms). Miller, Peck and Seflek (2019), meanwhile, focus on the demand-side factors, and show that a policy increasing gender-neutral quotas for Saudi employment at private sector firms increased female employment. Importantly, they find impacts even for firms where quotas were not binding – suggesting that the policy led to changed norms about women working. While these studies look at the role of norms through Saudi *men* and the impact of policies on *firms*, in this paper we provide complementary evidence on the aspirations of Saudi women *themselves* and how information and cultural norms can impact these aspirations.

The remainder of the paper proceeds as follows. In the next section, we present the research design and describe our sample. Section 3 presents descriptive analysis of the subjective beliefs about students' future career and family expectations, as well as their perceptions of these beliefs for their female peers (second-order beliefs). In Section 4, we present the experimental results and examine heterogeneity in the treatment impacts. Section 5 presents results from the follow-up survey, and Section 6 concludes.

2. Research Design and Sample

In this section, we describe our experimental design and sample.

2.1. Survey and Experimental design

Our experiment was conducted through an original survey of undergraduate students at the female campus of King Saud University (KSU), located in Riyadh, from March to June 2018. Students were recruited to participate in the online survey by sending instructors of large courses a link to the survey and asking them to distribute the link. The survey link was also sent to participants of large student clubs.

The survey was programmed in Qualtrics, and was administered in Arabic. The survey took approximately 40 minutes to complete (median completion time was 37 minutes). The first part of the survey collected information on students' demographics, family background, and college experiences. The second part of the survey elicited beliefs and attitudes.

The experimental part of the survey was divided into three stages. In the first stage, respondents were asked about their beliefs about the future intended behavior of the *population* of other female students at KSU regarding their labor market, marriage, and fertility. For example, students were asked about the proportion of current KSU female students who expect to be working for pay when 25 years old. Likewise, respondents were asked about the age at which KSU students expect to be married by, and the age at which they expect to have their first child. These are students' beliefs about their peers' beliefs and intended choices, and hence are “second-order beliefs”. We refer to these as “population” beliefs in the analysis.

In the second stage, participants were randomly assigned to one of three possible groups, with each participant having an equal likelihood of being assigned to a group. Each group was shown different information, as follows.

(i) Control group: This group only saw a screen saying that “*We will next ask you about YOUR BELIEFS regarding your own future outcomes*”.

(ii) Information Treatment (T1): The second group received the same screen plus an “information treatment”, which consisted of a bundle of three types of information: information about their peers’ beliefs regarding family and career, actual average monthly wages, and information about Hafiz, the national job assistance program with primarily female beneficiaries. Participants were then asked a series of questions about how useful they found the information.

Information on peers’ beliefs was based on data we collected in a separate survey of approximately 80 KSU students. Specifically, we conducted focus groups with female students at KSU in fall 2017, at the end of which students were asked to fill out a short quantitative survey about their aspirations. This was a convenience sample. Summary statistics from this survey were used in the information treatment. The source of the wage information was the 2017 Quarter 2 Labor Force survey conducted by the General Authority of Statistics (GaStat).⁷

The text presented to participants in this treatment group was as follows:

Here is some information about your KSU peers’ plans:

In a survey we conducted earlier this year, female students at KSU reported a very high likelihood, 80%, of working for pay when they are 25 years old. We also found that KSU female students, on average, expect to get married by age 25, and to have their first child by age 28.

Here are some statistics about monthly wages.

The average monthly wages of Saudi female workers with a college degree in 2017 was 10,072 riyals per month.

Here is some information about the Hafiz job assistance program administered by the Human Resources Development Fund (HRDF):

The Hafiz ‘Searching for Employment’ program provides training and motivational services and financial assistance of up to 2,000 SAR monthly in order to support and enable job search among Saudis. Job seekers enrolled in Hafiz gain access to job placement centers, TAQAT-online job postings, Liqaat career fairs, numerous education and training offerings, and many more services.

⁷ Specifically, we used average monthly wages per paid employee (15+), including public and private sectors (<https://www.stats.gov.sa/en>).

They also receive financial support, provided for a period of 1 year, to ease the financial strain of unemployment and allow them to fully focus on finding work.

(iii) Information + Parents Treatment (T2): The third group received the same screen as the Control group plus the T1 “information treatment”, plus an additional “parents treatment”. For the “parents treatment”, the participants were additionally asked if they wanted to share their answers to the survey with their parents. Our goal here was to see if the effects of the information would be diluted by making the student’s parents and family (and thus long-standing social norms about FLFP) salient in their minds.

Specifically, they were told:

“The answers you provide in this section might be helpful for you in discussing your post-college plans and career options with your parents.” They were then asked, *“Would you be interested in having a summary of your answers be shared with your parents?”* and *“What would be the best way of sharing this information with your parents?”*, with choices of email, mail, in person and other. Note that the students’ answers were never actually shared with their parents – the point was to simply prime the students to make them think about their parents and family.

In the third and final stage, all respondents were asked the same questions about their beliefs about labor market and family outcomes for themselves. These included beliefs about own future labor market participation, marriage, and fertility. We refer to these as “self” beliefs in the analysis below.

In the final part of the survey, we also asked a series of questions about gender attitudes and cultural norms.

The survey had several in-built checks. For example, prompts were given if students skipped a question or answered outside a specified range. Since the survey had several questions that elicited probabilistic beliefs, a brief introduction was provided to students to help them answer such questions: *“In some of the questions, you will be asked for the percent chance of something happening. Your answers can range from 0 to 100, where 0 means there is absolutely no chance, and 100 means that it is absolutely certain. For example, numbers like: 2 and 5 percent may indicate “almost no chance”; 18 percent or so may mean “not much chance”; 47 or 52 percent chance may be a “pretty even chance”; 83 percent or so may mean a “very good chance”; 95 or 98 percent chance may be “almost certain”.”*

Note that, in Stage 1, all respondents reported their beliefs about the measures that were subsequently revealed in T1 or T2. The purpose of T1 was to investigate whether social information and/or labor market information can impact students’ family and career aspirations. If (1) students’ own future family and career expectations depend, in part, on their perceptions of other females’ choices and expectations, or on labor market measures such as salaries and job

assistance programs, and (2) students' perceptions and beliefs are systematically biased, then T1 may impact respondents' self expectations.

In T2, we provide the same information but then prime the students to think about their parents. A comparison of impacts for T2 with those for T1 will be informative about the strength of gender and family norms. Sharing responses with parents may positively impact responses because: (1) parents want their daughters to work and that is what students want to tell them (even if they do not themselves really want to work); or (2) daughters want to work but their parents do not want them to, and this gives the daughters an opportunity to communicate this to them. While either mechanism would mean that parents or family are not an impediment to educated females' aspirations in Saudi Arabia, it might be of policy interest to tell the two apart. For example, evidence for the second channel would suggest that facilitating communication between daughters and parents may be useful. Our main survey does not allow us to cleanly disentangle the two apart. A second survey was conducted in February to May 2019 to further understand the results of the main survey. In Section 5, we will discuss this supplementary sample further.

2.2. Sample selection

Our sample consists of 971 female undergraduate students. A total of 1,067 students began and reached the randomization stage of the survey. We, however, restricted the sample to the students who completed the full survey so that we do not have missing data for the main variables of interest (as we show later, missing data is not correlated with treatment assignment in almost all cases). In the analysis, we winsorize the responses to parents' income, own salary beliefs, and beliefs of females' average earnings at the top and bottom 1% of the respective distributions.

In June 2018, during the last month when the survey was open, we shortened the survey by excluding several questions since final exam period had begun and we did not want to overburden students. Thus, for a few outcomes, we have a smaller sample.

The first column in Table 1 shows the characteristics for the entire sample. The average age of the respondents is around 20.4 years. While we have students from across different school years, more than half (54%) are in their first or second year of study at the university. The parents of the participants are highly-educated, with more than 55% of the fathers and 44% of the mothers having a Bachelor's degree. However, only 16% of the students report that their mothers have ever worked for pay. The average income of the parents reported by the participants is around 31,600 riyals per month, or approximately \$8,400. Around 42% of the participants are majoring in the humanities and 31% in business. The lower part of the table shows statistics regarding certain individual traits. The average female student in the sample exhibits reasonable levels of confidence in ability (an average of 3.8 on a 1-5 scale), is fairly risk averse (an average of 5.2 on a 0-10 scale), and has high levels of religiosity (2.8 on a 0-4 scale). The most important reasons reported for choosing a career are enjoying the work and helping others, followed by monetary considerations.

Compared to the actual distribution of students across major tracks at the university, our sample has a similar share of science track respondents (16.3% at KSU vs. 17.5% in our sample),

and a slightly lower share of students in the humanities track (49.6% at KSU vs. 41.6% in our sample). Where our sample differs is in having a lower share of health track respondents (18.6% at KSU vs. 10.1% in our sample) and a larger share of business track respondents (15.1% at KSU and 30.8% in our sample).

While our sample is a selected group of university-going women, as mentioned earlier, tertiary enrollment has increased rapidly in recent years (from to 39% in 2010 to 68% in 2017 for women), so a very large share of young Saudi women is participating in higher education. KSU is one the most selective public universities in Saudi Arabia, and is drawing in females from high-SES high-education families from across the country (most of the students in our sample – 89% - did not attend high school in Riyadh). Thus, one should be cautious in extrapolating from our study. However, we argue that it is precisely females with backgrounds as in our sample who are likely to be on the margin of deciding whether to participate in the labor force or not. It is also worth noting that 16% of our respondents reported that their mother ever worked, which is quite close to the current employment rate of women age 45-54 of 12% among all Saudi women.⁸

Columns (2)-(4) of Table 1 show the characteristics for the control and the two treatment groups. P-values for the differences between the control group and each treatment group are reported in the last two columns (5 and 6). Only 5 of the 48 p-values are statistically significant at the 90% level or higher, which indicates that the randomization was effective in achieving balance across the groups.

3. Descriptive Analysis

Before presenting the experimental impacts in the next section, we first provide descriptive evidence from the survey on students' social attitudes and cultural norms. We also describe students' beliefs about the population (second-order beliefs) and about their own selves. In addition, we explore the heterogeneity in these self-beliefs for the Control group.

3.1. Social Attitudes

Table 2 presents statistics for several social attitudes and cultural norms questions. These questions were asked of participants *post-treatment*, and so may be impacted by the treatment. Hence, we primarily focus on the Control group responses here (Column 2). The table shows that parents and family likely play an important role in students' beliefs about the labor market. Students were asked “*What do you think is the percent chance (or chances out of 100) that your family would approve of you working full-time after graduation?*” The average response is quite high, 79.5%. However, the large standard deviation of 28.4 points indicates that there is substantial heterogeneity in the sample across families. In fact, 15.9% of Control group students report a response of less than 50% (that is, it is more likely that their family would not approve of them working). We also see that it is quite important to the students that their parents approve of their

⁸ Based on calculations from the 2017 Labor Force survey conducted by the General Authority of Statistics (GaStat)

choices: the mean response is 7.3 to the question “*On a scale from 0 to 10 where 0 means "Not Important At All" and the value 10 means "Absolutely Important," how important to you is it that your parents approve of your choices?*”

The survey also included questions to gauge students’ perceptions of whether female full-time work was consistent with local norms and with religious values. The questions were phrased as follows: “*On a scale of 0 to 10, where 0 is “Not at all” and 10 is “Fully”, how consistent do you think the full-time work of females is with local norms and customs [religious values]?*” We see that students, on average, report high values for how consistent they think full-time work of females is with religious values (7.3), and with local norms and customs (6.1). This also suggests that students, on average, find that local norms and customs are more restrictive in terms of labor market participation than religious values. Again, the large standard deviations indicate there is substantial heterogeneity in the sample in these attitudes. In fact, 24.0% of Control group students provide a response of less than 5 for local norms being consistent with female work, and 15.6% provide a response of less than 5 for religious norms being consistent with female work.

The survey also provided students with three statements that can generally be categorized as reflecting traditional gender roles.⁹ They were asked how many of these three statements they agreed with. The average respondent only agreed with half a statement, suggesting that females in our sample do not subscribe to traditional gender roles.

Columns (3) and (4) of the Table 2 show the responses for the two treatment groups. There is evidence that the treatment had an impact on students’ attitudes. In particular, we see that T2, which primed parents and family, has a notable impact on students’ perceptions. The prime seems to have been effective in the sense that it increases the importance that students attach to their parents approving of their choices: the average response for this question is 7.5 in T2 versus 7.2 in the Control group, with the difference statistically significant (p-value = 0.06). We also see that T2 respondents report a higher likelihood of their family approving of their choices, and of full-time female work being consistent with local and religious norms (these differences are statistically significant at the 0.15 level). Thus, T2 seems to have been effective in making salient the role of parents in choices. The table shows little impact on the attitudes of T1 respondents (information alone).

3.2. Subjective Beliefs

We next investigate the patterns in students’ subjective beliefs. Table 3 shows the means of the key beliefs measures for the population (Panel A) and for self (Panel B). We show the means for the entire sample and for each treatment group, as well as the F-test p-value for the differences between the treatment groups and the control group. Recall that we elicited population

⁹ The three statements were: (1) Women who negotiate for a higher salary or job benefits are too aggressive. (2) A man’s job is to earn money while a woman’s job is to look after the home and family. (3) It is more important for a wife to help her husband’s career than to have one herself.

beliefs before the information intervention, so the measures in Panel A are pre-treatment, while the measures in Panel B are post-treatment.

3.2.1. Population Beliefs

We first note that in Panel A in Table 3, there are no significant differences in population beliefs across the control and treatment groups, as one would expect since treatment was randomized. One of the population beliefs that is of interest to us is “*What proportion of KSU female graduates do you think work (either full-time or part-time) when they are 25 years old?*” We see that the average belief about other KSU females working at age 25 is approximately 54.4%. The average belief for working full-time (conditional on working) is 47.6%. While we did not directly ask the unconditional belief for others working full-time, we calculated this from these two measures to be 27.9%, on average.

We are, in particular, interested in students’ beliefs regarding the aspirations of their female peers (that is, students’ second-order beliefs – beliefs regarding their peer’s beliefs). The survey asked: “*We asked other female students the chances (on a 0-100 scale) of working for pay when they are 25 years old. What do you think the average response was?*” The mean response to this question is 53.2%, not too different from the average belief regarding the labor force participation rate of past KSU female graduates. This suggests that students’ perceptions of females’ future labor supply is not too different from their perceptions of current females’ labor supply.

Table 3 shows that respondents believe Saudi women with a college degree who work earn 6,027 Riyals per month (approximately \$1,606), on average. Students were also asked about the age at which KSU students expect to get married by and expect to have their first child by. The average response for expected marriage age is 24.4 years, and for the age at which the first child is expected is 26.2 years.

The two treatment groups received some information about these aspects. As mentioned above, for example, they were informed about the average likelihood of KSU women expecting to work at age 25 (80%), and the age at which they expect to get married by (age 25) and have their first child (age 28). Note, in this case, the information is about the aspirations of other female KSU students, not objective statistics on actual outcomes of past graduates. The reason we provide this information is that objective statistics from KSU (or for that matter, for the broader college-going population) simply do not exist. In addition, in a rapidly changing society, it is arguably one’s perceptions about the aspirations of current peers that matter more than information on past cohorts.

The lower part of Panel A shows several ‘underestimate’ measures. This is the share of participants whose responses were lower than the corresponding measures that were presented to the Treatment groups (see section 3.1). For example, the underestimate measure for females working is the share of respondents who believe that the average intended likelihood of KSU females working is less than 80%, that the average monthly wage of Saudi female workers with a college degree in 2017 was less than 10,072 riyals per month, that the age at which KSU students

expect to get married at is less than 25 years, and that the expected age at birth of first child is less than 28.

We see that the vast majority of our sample underestimates both the share of women expecting to work (86%) and the monthly salary (95%). Only 51% of respondents underestimate the expected age of marriage while 76% underestimate the expected age of first child. A majority of the students – 80% – report they are aware of the Hafiz program, but 62% report an underestimate of the benefits.

Table 4 presents OLS regression results examining the determinants of students' population beliefs. We find that there are few significant predictors among the observable characteristics of students. Respondents whose mother has completed at least a Bachelor's degree report lower beliefs about others working full time, and also lower beliefs regarding peers' beliefs. The low R-squared reported in the last row indicate that this large set of controls explain a very small part of the cross-sectional variation in beliefs (less than 5 percent in the first six columns).

3.2.2. Self Beliefs

Panel B of Table 3 shows respondents' self beliefs. Asterisks on the means in Panel B reflect significance levels for t-tests of equality between the means for the self beliefs and the corresponding population beliefs.

The first row shows that the mean belief for working at the age of 25 is 67.7% for the Control group, significantly higher than the belief regarding the proportion of KSU graduates who work (54.4%) and the belief regarding the proportion of current KSU students who expect to work (53.2%). In fact, we see that for all the labor market beliefs, respondents' beliefs about themselves are (economically and statistically) significantly higher than their corresponding population beliefs. We also see that Control group respondents expect to have their first child later than they believe their peers expect to do so (age 26.9 versus 26.2).

Panel B also shows the effects of the information interventions on outcomes. We will estimate these treatment effects in a regression framework in the next section, but we note that based on differences in means for our key outcomes of interest, we see that both T1 and T2 lead to higher beliefs about working (in particular, working full-time) and beliefs about enrolling in the Hafiz (unemployment assistance) program.

Table 5 examines the drivers of the heterogeneity in self beliefs. Since these are likely to be impacted by the treatments, the sample is restricted to the Control group. Again, we see few significant predictors based on observables. Participants with a higher self-reported GPA do report higher beliefs about working and a later age of having their first child. Interestingly, we see that those reporting higher chances of family approving of their work also report higher self-beliefs about working: a 10-percentage point (pp) increase in the chance the respondent's family would approve of her working full-time after graduation is associated with a 2 pp greater belief of working (either overall or full-time). There are some other interesting relationships in the data: (1) the presence of an older sister is associated with a significantly lower likelihood of expecting to get

married by age 25, and (2) a higher level of agreement with traditional gender roles is associated with a significantly higher likelihood of getting married by 25. Overall, this rich set of controls can explain about 20 percent of the cross-sectional variation in beliefs in our sample.

Before we move to the experimental analysis, it is worth investigating whether self beliefs are correlated with population beliefs. If the two are related and if this relationship is causal (at least, in part), then systematic biases in population beliefs are likely to have consequences for self beliefs. That would make the case for information interventions along the lines we investigate in the next section. In Panel A of Table 6, we regress each self belief onto the corresponding population belief. For reasons mentioned above, we restrict this analysis to the Control group. We see a strong relationship between population and self beliefs.¹⁰ For example, a 1 pp higher belief of other females working at age 25 is associated with a 0.42 pp higher likelihood that the respondent expects to work at age 25. Likewise, a 1-year increase in the population belief of age at birth of first child is associated with a 0.6-year increase in the expected age of childbearing. Panel B shows that the qualitative relationships are unchanged even after controlling for a rich set of covariates.

4. Experimental Analysis

This section investigates the impacts of the information interventions on our outcomes of interest.

4.1. Baseline Analysis

Our main specification takes the form:

$$y_i^{self} = \beta_0 + \beta_1 T1_i + \beta_2 T2_i + \varepsilon_i, \quad (1)$$

where y_i^{self} is the outcome of interest (i.e., the various beliefs about one's own self), and $T1_i$ ($T2_i$) is an indicator that equals 1 if student i was assigned to the information treatment (the information + parents treatment), and ε_i is an error term. The parameters of interest are β_1 and β_2 , which show the average impact of the two treatments on beliefs. β_0 shows the average belief in the Control group. Since assignment to treatment is random, an OLS estimation of (1) yields unbiased estimates of the parameters.

Panel A of Table 7 presents the estimates of equation (1) for various self belief outcomes. The first column uses the belief about working at age 25 as the dependent variable. The mean of this belief for the control group, as indicated by the constant term in the regression, is 67.7. Recall that the intervention revealed the mean intended likelihood of KSU female students working at

¹⁰ Since we did not elicit the share of other females who are married by age 25 but the age at which they get married, self beliefs about the likelihood of being married at age 25 are regressed onto the belief regarding the age at which KSU females expect to get married. A negative relationship between the two indicates that a higher belief of other females' expected marriage age is associated with a lower expected likelihood of oneself being married by age 25.

age 25. Table 3 shows that the vast majority of our respondents – 86 percent – had underestimated this likelihood. We see that the intervention leads to a sizable positive impact on the belief of working at age 25, with an average impact of 2.4-2.6 points for the two treatments. While the estimates are not statistically significant at conventional levels (p-values of the estimates are 0.19 or less), Figure 1 shows that the cumulative distributions in the two treatment groups are below the cumulative distribution of the Control group for most values (the p-value of a Kolmogorov-Smirnov (KS) test for the equality of the Control and T1 distributions is 0.06 and for the Control and T2 distributions is 0.07).

In column (2), we regress an indicator for a high belief of working at age 25, where the indicator is for whether this belief is 70% or higher; 51.5% of the respondents in the Control group report a belief of 70% or higher for this question. We see that the treatments have a significant impact on the likelihood of the student reporting a response of 70% or higher, increasing the proportion of such students by 9.4 pp in T1 and 8.5 pp in T2.

Column (3) of Table 7 uses belief of working full-time at age 25, conditional on working, as the dependent variable. The mean response for this variable in the Control group is 60.9 percent. The interventions lead to a sizable impact on this belief, increasing it, on average, by 3.8 and 6.9 pp for the T1 and T2 groups, respectively. Given that the standard deviation of this belief is 24.6 percent in the Control group, these impacts are sizable, corresponding to 0.15 and 0.28 of the baseline standard deviation. The next column uses the unconditional belief of working full-time at age 25; this is the product of the dependent variables in columns (1) and (3). The mean belief for this variable in the Control group is 43.9 percent. We again see that the treatments lead to sizable impacts on the intended likelihood of working full-time in the future. The average impact is slightly larger for T2 (an increase of 7.0 pp) than for T1 (an increase of 5.2 pp), though the estimates are not statistically different. Figure 2 shows the distribution of responses to this question for the three groups. We see a clear shift towards the right for the two treatment groups (the p-value of a KS test for the equality of the Control and T1 distributions is 0.07, and for the Control and T2 distributions is 0.02). In fact, we see that the T2 cumulative distribution first order stochastically dominates the Control distribution: at any given value, the proportion of students giving a response higher than that is larger for the T2 group (than it is for the Control group).

Next turning to family outcomes in columns (5) and (6), we see that the treatments lead to a small increase in the intended likelihood of being married by age 25. The mean likelihood of this outcome is 48.6 percent for the Control group. The treatments increase this likelihood by 2.0-3.6 pp, though the estimates are not precise. Column (6) shows the intervention had no meaningful impact on the expected age at which students plan to have their first child.

Column (7) investigates whether the treatment had an impact on the likelihood of students expecting to apply for Hafiz, the country's generous job assistance program. Ex-ante, it is not obvious what we should find. Table 3 showed that about a fifth of the respondents were not aware of the program and 62 percent under-estimated the monetary benefits of the program. On the other hand, KSU students might not expect themselves to have to resort to using this program. We see that the treatment leads to a statistically and economically meaningful impact on students' intended

likelihood of enrolling in Hafiz: the impacts are between 3.3 and 5.0 percentage points for the two treatment groups, on a base of 37 percent for the Control group. However, the impact of T2 is smaller than T1.

Finally, the last column of the table shows that the intervention had no impact on students' beliefs about future earnings. This is somewhat surprising since, as shown in Table 3, virtually all the students underestimated earnings of current college-educated female workers. We can only speculate on why that might be the case. First, the Saudi labor market is rapidly changing, and students might not think that past wage is relevant for the future. Second, the average KSU student might not think the earnings of the average woman in the workforce are relevant for them. This explanation is, however, hard to rationalize with the patterns in the data: KSU students, who are arguably positively selected, in fact report beliefs for their own earnings (shown in Panel B of Table 3) that are significantly lower than the official average wage of SR 10,072. Third, the official statistics may be biased. All these factors would lead students to ignore this information.

Overall, Table 7 shows that the information had sizable impacts on students' labor market aspirations. Given the previous literature that information interventions can be effective at impacting individuals' beliefs and choices, this may not seem surprising. However, in a setting like Saudi Arabia with restrictive norms, it is not *ex ante* clear that information alone could shift individuals' intended choices. It is also worth noting that we cannot reject that the estimates for the two treatment dummies are statistically different for any of the outcomes, as shown by the *p*-values of a test of equality of the estimates. That is, on average, both treatments lead to similar effects. This is arguably a surprising result, since it suggests that making family salient does not dilute the impacts of the treatment. We discuss this in more detail later.

Panel B of Table 7 reports the same regressions as in Panel A, except that we now also control for a vector of student characteristics. Doing so has little qualitative impact on the estimates. However, the precision of the estimates generally improves. Since the sample size moves around in the various columns of Table 7, Appendix Table A1 reports the same set of regressions as in Table 7, but for the sub-sample for which we have non-missing data on all dependent variables. This drops the sample size to 802 respondents. As mentioned earlier and shown in Appendix Table A2, item non-response does not differ systematically by treatment assignment.¹¹ Restricting to a common sample shows that results are qualitatively unchanged.

Next, we investigate whether the interventions had any impact on students' expectations about sector of work. Table 8 shows the results for expectations of working in various sectors (*"If you are working full time when you are 25 years old, what do you think is the percent chance (or chances out of 100) that you will be working in each of the following sectors?"*). Since the T1 information was not sector-specific, it is not surprising that we do not see any significant impacts here. However, we see that T2 led to a significant increase in the average expectation of working in Education (close to 4 percentage points) and a small decline in the average expectation of

¹¹ Table A2 shows that there was differential non-response for the question that asked students about the age at which they expect to have a child. Non-response was higher due to a setting in Qualtrics that allowed respondents to skip this question without answering.

working in Services. Column (11) shows that both T1 and T2 led to increased average expectations of working in the Public sector (conditional on working), but the increase for T2 is larger. In the last column, we regress an indicator for a high belief of working in the public sector (that is, a belief of 70% or higher). We see that T2 increased the proportion of students reporting a high belief by 8 pp, but the effects are not significant for T1.

Current employment rates for women are highest in the Education sector, as teaching is considered a socially acceptable profession for women, and Services less so.¹² Moreover, most female employment is concentrated in the public sector. At least for Education, these higher expectations in T2 are unlikely to be due to students expecting higher earnings in Education (relative to other sectors). In fact, among our respondents majoring in Humanities – the major whose students report the highest likelihood of being employed in Education– reported earnings expectations are the lowest.¹³

Thus, these effects suggest that the parent prime in T2 is making traditional norms salient, and pushing students into jobs that are more traditionally acceptable. This is also consistent with the findings in Table 3, which shows that T2 moved students towards more socially traditional values.

4.2. Heterogeneity Analysis

The previous section shows that the information treatments had a significant impact on students' beliefs regarding future labor supply. Beliefs for applying for the Hafiz program also showed modest impacts. In addition, we see that the impacts do not systematically differ by the two treatments, although effects appear larger in T2. In this section, we investigate the heterogeneity and potential mechanisms for the impacts.

4.2.1. Mechanisms

The first question we ask is whether students who had more biased second-order beliefs are the ones who are more responsive to the treatment. The idea is that the treatments may have a larger impact on students who learn that a much higher or lower proportion of female students expect to work in the future than they had previously believed.

For a given outcome, y_i^{self} , let y_i^{pop} be the corresponding belief of student i regarding that outcome for their female peers. Let $Error_i^{pop} = (y_*^{pop} - y_i^{pop})$, where y_*^{pop} is the value of the belief of female peers as shown in the treatment. A positive value of this variable means that the individual reports a population belief about that outcome that is below the objective statistic. For example, in the case of age at first childbirth, $Error_i^{pop}$ is the gap between age 28 and the

¹² See discussion in Miller et al (2019). For example, 74 percent of employed women were working in girls' schools in 2014 (Evidence for Policy Design, 2015).

¹³ Average expected earnings were 7,131 Riyals for Humanities majors, 12,563 Riyals for Health, 8,998 for Science, and 9,376 for Business.

respondent’s belief about other females’ average belief of age at childbirth. Note that the “Error” is effectively revealed to respondents in the Treatment groups but not the Control group.

We estimate the following regression specification:

$$y_i^{self} = \beta_0 + \beta_1 T1_i + \beta_2 T2_i + \beta_3 Error_i^{pop} + \beta_4 (T1_i \times Error_i^{pop}) + \beta_5 (T2_i \times Error_i^{pop}) + \varepsilon_i. \quad (2)$$

If the treatments impacted students through an information channel, we would expect β_4 and β_5 to be positive for all outcomes (except for probability of being married by age 25, which would be negatively impacted since underestimation of marriage age of peers should lead to a decline in one’s expected probability of being married by age 25). In this specification, β_3 captures the relationship between one’s own belief and bias in the population belief for the Control group respondents. If students’ self beliefs are based, in part, on their population beliefs (as is indeed the case, according to Table 6), we would expect the estimate of β_3 to be negative for all outcomes (except probability of being married), i.e., underestimation of population beliefs – a positive error – should be correlated with lower self beliefs.

Estimates of equation (2) are presented in Panel A of Table 9. Consistent with our prior, the estimate of β_3 is negative in all columns (and positive for the marriage probability). That is, those who underestimate population beliefs do, in fact, report lower self beliefs. However, this relationship gets weaker in the treatment groups, as shown by the estimates of β_4 and β_5 . While these estimates are not precisely estimated, they are of the expected sign (the only exceptions being the negative estimates for β_4 and β_5 in the last column). Estimates of β_4 and β_5 are also economically meaningful: for example, column (4) shows that a 21-point increase in in the error variable (i.e., a one standard deviation increase) is associated with a 2.5 (4.2) pp increase in the intended likelihood of working full-time for T1 (T2) respondents, relative to students in the Control group.¹⁴

Table 9 also reports the p-value of a joint test of both interaction terms (β_4 and β_5) being positive for each outcome (and negative for the probability of being married). For the outcomes in the first four columns, the p-values are below 0.22. This suggests that the treatment effects that we have found are, in part, driven by students who had ex-ante under-estimated the revealed information. This can, for example, be seen in Figure 3, which shows the average unconditional belief of working full-time against the belief about other females’ working (this belief was elicited prior to the provision of information). As one would expect, there is a positive relationship between the two for students in each of the three groups. However, the relationship is flatter for students in the two treatment groups. Provision of information leads students – especially those who ex-ante reported lower beliefs about other female students’ beliefs – to report higher beliefs regarding their own future intended labor supply.

¹⁴ The result in Table 8 of a higher expectation of working in Education in T2 is also driven by individuals who ex ante have lower beliefs for their female peers intended likelihood of working (results available upon request).

We have additional suggestive evidence that the content of the provided information led to the treatment impacts: Treatment respondents were asked “*How informative do you find this information?*” 25.5% of the respondents choose “*very informative/useful*” and 9.8% chose “*not informative/useful*”, with the remaining choosing “*somewhat informative/useful*”.¹⁵ Panel B of Table 9 reports estimates from a regression where the treatment terms are interacted with a dummy if the respondent chooses “*very informative/useful*”. Ex-ante we would expect the impacts to be larger in magnitude for this set of respondents. This is generally what we see in the table, though estimates lack precision. For example, in column (3), the average impact for T2 respondents who found the information very informative is an additional increase of 6 percentage points. That is, for T2 respondents who find the information very informative, the impact is nearly doubled (5.24+5.98).

4.2.2. Heterogeneity by School Year

Ex ante it is not clear as to how impacts should differ by school year. Students in later years are closer to graduation and so post-graduation outcomes (labor supply and family) are more relevant outcomes for them. They may be particularly impacted by the provided information. On the other hand, their beliefs might already be well-informed and, hence, be less malleable to any intervention. This is investigated in Panel A of Table 10, where the Treatment indicators are interacted with a variable “Senior”, a dummy that equals 1 for students in the third year or higher (46% of the sample falls in this category). The first four columns show that the impacts on labor market aspirations are larger for those in later years; the p-value for the joint significance of the two interaction terms is less than 0.20. Thus, average impacts – especially on labor market outcomes (including intended Hafiz enrollment) – seem to somewhat differ systematically by school year.

4.2.3. The Role of Family

The finding that T2 leads to impacts that are similar to (or in some cases, even larger than) those for T1 is, at some level, surprising. Ex-ante, in a society with conservative gender norms, one might have expected that making the role of parents salient and flagging the possibility of sharing responses with parents may mute impacts of the intervention. Yet, we find no evidence of that.

Before we dig deeper into T2, we ask if impacts differ by whether the student’s mother has ever worked for pay. Close to 16% of our respondents belong to such households. One would expect that students from households where the mother has ever worked for pay – in a setting with very low female labor supply rates – are arguably less constrained by gender norms. Labor market

¹⁵ Column 1 of Appendix Table A3 shows little evidence of socioeconomic characteristics being correlated with perceiving the information to be very informative. Students in later years and those with an older sister are less likely to find the information very informative, presumably because they already have access to such information from other sources.

information may have a larger impact on such households. Conversely, such students may already know such information— Table 4, however, shows that average beliefs (about other females) of students with a mother who has ever worked are not different from those of their counterparts.

Panel B of Table 10 presents the estimates of equation (1) where we include interactions with an indicator for whether the student reports that her mother has ever worked. In the first four columns that investigate the impacts on beliefs regarding future labor supply, we see that the T1 and T2 interaction terms with this variable are positive. That is, the treatment impact is larger for students whose mother has ever worked. In addition, the impacts are (statistically and economically) significantly larger for T2 students. That is, students from households with a working mother revise their labor supply beliefs up when provided with information and primed about their parents. We see a modest increase in the marriage likelihood for such students in column (5), though the estimates are not precise. In column (7), we see that having a working mother actually leads to large decreases in the intended likelihood of applying for the Hafiz program. Overall, it seems that having a working mother amplifies the treatment effects.

Next, to better understand the effects of T2, we investigate whether the impacts differ by whether a T2 respondent opted to have her responses shared with her parents.¹⁶ A differential treatment effect would be informative of the mechanisms that lead to an impact. We find that a high proportion – 47% – opted for their survey responses to be shared with their parents. The subsample of T2 respondents who choose the option of sharing their survey responses with their parents also reports a higher importance for their parents approving of their choices (an average response of 7.9 versus 7.2 for their counterparts; p-value = 0.013). This is of course a self-selected group, but suggests that individuals who really care about seeking out their parents' approval were more likely to choose to share their responses with their parents. This can also be seen in the last two columns of Appendix Table A3, where the only significant covariate of one's decision to share her responses with her parents is importance of parents' approval. A one standard deviation increase in this variable increases the likelihood of opting to share the responses with parents by 5.5 percentage points.

Some other relationships, which not statistically significant, merit some discussion: column (3) shows that students with college-educated mothers, those with a mother who has ever worked, those who are more likely to believe that female labor supply is consistent with local and religious norms, all are more likely to report to want to share their responses with their parents. On the other hand, students who are more likely to agree with traditional gender role statements are less likely to opt to have their responses shared, but again these results are not statistically significant. Overall, column (2) shows that a large set of covariates can explain less than 7 percent of the variation in the decision to share the survey responses with one's parents.

Table 11 investigates whether impacts differ by whether the student opted to have her survey responses shared with their parents. We see that in nearly all cases where we had significant

¹⁶ Note that the question was “*Would you be interested in having a summary of your answers be shared with your parents?*” Those who answered “Yes” to this were then asked “*What would be the best way of sharing this information with your parents?*” We never collected any contact information for the parents. The point of these questions was to prime the students to think about their parents.

impacts of T2 in the baseline specification (Table 7), the results are driven by the subset of students who indicated they would want their survey responses shared with their parents. For example, looking at the intended likelihood of working at age 25 in the first column, we see that among those T2 students who opted to share their responses, the average impact was a 7.3 pp larger increase (compared to those in T2 who opted not to share their responses). It is also notable that the estimate on the T2 dummy – which now captures the average impact for T2 students who chose not to share their responses – are either economically small or in the same direction as the estimate for the “T2 x Share” term. It is certainly not the case that priming students to think about their family leads such respondents – who do not want to share their responses with their parents – to give more conservative responses. This is reassuring since this is the subpopulation that one might particularly be concerned about otherwise.

Looking across the columns in Table 11, we see that the average impact for T2 students who opted to share their responses is larger in magnitude than the average impact of T1 students (though the differences are not statistically significant). Clearly the subset of students who decided to share their responses with their parents is endogenous. But why is it that these students who want to share their responses with their parents exhibit such high responsiveness to information? We investigate this point in the next section.

5. Further Evidence on the Role of Family

In order to better understand the effects of the T2 treatment, we conducted a shorter follow-up survey during February-May 2019. The goal was twofold: first, to understand the somewhat surprising (at least, to us) result that the T2 treatment did not dilute the effects of the information. Second, to understand why it was that the students most responsive to the information treatment were those who wanted to share their survey responses with their parents.

Specifically, we conducted this follow-up survey to differentiate between several possible reasons for the effects of T2: (1) the responsive students actually want to work but believe their parents would not approve of them working and thus want to signal their labor market aspirations to their parents through their survey responses; (2) these students do not discuss their labor market aspirations with their parents otherwise, and sharing their responses would provide a way to communicate their preferences to their parents; (3) these students believe that their parents do want them to work and making their parents salient in their minds amplifies the effects of the information.

This was a convenience sample of 150 students, recruited by asking instructors of large courses to distribute a link to the survey to students. While some of the respondents may have completed our main survey, we did not ask for information that would allow us to link responses across surveys. Compared to the initial study sample, this sample had disproportionately more students from the Health and Business tracks, and from the fourth (final) year. The survey was again administered online using Qualtrics, but this time was administered in English. This survey took approximately 10 minutes to complete.

The survey asked a few of the same questions as our main survey about self beliefs about working at age 25 and beliefs about marriage and childbearing age. However, most of the questions in this survey were aimed at understanding students' perceptions about their parents' (both mother's and father's) expectations of them working, and how often they communicate with their parents. We also showed them the same information provided in T1 in the original survey (see Section 2.1) and asked whether they would want to share the information with their parents, how the information would make their parents feel (happy or disappointed), and reasons why they would want to or not want to share the information with their parents. Although this was not the intent of T2 in the original survey, it sheds light on whether T2 was helping correct misperceived social norms (as in Bursztyn et al., 2020) or evoking social norms.

We also asked them what we asked in T2 in the original survey: whether they would want to share their responses about their labor market aspirations with their parents, and we probed them for the reasons for their responses.

In Table 12, we show the means for the key variables from the survey. A higher share of this sample wants to share their survey responses with their parents (79% vs. 46% in the main survey). As, mentioned above, this sample differs in certain observables from the initial sample. In addition, the follow-up survey included a much smaller and focused set of beliefs questions, and that may have led a larger share of students to want to share their responses with their parents. Panel A also shows that beliefs of this convenience sample are somewhat more progressive than those of the main sample: on average, students report a higher intended likelihood of working and later ages of marriage and childbirth, compared to the self beliefs in the main survey (shown in Panel B of Table 3). Surprisingly, almost all respondents reported that both their parents expect them to work: the share reporting that their mother and father expects them to work was 97% (as shown in Panels B and C).

The proportion of respondents who would want to share the information provided in our intervention with their parents is also quite high: 66 (56) percent of the students reported wanting to share the information with their mother (father). 44 percent of the respondents reported that sharing the information in the survey with their parents would make their parents *more likely* to want them to work, but an equal proportion (43 percent) reported that the information would have no impact.

Panel A shows that the top reasons reported for sharing this information with their parents was to *"inform them about how Saudi society is changing"* (65% of respondents) and *"it would make them happy to know that more people think like me"* (29%). This suggests that while almost all students report that both their parents expect them to work, students still want to share the (social and labor market) information with their parents to show them how cultural and social norms about work are changing.

The last two panels of Table 12 show the top reasons selected for sharing their beliefs ("future plans") with their parents were to *"make him (her) proud about his (her) daughter's aspirations"* (71% for sharing with father, and 79% for mother), and to *"inform my father (mother) about my plans since we rarely talk about them"* (25% for both). These patterns suggest that while

some students want to signal their labor market aspirations to their parents, the majority want to share their aspirations with their parents because they think their aspirations to work will make their parents proud.

We further examined whether these results differ by how often students reported talking with their parents about future plans. This question (“*How often do you talk with your father (mother) about your future plans?*”) was asked on a 1 (never) to 7 (very often) scale, with the average being reasonably high for talking with fathers (4.3), and even higher for talking with mothers (5.2). In Table 13, we split the sample into those who talk frequently with their fathers and mothers (median response and above) and those who talk infrequently with fathers and mothers. We see several notable differences in these two subsamples. First, those who talk frequently with their parents are relatively more likely to want to share the information and their beliefs with their parents, especially their fathers. However, even among those who talk to their parents infrequently, a sizable proportion reports wanting to share their responses with their parents.

Second, the reason they would want to share the information with their parents differs across the groups. A smaller share of the group that infrequently talks with their mothers selected the reason “*inform them about how Saudi society is changing*” for sharing the information, compared to those who frequently talk to their mothers (48% versus 74%; difference statistically different). We also see that, while more than three-quarters of the subsample that frequently talks to either parent chose “*make him (her) proud about his (her) daughter’s aspirations*” as a reason to share responses, the corresponding proportions were significantly lower for those who talk infrequently with either parent.

It is also notable that a higher share of the group that infrequently talks to fathers chose “*inform my father about my plans since we rarely talk about them*” as a reason for sharing their plans with them (46% vs. 16% among those who frequently talk about them). This suggests that this group saw sharing their responses as a way to communicate their aspirations to their parents. These differences are particularly notable when we condition on frequently talking with the father or not (in fact, reasons for sharing the plans differ less when we look at those who frequently talk with their mother and those who do not).

In sum, our follow-up survey suggests that the parents’ treatment did not dilute the effects of the information treatment since parents of this generation of college-going Saudi women – or to be more precise, parents of Saudi women attending selective colleges – appear to expect their daughters to work.¹⁷ Yet, we also see that some daughters would like the opportunity to discuss their future plans with their parents and inform their parents about the changing social norms regarding the labor market.

¹⁷ We corroborate this in focus groups that we conducted with parents. Both fathers and mothers reported that they wanted their daughters to work after graduation. At the same time, they were aware of potential constraints on sector choice for their daughters. Fathers, in particular, voiced a strong preference for work environments that limit interaction with men. Preferences for gender segregation are common in the Middle East and South Asia (Jayachandran, 2015).

6. Conclusions

In this paper, we investigate the extent to which the provision of new information can play a role in impacting young women's career and family aspirations in a fast-changing economic and social context. Through a survey of female university students, we first show that female college-going students in Saudi Arabia appear to have much higher expectations of future employment than the actual female LFP among older generations. Interestingly, their self-beliefs about working are higher than their beliefs about the probability that their peers will be employed in the future.

Using a field experiment that randomly provided social and labor market information to a subset of students, we find that receiving information about peers' aspirations leads to higher expectations of future employment among students. This appears to be largely due to students under-estimating the aspirations of their female peers. Testing whether information can impact aspirations when it might be inconsistent with the prevailing long-standing social norms, we find that contrary to our priors, making the role of parents salient to students did not counteract the impact of the information treatment. We present evidence that this is likely due to the fact that many students believe that their parents want them to work. However, at the same time, we find that the parent prime increases the likelihood of students expecting to work in Education and the Public sector, socially acceptable sectors where women have tended to work. In a setting where parents seem to be supportive of females working but have a strong preference for gender segregation in the workplace, policies that lower costs for firms to employ males and females (by, for example, providing subsidies to build gender-segregated facilities) may be useful. In fact, Miller et al. (2019) show that costs of integrating females into the workplace are very high in our context.

Our results suggest that students appear to underestimate the pace of social change, and are eager to discuss their future plans and the provided information with their parents. This, in turn, suggests that policies which disseminate information about objective labor market statistics and the pace of social change, while also enabling communication between daughters and their parents, are likely to facilitate informed decision-making and should be promulgated. Interventions that can persuade families that careers outside of education and the public sector are socially acceptable and can lead to higher earnings are likely to be effective.

While our results are encouraging, in that social norms are not diluting the impact of information, one should be cautious in interpreting them. A positive impact on aspirations of future labor supply is a necessary but not sufficient condition for actual change in female labor supply. Constraints (such as on the demand side or other societal norms) may prevent women from increasing their labor force participation even if they aspire to do so. In fact, the average aspirations in our sample are much higher than existing FLFP rates, suggesting that these constraints may be binding. Future work which investigates impacts on actual labor supply would be valuable. It is also worth noting that we find a positive impact of the parent prime in our sample of females attending one of the most selective public universities in the country. Women outnumber men among Saudi university graduates, but tertiary enrollment rates for both men and women only

recently increased dramatically (from to 39% in 2010 to 68% in 2017 for women, and from 34% in 2010 to 69% in 2017 for men)¹⁸. While it is reassuring that social norms are not an impediment in this selective sample, the interaction of information and social norms in the broader population remains unknown.

¹⁸ World Development Indicators, World Bank (<https://datacatalog.worldbank.org/dataset/world-development-indicators>).

References

- Andrabi, T., Das, J., & Khwaja, A. I. (2017). Report Cards: The Impact of Providing School and Child Test Scores on Educational Markets. *The American Economic Review*, 107(6), 1535.
- Bursztyrn, L., & Coffman, L. C. (2012). The Schooling Decision: Family Preferences, Intergenerational Conflict, and Moral Hazard in the Brazilian Favelas. *Journal of Political Economy*, 120(3), 359-397. doi:10.1086/666746
- Bursztyrn, L., González, A.L. and Yanagizawa-Drott, D., (2020). Misperceived Social Norms: Women Working Outside the Home in Saudi Arabia. *American Economic Review*, 110(10), pp.2997-3029.
- Coffman, L. C., Featherstone, C. R., & Kessler, J. B. (2017). Can social information affect what job you choose and keep?. *American Economic Journal: Applied Economics*, 9(1), 96-117.
- Dhar, D., Jain, T., & Jayachandran, S. (2018a). Intergenerational Transmission of Gender Attitudes: Evidence From India. *The Journal of Development Studies*. doi:10.1080/00220388.2018.1520214
- Dhar, D., Jain, T., & Jayachandran, S. (2018b). Reshaping Adolescents' Gender Attitudes: Evidence from a School-Based Experiment in India
- Dizon-Ross, R. (2019). Parents' Beliefs About Their Children's Academic Ability: Implications for Educational Investments. *SSRN Electronic Journal*. doi:10.2139/ssrn.3348071
- Evidence for Policy Design (2015). "Back to Work in a New Economy: Background Paper on the Saudi Labor Market," Harvard Kennedy School, Harvard University, April 2015.
- Fernández, R. (2013). Cultural change as learning: The evolution of female labor force participation over a century. *American Economic Review*, 103(1), 472-500.
- Fernández, R., & Fogli, A. (2009). Culture: An Empirical Investigation of Beliefs, Work, and Fertility. *American Economic Journal: Macroeconomics*, 1(1), 146-177. doi:10.1257/mac.1.1.146
- Fernández, R., Fogli, A., & Olivetti, C. (2004). Mothers and sons: Preference formation and female labor force dynamics. *The Quarterly Journal of Economics*, 119(4), 1249-1299.
- Hoxby, C., & Turner, S. (2015). What High-Achieving Low-Income Students Know About College. *American Economic Review*, 105(5), may 2015, 514-517. doi:10.3386/w20861
- Jayachandran, S. (2015). The Roots of Gender Inequality in Developing Countries. *Annual Review of Economics*, August, 7, 63-88.
- Jayachandran, S. (2019). Social Norms as a Barrier to Women's Employment in Developing Countries. Working Paper, Northwestern University.
- Jensen, R. (2010). The (Perceived) Returns to Education and the Demand for Schooling. *Quarterly Journal of Economics*, 125(2), 515-548. doi:10.1162/qjec.2010.125.2.515
- Miller, C., Peck, J. & Seflek, M. (2019). Integration Costs and Missing Women in Firms. National Bureau of Economic Research, No. w26271.

Olivetti, C., Patacchini, E., & Zenou, Y. (2013). Mothers, friends and gender identity. *Journal of the European Economic Association*, forthcoming.

Saudi Census. (n.d.). Retrieved from <https://www.stats.gov.sa/en>

Wiswall, M., & Zafar, B. (2015). How Do College Students Respond to Public Information about Earnings? *Journal of Human Capital*, 9(2), 117-169. doi:10.1086/681542

World Development Indicators. (2019, April 24). Retrieved from <https://datacatalog.worldbank.org/dataset/world-development-indicators>

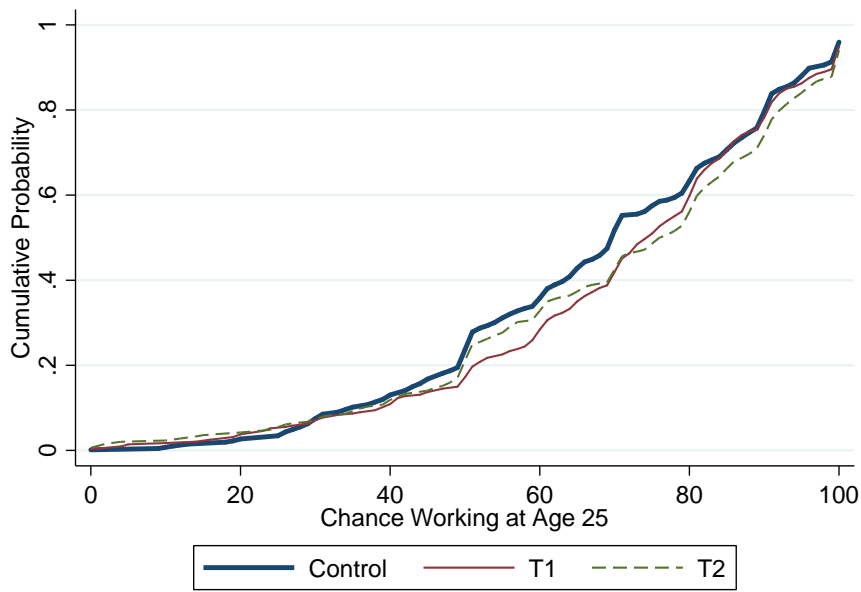


Figure 1: Cumulative distribution of self beliefs of working at age 25, by treatment

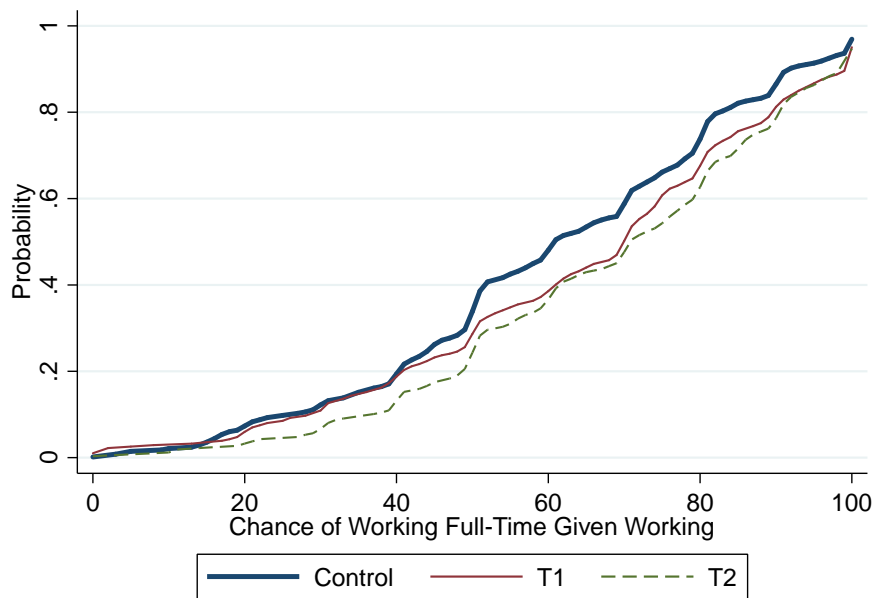


Figure 2: Cumulative distribution of self beliefs of working full-time (conditional on working) at age 25, by treatment

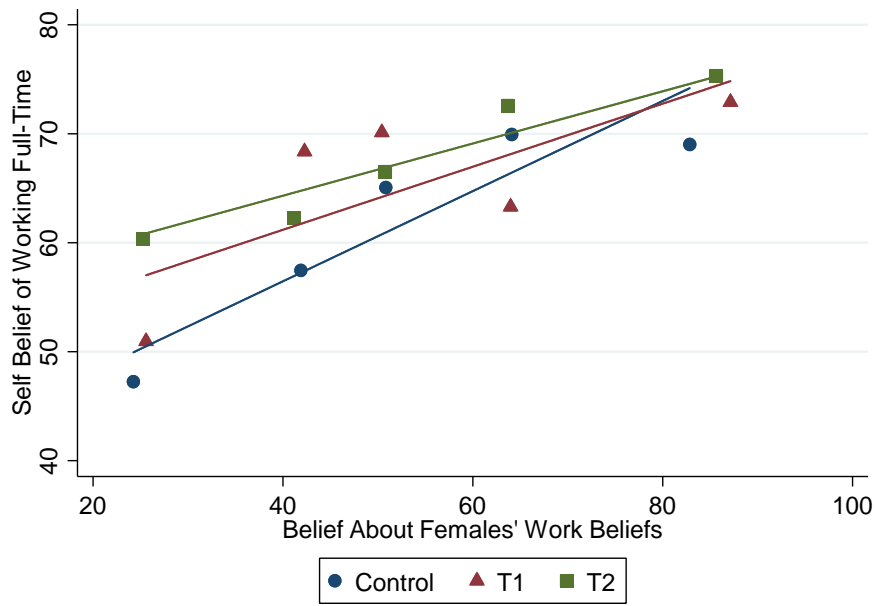


Figure 3: Relationship between self employment beliefs and population employment beliefs, by treatment

Table 1: Sample Characteristics

	All	Control	T1	T2	p-value Control-T1	p-value Control-T2
	(1)	(2)	(3)	(4)	(5)	(6)
Observations	971	334	317	320		
Age	20.42 (1.77)	20.38 (1.77)	20.44 (1.75)	20.44 (1.78)	0.792	0.800
Year at KSU						
First	0.22	0.23	0.22	0.22	0.890	0.681
Second	0.32	0.31	0.32	0.33	0.948	0.608
Third	0.17	0.19	0.17	0.15	0.921	0.199
Fourth	0.18	0.17	0.18	0.20	0.984	0.347
Fifth+	0.11	0.10	0.11	0.11	0.817	0.873
Graduation Year						
2019 or Earlier	0.29	0.28	0.30	0.28	0.589	0.730
2020	0.32	0.34	0.29	0.33	0.136	0.678
2021	0.26	0.24	0.28	0.28	0.525	0.412
2022 or Later	0.13	0.14	0.14	0.11	0.606	0.231
GPA	4.51 (0.45)	4.49 (0.49)	4.50 (0.46)	4.55 (0.38)	0.593	0.082
Father BA+	55.10%	55.09%	56.78%	53.44%	0.463	0.466
Mother BA+	43.67%	45.21%	44.16%	41.56%	0.828	0.355
Mother ever worked	15.65%	14.67%	18.61%	13.75%	0.078	0.253
Any Older Sister	56.75%	56.59%	56.15%	57.50%	0.795	0.740
Any Older Brother	56.13%	52.40%	60.57%	55.62%	0.052	0.825
Parent Monthly Inc. (1000s)	31.63 (56.90)	30.76 (57.41)	31.84 (53.60)	32.32 (59.63)	0.935	0.791
Major:						
Health track	10.10%	9.88%	11.67%	8.78%	0.259	0.338
Science track	17.53%	20.06%	16.09%	16.30%	0.412	0.483
Humanities track	41.55%	39.82%	41.64%	43.26%	0.967	0.449
Business track	30.82%	30.24%	30.60%	31.66%	0.916	0.693
Confidence in Ability (1-5)	3.82 (0.82)	3.83 (0.81)	3.80 (0.83)	3.81 (0.82)	0.760	0.927
Affinity for Risk (0-10)	5.23 (2.42)	5.30 (2.32)	5.23 (2.33)	5.15 (2.61)	0.993	0.527
Religiosity (0-4)	2.81 (1.02)	2.87 (0.96)	2.73 (1.06)	2.83 (1.04)	0.088	0.677
Career Values (0-10):						
Money	7.46 (2.19)	7.25 (2.28)	7.53 (2.10)	7.61 (2.19)	0.494	0.139
Being a Leader	5.77 (2.70)	5.70 (2.69)	5.67 (2.74)	5.95 (2.68)	0.417	0.146
Enjoying Your Work	8.83 (1.86)	8.71 (1.94)	8.69 (2.00)	9.09 (1.58)	0.107	0.002
Helping Others	8.56 (2.11)	8.51 (2.28)	8.48 (2.16)	8.68 (1.88)	0.429	0.210
Working With Others	7.37 (2.58)	7.35 (2.56)	7.38 (2.55)	7.37 (2.62)	0.894	0.998

The table reports sample means. Standard deviations reported in parentheses.

Table 2: Attitudes on Social Factors

	All	Control	T1	T2	p-value	
					Control-T1	Control-T2
	(1)	(2)	(3)	(4)	(5)	(6)
Observations	971	334	317	320		
Family Approve of Working (%)	81.25 (26.08)	79.52 (28.37)	81.25 (25.34)	83.04 (24.18)	0.998	0.133
Importance of Parents' Approval (0-10) ^a	7.28 (2.50)	7.19 (2.58)	7.15 (2.59)	7.50 (2.32)	0.297	0.064
Work Consistent w/ Local Norms (0-10) ^a	6.35 (2.50)	6.14 (2.67)	6.40 (2.35)	6.53 (2.45)	0.668	0.122
Work Consistent w/ Relig Norms (0-10)	7.37 (2.66)	7.28 (2.82)	7.24 (2.61)	7.59 (2.51)	0.285	0.071
Female Traditional Roles (0-3) ^b	0.59 (0.74)	0.60 (0.75)	0.62 (0.79)	0.57 (0.69)	0.455	0.408

Means reported. Standard deviations reported in parentheses.

^a10 means very important/consistent.

^b Students were presented with 3 statements of traditional gender roles, and asked to report the number of statements they agreed with.

Table 3: Subjective Beliefs about the Population and Self

	Resp. Rate	All	Control	T1	T2	pvalue ^a
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Population Beliefs						
Belief about % Females Working	100	54.38 (20.00)	54.22 (19.95)	54.44 (19.71)	54.48 (20.41)	0.9833
Belief % Fem Working FT Work	92	47.59 (20.05)	48.04 (19.44)	47.38 (20.11)	47.33 (20.67)	0.8898
Belief about % Females Working FT ^b	92	27.88 (18.13)	27.97 (18.32)	27.81 (17.86)	27.85 (18.26)	0.9933
Belief about Females' Work Beliefs	100	53.21 (21.24)	51.65 (20.71)	52.90 (21.35)	55.15 (21.60)	0.1032
Belief about Monthly Earnings	100	6027 (3093)	6098 (3299)	6031 (2941)	5949 (3025)	0.8261
Belief of Females' Exp Marriage Age	100	24.37 (1.93)	24.49 (1.93)	24.44 (2.02)	24.19 (1.81)	0.1053
Belief of Females' Exp Childbirth Age	100	26.23 (2.30)	26.24 (2.26)	26.38 (2.51)	26.07 (2.12)	0.2448
% Underestimate ^c						
Females' Work Beliefs	100	0.86	0.87	0.87	0.83	0.1962
Female Salary	100	0.95	0.95	0.95	0.95	0.9197
Marriage Age Beliefs	100	0.51	0.47	0.51	0.54	0.1763
Exp Age at Childbirth	100	0.76	0.74	0.75	0.79	0.3940
Hafiz Benefits	100	0.62	0.61	0.62	0.62	0.9733
% Aware of Hafiz Program	100	0.80	0.80	0.81	0.78	0.5175
Panel B: Self Beliefs						
% Chance of Working at Age 25	100	69.40*** (23.40)	67.74*** (22.92)	70.38*** (22.77)	70.17*** (24.48)	0.2746
% Chance of Working FT Working	92	64.48*** (24.78)	60.95*** (24.58)	64.77*** (25.77)	67.89*** (23.53)	0.0027
% Chance of Working Full-Time	92	47.91*** (27.35)	43.93*** (26.16)	49.07*** (27.76)	50.94*** (27.76)	0.0049
Expected Monthly Salary (Riyals)	97	8701*** (4431)	8518*** (4569)	9005*** (4620)	8590*** (4077)	0.3313
% Chance of being Married by 25	100	50.37 (29.43)	48.54 (29.66)	50.50 (29.80)	52.15 (28.80)	0.2919
Expected Childbirth Age	93	27.08*** (3.58)	26.92*** (3.52)	27.23*** (4.29)	27.10*** (2.78)	0.5601
% Chance of Enrolling in Hafiz	100	39.68 (25.02)	36.99 (25.32)	41.95 (24.48)	40.24 (25.06)	0.0361

Standard deviation in parentheses.

Asterisks represent significance levels for t-tests for equality of means between the population belief and the corresponding self belief. ***, **, * denote p-values of the tests are less than 0.01, 0.05, and 0.1, respectively.

^a p-value of a F-test of the equality of the means/proportions for the Control, T1, and T2 groups (i.e., columns 3-5).

^b The product of (Belief about % Females Working) x (Belief about % Females Working FT | Working).

^c Proportion of respondents who under-estimate these values for the population.

Table 4: Covariates of Population Beliefs

	% Work	% Work FT Work	% Work FT	Beliefs about females' beliefs of			Aware Hafiz	Log Exp Earnings
				Working at 25	Marriage Age	Age at Childbirth		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	-0.95*	-0.79	-0.96*	-0.42	-0.01	-0.05	0.01	-0.01
	(0.53)	(0.69)	(0.57)	(0.59)	(0.06)	(0.07)	(0.01)	(0.02)
Year in School	0.80	1.33*	1.02	-0.02	-0.04	-0.07	0.02*	0.03
	(0.60)	(0.75)	(0.64)	(0.68)	(0.07)	(0.08)	(0.01)	(0.02)
Science track	-0.23	2.36	1.60	2.58	0.53**	0.70**	0.08*	-0.04
	(2.53)	(2.79)	(2.57)	(2.64)	(0.23)	(0.27)	(0.05)	(0.07)
Humanities track	-3.71	-4.81**	-4.34**	1.75	0.11	0.26	-0.00	-0.25***
	(2.26)	(2.44)	(2.20)	(2.40)	(0.21)	(0.24)	(0.05)	(0.06)
Business track	-0.45	-0.90	-1.10	3.10	0.44**	0.60**	0.06	-0.13**
	(2.26)	(2.45)	(2.23)	(2.42)	(0.21)	(0.25)	(0.05)	(0.06)
GPA	2.12	2.12	2.20	1.67	0.32*	0.37**	0.12***	0.11**
	(1.56)	(1.62)	(1.47)	(1.93)	(0.17)	(0.19)	(0.03)	(0.06)
Religiosity (0-4)	0.01	-0.61	-0.44	-0.33	0.04	0.08	-0.02*	0.04**
	(0.58)	(0.66)	(0.60)	(0.65)	(0.06)	(0.07)	(0.01)	(0.02)
Father BA+	0.68	-0.32	0.42	-0.96	-0.02	0.08	-0.03	-0.04
	(1.39)	(1.52)	(1.34)	(1.54)	(0.13)	(0.16)	(0.03)	(0.04)
Mother BA+	-1.62	-2.70*	-3.38**	-0.59	-0.27*	-0.38**	-0.05	-0.07*
	(1.43)	(1.51)	(1.34)	(1.52)	(0.14)	(0.17)	(0.03)	(0.04)
Log parent income	0.11	-0.54	-0.46	0.27	-0.04	0.09	0.01	0.12***
	(0.74)	(0.79)	(0.69)	(0.84)	(0.08)	(0.10)	(0.02)	(0.03)
Mom ever worked	-1.05	1.33	-0.43	-0.88	0.02	0.06	0.01	-0.01
	(1.67)	(1.82)	(1.58)	(1.81)	(0.15)	(0.18)	(0.03)	(0.05)
Any Older Sister	0.80	0.25	0.20	-0.37	0.30**	0.47***	-0.02	-0.01
	(1.46)	(1.47)	(1.33)	(1.56)	(0.14)	(0.16)	(0.03)	(0.04)
Any Older Brother	2.03	-0.66	0.39	-0.24	-0.00	-0.10	0.05	0.02
	(1.43)	(1.44)	(1.31)	(1.51)	(0.13)	(0.17)	(0.03)	(0.04)
Num Siblings	-1.69***	-0.71	-1.23*	-0.49	-0.04	-0.09	0.00	-0.01
	(0.51)	(0.68)	(0.65)	(0.58)	(0.06)	(0.06)	(0.01)	(0.02)
Constant	68.34***	63.88***	48.53***	53.67***	23.46***	24.50***	-0.08	7.13***
	(15.25)	(17.94)	(15.32)	(16.56)	(1.61)	(1.86)	(0.34)	(0.53)
Observations	971	892	892	971	970	968	971	971
Mean of Dep Var	54.38	47.59	27.88	53.21	24.37	26.23	0.80	8.56
R2	0.03	0.03	0.03	0.01	0.03	0.04	0.05	0.09

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 5: Covariates of Self Beliefs (for Control Group only)

	Prob Work (1)	Prob Work FT Work (2)	Prob Work FT (3)	Prob Married (4)	Age 1st Child (5)	Log Exp Earnings (6)
Age	-0.90 (0.85)	-0.51 (1.20)	-1.13 (1.18)	0.98 (1.37)	-0.09 (0.18)	-0.02 (0.02)
Year in School	1.24 (1.04)	0.78 (1.46)	1.99 (1.44)	0.16 (1.54)	0.25 (0.26)	0.01 (0.03)
Science track	4.95 (4.36)	1.31 (4.78)	5.17 (5.37)	12.25** (5.61)	0.92 (0.71)	-0.23** (0.09)
Humanities track	-5.41 (4.20)	-5.41 (4.42)	-6.09 (4.92)	6.14 (5.18)	0.81 (0.62)	-0.47*** (0.07)
Business track	0.59 (4.19)	-7.27 (4.77)	-4.18 (5.20)	5.81 (5.32)	0.68 (0.50)	-0.28*** (0.07)
GPA	5.46** (2.61)	3.91 (2.82)	6.60** (3.16)	1.53 (3.80)	1.58*** (0.50)	-0.11 (0.08)
Religiosity (0-4)	1.04 (1.23)	1.69 (1.44)	1.97 (1.53)	0.27 (1.55)	-0.10 (0.25)	0.03 (0.04)
Father BA+	1.03 (2.61)	-2.64 (3.18)	-2.54 (3.43)	-0.86 (3.54)	0.05 (0.61)	0.02 (0.07)
Mother BA+	1.69 (2.54)	2.31 (3.04)	2.98 (3.18)	4.06 (3.62)	-0.18 (0.59)	0.03 (0.08)
Log parent income	1.92 (1.34)	0.70 (1.61)	1.04 (1.63)	1.75 (1.75)	0.00 (0.24)	0.01 (0.05)
Mother ever worked	-2.50 (2.96)	-3.68 (3.53)	-5.00 (3.59)	-6.74 (4.64)	0.66 (0.46)	-0.03 (0.08)
Any Older Sister	-0.74 (2.66)	-2.34 (2.81)	-1.91 (3.06)	-7.02* (3.77)	0.10 (0.43)	-0.03 (0.08)
Any Older Brother	-3.87 (2.65)	1.22 (2.76)	-0.11 (2.98)	-3.31 (3.71)	-0.27 (0.52)	0.01 (0.07)
Num Siblings	-0.59 (1.03)	0.23 (1.51)	0.05 (1.60)	-1.19 (1.52)	0.22 (0.21)	-0.01 (0.03)
Family Approve of Working (%)	0.20*** (0.06)	0.24*** (0.07)	0.22*** (0.06)	0.11 (0.08)	-0.00 (0.01)	0.00** (0.00)
Work Consistent Local Norms (0-10)	0.09 (0.66)	1.02 (0.72)	0.89 (0.75)	-0.39 (0.97)	-0.09 (0.18)	-0.03*** (0.02)
Work Consistent Relig Norms (0-10)	0.49 (0.54)	0.21 (0.61)	0.44 (0.64)	-0.20 (0.86)	0.33*** (0.12)	0.03* (0.02)
Female Traditional Roles (0-3)	-0.46 (1.67)	-2.37 (1.66)	-1.85 (1.82)	4.57* (2.34)	0.15 (0.30)	0.06 (0.05)
Imp. of Parents' Approval (0-10)	-0.07 (0.47)	-0.23 (0.49)	-0.25 (0.55)	2.02*** (0.65)	-0.25*** (0.09)	-0.01 (0.01)
Constant	22.72 (24.51)	21.46 (30.75)	-1.80 (31.38)	-14.21 (35.27)	19.59*** (4.61)	9.60*** (0.68)
Observations	334	307	307	334	300	324
Mean of Dep Var	67.74	60.95	43.93	48.54	26.92	8.91
R2	0.20	0.20	0.19	0.12	0.15	0.15

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 6: Self Beliefs and Population Beliefs

	Prob Work	Prob Work FT Work	Prob Work FT	Prob Married by 25	Age 1st Child	Log Exp Earnings
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A (no controls)						
Population Belief	0.42*** (0.06)	0.62*** (0.07)	0.69*** (0.07)	-4.38*** (0.92)	0.63*** (0.10)	0.00* (0.00)
Constant	44.71*** (3.95)	31.23*** (3.63)	24.51*** (2.33)	155.86*** (22.76)	10.52*** (2.66)	8.75*** (0.10)
Observations	334	307	307	334	299	324
Mean of Dep Var	67.74	60.95	43.93	48.54	26.92	8.91
R2	0.14	0.24	0.24	0.08	0.15	0.06
Panel B (controls included)						
Population Belief	0.32*** (0.06)	0.52*** (0.07)	0.59*** (0.08)	-4.27*** (0.90)	0.54*** (0.08)	0.00 (0.00)
Constant	8.92 (23.61)	15.11 (25.40)	-1.38 (27.31)	66.34 (40.78)	11.09** (4.32)	9.65*** (0.67)
Controls ^a	Y	Y	Y	Y	Y	Y
Observations	334	307	307	334	299	324
Mean of Dep Var	67.74	60.95	43.93	48.54	26.92	8.91
R2	0.27	0.35	0.35	0.20	0.50	0.19

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a Controls for all covariates from Table 5.

Table 7: Treatment Effects on Beliefs

	Prob Work (1)	Prob Work ≥ 70 % (2)	Prob Work FT Work (3)	Prob Work FT (4)	Prob Married (5)	Exp Age Childbirth (6)	Prob Enroll Hafiz (7)	Log Exp Earnings (8)
Panel A (no controls)								
Constant	67.74*** (1.25)	51.50*** (2.74)	60.95*** (1.40)	43.93*** (1.49)	48.54*** (1.62)	26.92*** (0.20)	36.99*** (1.39)	8.91*** (0.03)
Treatment1	2.64 (1.79)	9.39** (3.88)	3.82** (2.06)	5.15** (2.20)	1.95 (2.33)	0.31 (0.32)	4.96** (1.95)	0.05 (0.05)
Treatment2	2.43 (1.86)	8.50** (3.88)	6.94*** (1.97)	7.01*** (2.21)	3.61 (2.29)	0.18 (0.26)	3.25* (1.97)	0.01 (0.05)
p-value ^a	0.91	0.82	0.13	0.42	0.48	0.65	0.38	0.41
Observations	971	971	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.00
Panel B (controls)^b								
Constant	60.90** (24.75)	76.66* (44.54)	50.56** (24.99)	45.78* (26.29)	40.03 (29.46)	27.10*** (3.75)	2.97 (23.88)	7.88*** (0.48)
Treatment1	3.07* (1.71)	9.89*** (3.77)	4.20** (1.97)	5.85*** (2.07)	2.82 (2.31)	0.24 (0.31)	5.38*** (1.97)	0.06 (0.04)
Treatment2	2.68 (1.78)	8.77** (3.78)	7.71*** (1.91)	7.73*** (2.08)	4.34* (2.24)	0.07 (0.26)	4.11** (1.98)	0.03 (0.04)
p-value	0.83	0.76	0.07	0.38	0.51	0.56	0.52	0.54
Observations	971	971	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.15	0.12	0.14	0.19	0.08	0.09	0.06	0.17

OLS estimates reported (each column in a panel is a separate regression). Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^aP-value is for equality of coefficients on T1 and T2.

^bPanel B regressions include the controls: age, year in school, graduation year, GPA, parent education, mother ever worked, major, confidence in ability, affinity for risk, and religiosity.

Table 8: Treatment Effects on Sector Choice

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Education	Health	Commerce	Business	Telecom	Services	Construction	Mineral	Transport	Agri	Work	High %
				& Finance	& Info Tech			Res.	Storage	& Livestock	Public	Public
											Sector ^b	Sector ^b
Constant	20.34*** (1.24)	14.37*** (1.19)	10.65*** (0.79)	27.63*** (1.42)	12.20*** (0.99)	3.73*** (0.41)	1.65*** (0.26)	3.22*** (0.34)	1.56*** (0.21)	1.20*** (0.23)	52.77*** (1.28)	0.28*** (0.02)
Treatment1	1.24 (1.82)	2.19 (1.85)	-0.82 (1.15)	-0.01 (2.07)	-2.56* (1.34)	-0.81 (0.54)	-0.26 (0.35)	-0.33 (0.55)	-0.08 (0.30)	-0.07 (0.32)	3.54* (1.85)	0.04 (0.04)
Treatment2	3.96*** (1.91)	-0.79 (1.72)	-0.56 (1.25)	0.24 (2.09)	-0.19 (1.44)	-1.24*** (0.55)	-0.58* (0.31)	-0.45 (0.49)	-0.07 (0.36)	-0.27 (0.29)	5.13*** (1.86)	0.08*** (0.04)
p-value ^a	0.17	0.11	0.83	0.91	0.08	0.4	0.27	0.83	0.97	0.49	0.40	0.29
Observations	966	956	955	967	961	958	966	964	964	962	965	965
Mean Dep var	22.04	14.82	10.2	27.71	11.3	3.06	1.37	2.96	1.51	1.08	55.60	0.31
R2	0	0	0	0	0	0.01	0	0	0	0	0.01	0

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^aP-value is for equality of coefficients on T1 and T2.

^bDep var in col (11) is the likelihood of working in the Public sector (on a 0-100 scale), conditional on working. In (12), the dep var is a dummy for this likelihood being 70 or higher.

Table 9: Mechanisms

	Prob Work (1)	Prob Work ≥ 70 % (2)	Prob Work FT Work (3)	Prob FT Work FT (4)	Prob Married (5)	Exp Age Childbirth (6)	Prob Enroll Hafiz (7)	Log Exp Earnings (8)
PANEL A								
Constant	77.50*** (2.27)	66.47*** (4.60)	73.01*** (2.35)	57.77*** (2.65)	46.30*** (1.56)	28.05*** (0.30)	41.27*** (3.14)	9.19*** (0.21)
Treatment1	-0.66 (3.01)	4.68 (6.35)	-0.24 (3.40)	0.99 (3.76)	3.07 (2.30)	-0.22 (0.41)	2.51 (4.31)	0.16 (0.23)
Treatment2	-0.93 (2.95)	4.46 (6.04)	0.89 (3.08)	0.01 (3.56)	2.43 (2.25)	-0.15 (0.35)	0.59 (4.27)	0.11 (0.25)
T1 × Error ^a	0.11 (0.09)	0.15 (0.18)	0.12 (0.10)	0.12 (0.10)	-2.38* (1.26)	0.25 (0.18)	3.09 (4.83)	-0.11 (0.24)
T2 × Error	0.09 (0.09)	0.09 (0.18)	0.17* (0.09)	0.20** (0.10)	-0.17 (1.27)	0.20 (0.13)	3.26 (4.81)	-0.10 (0.26)
Error	-0.34*** (0.07)	-0.53*** (0.13)	-0.41*** (0.07)	-0.47*** (0.07)	4.38*** (0.92)	-0.63*** (0.10)	-5.34 (3.50)	-0.30 (0.21)
p-value ^b	0.12	0.22	0.03	0.03	0.12	0.05	0.23	0.32
Observations	971.00	971.00	892.00	892.00	970.00	899.00	971.00	945.00
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.07	0.05	0.09	0.10	0.06	0.09	0.01	0.02
PANEL B								
Constant	67.74*** (1.26)	51.50*** (2.74)	60.95*** (1.40)	43.93*** (1.49)	48.54*** (1.62)	26.92*** (0.20)	36.99*** (1.39)	8.91*** (0.03)
Treatment1	2.36 (1.91)	9.00** (4.17)	2.83 (2.25)	3.88 (2.37)	2.13 (2.48)	0.53 (0.37)	4.88** (2.09)	0.08 (0.05)
Treatment2	2.09 (2.04)	8.59** (4.23)	5.24** (2.19)	6.03** (2.46)	2.87 (2.47)	0.22 (0.28)	1.00 (2.14)	-0.01 (0.05)
T1 × Very Informative ^c	1.22 (3.12)	1.67 (6.47)	4.11 (3.36)	5.21 (3.84)	-0.75 (4.17)	-0.90* (0.47)	0.33 (3.27)	-0.12 (0.08)
T2 × Very Informative	1.25 (3.05)	-0.32 (6.17)	5.98** (2.83)	3.43 (3.49)	2.73 (3.70)	-0.15 (0.36)	8.28*** (3.08)	0.07 (0.07)
p-value ^d	0.29	0.44	0.01	0.05	0.36	0.04	0.03	0.33
Observations	971	971	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.00	0.01	0.02	0.02	0.00	0.01	0.01	0.01

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a Error is the (true value of the variable - belief about the variable). For example, in cols (1)-(4), it is (80 - belief regarding

the proportion of females who expect to work). A positive value means underestimation of the population value. For Hafiz,

Error is a dummy that equals 1 if the respondent was not aware of the program.

^b P-value for a joint test of (T1 × Error) and (T2 × Error) being positive.

^c Dummy that equals 1 for those T1 and T2 respondents who say the presented information was very informative.

^d P-value for a joint test of (T1 × Very Informative) and (T2 × Very Informative) being positive.

Table 10: Heterogeneity in Treatment Effects

	Prob Work (1)	Prob Work ≥ 70 % (2)	Prob Work FT ¹ Work (3)	Prob Work FT (4)	Prob Married (5)	Exp Age Childbirth (6)	Prob Enroll Hafiz (7)	Log Exp Earnings (8)
Panel A: Heterogeneity by School Year								
Constant	67.64*** (1.64)	48.89*** (3.74)	61.04*** (1.79)	43.83*** (1.89)	46.57*** (2.28)	26.81*** (0.309)	35.93*** (1.87)	8.89*** (0.046)
Treatment1	-0.112 (2.48)	5.50 (5.35)	2.51 (2.63)	2.96 (2.85)	-0.116 (3.22)	0.432 (0.477)	4.44* (2.55)	0.104 (0.0699)
Treatment2	-0.185 (2.51)	6.86 (5.31)	5.29** (2.59)	4.10 (2.87)	6.63** (3.18)	0.186 (0.383)	2.69 (2.62)	0.0582 (0.0663)
T1 × Senior ^a	5.98* (3.57)	8.45 (7.72)	3.12 (4.22)	5.16 (4.49)	4.49 (4.64)	-0.253 (0.635)	1.15 (3.94)	-0.113 (0.0918)
T2 × Senior	5.74 (3.72)	3.67 (7.75)	3.98 (3.97)	7.03 (4.47)	-6.59 (4.57)	-0.0137 (0.512)	1.26 (3.97)	-0.100 (0.0901)
Senior	0.200 (2.54)	5.66 (5.49)	-0.210 (2.88)	0.235 (3.07)	4.29 (3.23)	0.230 (0.401)	2.29 (2.79)	0.0417 (0.0621)
p-value ^b	0.031	0.183	0.158	0.057	0.396	0.394	0.363	0.086
Observations	971	971	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.0136	0.0181	0.0162	0.0206	0.0121	0.0019	0.0107	0.0039
Panel B: Heterogeneity by Mother's Work History								
Constant	68.00*** (1.36)	51.58*** (2.97)	61.30*** (1.54)	44.41*** (1.65)	49.24*** (1.78)	26.83*** (0.23)	36.04*** (1.51)	8.92*** (0.03)
Treatment1	2.33 (1.99)	7.72* (4.27)	3.10 (2.29)	4.47* (2.47)	0.40 (2.57)	0.52 (0.37)	6.56*** (2.16)	0.05 (0.05)
Treatment2	0.97 (2.04)	6.39 (4.21)	4.91** (2.16)	4.57* (2.41)	2.91 (2.51)	0.22 (0.29)	3.72* (2.12)	-0.01 (0.05)
T1 × Mother worked	2.06 (4.63)	9.05 (10.33)	4.46 (5.20)	4.43 (5.41)	9.31 (6.11)	-1.23* (0.68)	-9.95** (5.05)	0.01 (0.12)
T2 × Mother worked	10.54** (4.70)	15.31 (10.69)	15.36*** (4.74)	18.35*** (5.59)	4.76 (5.91)	-0.25 (0.58)	-3.00 (5.73)	0.16 (0.14)
Mother ever worked	-1.77 (3.55)	-0.56 (7.75)	-2.41 (3.72)	-3.35 (3.81)	-4.73 (4.29)	0.59 (0.47)	6.50* (3.75)	-0.05 (0.09)
p-value ^c	0.05	0.53	0.02	0.01	0.44	0.11	0.21	0.22
Observations	971	971	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	50.37	27.08	39.68	8.93
R2	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.00

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a Dummy that equals 1 if student is in the third year or higher.^b P-value for joint significance of the estimates (T1 × senior) and (T2 × senior).^c P-value is for equality between T1 × mother worked and T2 × mother worked.

Table 11: Treatment Effects on Beliefs: Share with parents interaction

	Prob Work (1)	Prob Work ≥ 70 % (2)	Prob Work FT Work (3)	Prob Work FT (4)	Prob Work FT ≥ 70% (5)	Married at 25 (6)	Age Ist Child (7)	Enroll Hafiz (8)	Log Exp Earnings (9)
Constant	67.74*** (1.25)	51.50*** (2.74)	60.95*** (1.40)	43.93*** (1.49)	19.22*** (2.25)	48.54*** (1.62)	26.92*** (0.20)	36.99*** (1.39)	8.91*** (0.03)
Treatment1	2.64 (1.79)	9.39*** (3.88)	3.82* (2.06)	5.15** (2.21)	7.06** (3.42)	1.95 (2.33)	0.31 (0.32)	4.96** (1.95)	0.05 (0.05)
Treatment2	-0.96 (2.30)	1.99 (4.69)	4.08* (2.45)	3.14 (2.70)	6.59 (4.18)	1.38 (2.72)	0.18 (0.30)	0.02 (2.32)	-0.01 (0.06)
T2 × Share with parents ^a	7.34*** (2.69)	14.08*** (5.42)	6.09** (2.71)	8.25** (3.21)	5.58 (5.31)	4.82 (3.22)	-0.01 (0.32)	6.97** (2.79)	0.05 (0.07)
p-value ^b	0.15	0.48	0.51	0.43	0.81	0.47	0.47	0.55	0.98
Observations	971	971	892	892	892	971	902	971	945
Mean of Dep var	69.40	57.36	64.48	47.91	24.55	50.37	27.08	39.68	8.93
R2	0.01	0.01	0.02	0.02	0.01	0.00	0.00	0.01	0.00

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a Dummy that equals 1 for those respondents who report they want to share their responses with their parents.

^b P-value is for equality of coefficients on T1 and (T2 x share with parents).

Table 12: Follow-up Survey Statistics

Number of Observations		150
Panel A		
Would share beliefs with parents		0.79
Percent chance of working at age 25		80.71
Exp age at marriage		25.80
Exp age at first childbirth		28.14
Information is surprising		0.38
Information affects future plans		0.32
Impact of info on parents:	More likely to want me to work	0.43
	Less likely to want me to work	0.01
	No impact	0.44
Reasons to share Info:	Inform how Saudi society is changing	0.65
	Let me work and delay marriage	0.07
	Inform them others are like me	0.29
Reasons to not share Info:	Upset/disappoint them	0.07
Reactions to sharing Info:	Make parents happy	0.39
	Make parents disappointed	0.05
	No change	0.34
	Not sure	0.23
Panel B: Responses Related to Father		
How often do you talk about future plans (1-7)		4.26
Expects me to work		0.97
Share info		0.56
Reasons to/not share plans:	Make proud	0.71
	Don't talk much	0.25
	Does not expect me to work	0.05
	Expects me to work	0.01
	Does not expect me to marry early	0.03
	Does expect me to marry early	0.03
Panel C: Responses Related to Mother		
How often do you talk about future plans (1-7)		5.20
Expects me to work		0.97
Share info		0.66
Reasons to/not share plans:	Make proud	0.79
	Don't talk much	0.25
	Does not expect me to work	0.01
	Expects me to work	0.01
	Does not expect me to marry early	0.01
	Does expect me to marry early	0.05

Table 13: Beliefs about Parents by Frequency of Talking About Future Plans

		Frequently Talk to: ^a		Infrequently Talk to: ^b	
		Father	Mother	Father	Mother
		(1)	(2)	(3)	(4)
Expects Me to Work:					
	Father	0.99	0.98	0.93**	0.96
	Mother	0.96	0.96	0.98	0.98
Share Info With:					
	Father	0.65	0.64	0.35***	0.40***
	Mother	0.64	0.75	0.70	0.48***
Share Beliefs With Parents		0.86	0.84	0.65***	0.69**
Reasons to Share Info:					
	Inform how Saudi society is changing	0.67	0.74	0.61	0.48***
	Let me work and delay marriage	0.08	0.07	0.04	0.06
	Inform them others are like me	0.31	0.32	0.24	0.21
Reasons to Not Share Info:					
	Upset/Disappoint them	0.05	0.05	0.13*	0.12*
Reasons to/not Share Plans:					
	Make proud: Father	0.86	0.76	0.39***	0.60**
	Make proud: Mother	0.90	0.88	0.52***	0.58***
	Do not talk much: Father	0.16	0.24	0.46***	0.29
	Do not talk much: Mother	0.17	0.23	0.43***	0.31
	Does not expect me to work: Father	0.01	0.06	0.13***	0.02
	Does not expect me to work: Mother	0.00	0.01	0.04**	0.02
	Does expect me to work: Father	0.00	0.01	0.04**	0.02
	Does expect me to work: Mother	0.00	0.00	0.02	0.02
	Does not expect me to marry early: Father	0.01	0.03	0.07**	0.02
	Does not expect me to marry early: Mother	0.01	0.01	0.02	0.02
	Does expect me to marry early: Father	0.01	0.02	0.09**	0.06
	Does expect me to marry early: Mother	0.05	0.03	0.07	0.10*

We conduct pairwise tests for the equality of means in column (3) versus column (1). Significance denoted by asterisks on the mean in column 3.

We conduct pairwise tests for the equality of means in column (4) versus column (2). Significance denoted by asterisks on the mean in col 4.

***, **, * denote differences are significant at the 1, 5, and 10% levels, respectively.

^a Frequently talk means respondent talks at least the median response frequency with the given parent.

^b Infrequently talk means respondent talks less than the median response frequency with the given parent.

{Frequently talk to both} \cup {Infrequently talk to both} is not exhaustive since it omits those who frequently talk to exactly one parent.

Table A1: Treatment Effects on Beliefs (Consistent Sample Across Outcomes)

	Prob Work (1)	Prob Work ≥ 70 % (2)	Prob Work FT Work (3)	Prob Work FT (4)	Prob Married (5)	Exp Age Childbirth (6)	Prob Enroll Hafiz (7)	Log Exp Earnings (8)
Constant	75.07*** (22.60)	53.60 (39.57)	-14.95 (22.77)	-15.69 (24.03)	-27.06 (24.98)	32.50*** (3.49)	-11.27 (23.61)	7.59*** (0.58)
Treatment1	3.31* (1.88)	9.86** (4.17)	3.92* (2.10)	5.53** (2.18)	2.61 (2.54)	0.07 (0.29)	6.14*** (2.19)	0.03 (0.05)
Treatment2	3.15 (1.96)	10.27** (4.17)	7.99*** (2.02)	7.74*** (2.19)	4.36* (2.49)	-0.01 (0.27)	4.92** (2.23)	0.04 (0.05)
p-value ^a	0.93	0.92	0.04	0.31	0.48	0.76	0.57	0.91
Controls ^b	Y	Y	Y	Y	Y	Y	Y	Y
Observations	802	802	802	802	802	802	802	802
Mean of Dep var	69.15	56.48	64.61	47.95	50.82	26.98	39.27	8.93
R2	0.18	0.15	0.15	0.20	0.08	0.13	0.06	0.19

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a P-value is for equality of coefficients on T1 and T2.

^b Controls: age, year in school, graduation year, GPA, parent education, mother ever worked, major, confidence in ability, affinity for risk, and religiosity.

Table A2: Item Non-Response by Treatment

	Prob Work (1)	Prob FT Work (2)	Prob Work (3)	Prob Married (4)	Exp Age Childbirth (5)	Prob Enroll Hafiz (6)	Log Exp Earnings (7)
Constant	100.00 (.)	91.92*** (1.49)	91.92*** (1.49)	100.00 (.)	89.82*** (1.66)	100.00 (.)	97.01*** (0.93)
Treatment1	0.00 (.)	0.51 (2.11)	0.51 (2.11)	0.00 (.)	4.50** (2.11)	0.00 (.)	0.79 (1.25)
Treatment2	0.00 (.)	-0.67 (2.18)	-0.67 (2.18)	0.00 (.)	4.87** (2.08)	0.00 (.)	0.18 (1.31)
Observations	971	971	971	971	971	971	971
Mean of Dep var	100.00	91.86	91.86	100.00	92.89	100.00	97.32
R2	.	0.00	0.00	.	0.01	.	0.00

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

Table A3: Correlates of Informativeness, and Sharing with Parents

Dependent Var:	Info Very Informative ^a	Share with Parents ^b	
		Multivariate	Univariate
	(1)	(2)	(3)
Treatment1	-0.04 (0.03)	-	-
Age	0.04*** (0.01)	0.16 (1.99)	1.22 (1.60)
Year in School	-0.06*** (0.02)	3.01 (2.56)	2.77 (1.89)
Science track	-0.14** (0.07)	0.99 (11.72)	-9.30 (7.43)
Humanities track	0.01 (0.07)	8.04 (10.67)	2.77 (5.65)
Business track	-0.03 (0.07)	14.31 (10.77)	6.20 (6.02)
GPA	-0.01 (0.04)	5.19 (9.34)	-1.13 (2.13)
Religiosity (0-4)	-0.00 (0.02)	1.17 (2.84)	3.11 (2.14)
Father BA+	0.02 (0.04)	-4.34 (6.39)	-1.37 (5.61)
Mother BA+	0.04 (0.04)	6.18 (6.64)	3.20 (5.67)
Log parent income	-0.01 (0.02)	-1.26 (3.39)	-0.22 (2.81)
Mother ever worked	0.01 (0.05)	-1.13 (8.15)	1.71 (8.13)
Any Older Sister	-0.08* (0.04)	-4.95 (6.60)	-2.69 (5.66)
Any Older Brother	0.03 (0.04)	1.84 (6.58)	3.39 (5.62)
Num Siblings	0.00 (0.02)	1.14 (2.36)	1.54 (1.75)
Family Approve of Working (%)	0.00 (0.00)	0.01 (0.14)	0.11 (0.12)
Work Consist Local Norms (0-10)	0.02* (0.01)	1.48 (1.45)	1.58 (1.12)
Work Consist Relig Norms (0-10)	0.00 (0.01)	-0.08 (1.41)	0.45 (1.11)
Female Traditional Roles (0-3)	0.01 (0.03)	-5.73 (4.66)	-2.96 (4.08)
Importance of Parents' Approval (0-10)	0.01 (0.01)	2.19* (1.20)	2.13** (0.87)
Constant	38.69*** (5.80)	-12.95 (65.94)	
Observations	637	320	320
Mean of Dep Var	0.25	46.25	46.25
R2	0.07	0.06	-

OLS estimates reported. Standard errors reported in parentheses.

***, **, * denote estimates are statistically significant at the 1%, 5%, and 10% levels, respectively.

^a Dep var is a dummy that equals 1 if respondent (in T1 or T2 group) reports the provided information is very informative.

^b Dep variable is a dummy that equals 1 if T2 respondent reports she wants to share her responses with their parents. In col(1), each cell is the estimate from a separate univariate regression. Both cols (1) and (2) use only the T2 subsample.