

Evaluating the Impact of Entrepreneurship Edutainment in Egypt: An Experimental Approach

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May 2021

Keywords: Media; Gender; Entrepreneurship; MENA; Egypt

JEL Codes: O1, J01, L26, N37

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ABSTRACT

We measure the impact of an edutainment program specifically designed to promote entrepreneurship among young adult viewers in Egypt. We implemented a randomized controlled trial following a non-symmetric encouragement design and using cheap scalable incentives to measure the impact of the intervention. While the impact of the show appears otherwise more limited, we find that the good performance of female contestants improved viewers' general perceptions of female entrepreneurs and, in particular, men's. However, despite the apparent difficulties faced by women in setting up a business, the show also led viewers to think that discrimination against women was not as important as they had previously believed, highlighting the possible distorting effect of media content.

INTRODUCTION

Television is a powerful instrument of communication all around the world and is especially important in many developing countries where access to other means of communication, such as newspapers or the Internet, remains more limited. In 2015, 92% of households in the world owned a television set, while only 43.9% of the world population used the Internet according to the World Bank.¹

Television and, especially, mainstream programs have been shown to be important vectors of societal changes in various settings (see DellaVigna and La Ferrara (2015) for a review on the topic). Recent studies have shown that television or radio programs can have crucial long-term impacts on societies and, in particular, on gender-related norms. For instance, Jensen and Oster (2009) showed that the introduction of cable television in India was associated with an increase in women empowerment, materialized by a decrease in the reported acceptability of domestic violence towards women, an increase in women's autonomy, and a reduction in son preference. Similarly, Chong and La Ferrara (2009) found that the introduction of television increased the proportion of women who were either separated or divorced in Brazil. In the same context, La Ferrara et al. (2012) showed that it also induced a decrease in the fertility rate and provided evidence that this effect was partly driven by an increased exposure to telenovelas.

Therefore, television and, in particular, mainstream programs have been increasingly seen as potential public policy tools (La Ferrara, 2016). Hence, governments and non-profit organizations have tried to use the huge popularity of these programs to achieve goals of public policy interest by embedding educational content into entertaining programs, thus creating so-called “edutainment” programs (Singhal et al., 2003). The impact of these programs on viewers is believed to materialize through different but potentially concomitant channels. La Ferrara (2016) underlines three of them. First, these

shows can have an impact on viewers through the *information* they deliver; second, they can have an impact on the *preferences* of viewers by allowing them to observe the behavior of characters they can relate to;² third, they can have an impact on viewers by changing their *time allocation*, *i.e.* increasing the time they dedicate to watching TV and reducing the time they allocate to carrying out other activities (which, in turn, can have an impact on their information set and preferences).³

Still, evidence on the (positive or negative) impact of media programs specifically designed to reach a goal of public policy interest remain limited. Among the few existing studies, Bernard et al. (2014) analyzed the impact of inspirational documentaries showcasing the stories of people who had successfully started their own small business, and found that these videos had an important impact on aspiration-related outcomes when broadcast in rural communities in Ethiopia. In Tanzania, Bjorvatn et al. (2019) evaluated the impact of an edutainment entrepreneurship program targeting high school students and found that it increased interest in entrepreneurship in the short run, business creation in the long run, but reduced school investments. On a different topic, Berg and Zia (2017) found that in South Africa, educational messages on debt management embedded into the popular soap opera *Scandal!* increased viewers' knowledge on the subject and modified their borrowing behaviors. In Nigeria, Banerjee et al. (2019) evaluated the effects of MTV Shuga, an edutainment program focusing on HIV/AIDS prevention, and showed that it had important effects on HIV/AIDS-related knowledge as well as on sexual behaviors.⁴

In order to provide new evidence on this question, we evaluated the impact of an edutainment program specifically designed to promote entrepreneurship to young individuals and help tackle their high rate of unemployment in Egypt. The program, broadcast nation-wide, provided viewers with information about entrepreneurship and showcased successful young entrepreneurs. Broadcast for a period of three months starting in December 2013, the show consisted in 13 episodes involving 14 contestants, each episode putting contestants in front of a new challenge designed to test their entrepreneurial

skills. To reach its goals, educational content was disseminated in every episode amidst entertaining content, and contestants were recruited from various subgroups of the Egyptian population to ensure that viewers could relate with at least one of the contestants. Noticeably, female contestants performed particularly well throughout the show, the best of them ranking first and second. In turn, this allows us to investigate the impact of the show on viewers' beliefs related to female entrepreneurs.⁵

In order to measure the impact of the program, we carried out a randomized controlled trial using as our sample a broad subset of young Egyptians (aged between 18 and 35 years old) with some interest in entrepreneurship. In order to generate exogenous variation in respondents' exposure to the show, we used an encouragement design where half of the respondents were randomly selected to receive an encouragement to watch the show. This induced an exogenous variation in their exposure to the intervention depending on whether or not they received the encouragements. Our design differs from other experiments in this literature in two ways. First, we use cheap scalable encouragements (text messages) instead of expensive and/or salient incentives. Second, we do not encourage the control group to gain exposure to an alternative show. Data was collected on respondents' entrepreneurship-related perceptions and knowledge, professional aspirations and status 13 to 21 months after the end of the show.⁶

Our conclusions are twofold. First, while we cannot establish that the show had any impact on most outcomes, our results indicate that the show did manage to shift some general perceptions related to female entrepreneurs. In particular, this is true for male respondents who become less likely to report gender discriminatory beliefs when exposed to the intervention. Second, we also find evidence suggesting that the show may have distorted some perceptions held by viewers. We find that the show led them to believe that the level of gender discrimination against women is not as high as what they initially thought it would be. As discussed in more detail below, this result seems to be at odd with

the apparent difficulties faced by women when trying to start a business. This suggests that the content of media programs can have unintended effects on viewers and draws attention to their content and how they are perceived by the audience.

Our study contributes to two main strands of literature. First, it complements the burgeoning literature on the impact of the media (La Ferrara, 2016) as we provide evidence on the extent to which media programs can be used in the short run to achieve goals of public policy interest. In passing, our study also contributes to the methodological discussion on the design of field experiments in this area of research. While our experimental approach requires larger samples to obtain sufficient power, it has the advantages of measuring the impact of media programs in a context close to reality and of using inexpensive and scalable incentives only. This feature should be important to policymakers, especially because these interventions are likely to reach a very large population and, for obvious budgetary reasons, expensive incentives cannot be generalized.

Second, our study complements the literature on changing gender norms and, in particular, on those that limit women's employment – often considered as a leeway to greater autonomy and equality. A few interventions have already proved effective, ranging from providing information to female university students about their peers' aspirations to work (Aloud et al., 2020) to organizing classroom discussions on gender equality (Dhar et al., 2020) – see Jayachandran (2020) for a more in-depth review of the literature. In contrast to these studies, ours focuses on an easily scalable intervention that has a very low cost per person treated – privileges of media programs – and shows that it can be sufficient to change negative perceptions of women. However, like a two-edged sword, our study also provides evidence that poor media content has the potential to create or reinforce discriminatory beliefs against women.

The remainder of the article is organized as follows: in section I, we describe the intervention; in section II, we describe our empirical strategy; in section III, we detail our estimation strategy; in section IV, we provide a description of our data and sample; in section V, we present our study results; in section VI, we conclude.

I. INTERVENTION

The idea of fostering employment opportunities through the development of entrepreneurship has been very popular over the last few decades, especially in countries facing high underemployment and unemployment rates (e.g. Egypt and other MENA countries).

For a long time, these interventions have primarily aimed at alleviating traditional financial and human capital constraints, deemed critical for a firm to operate in a sustainable manner, yielding often mixed evidence. For instance, there is now a growing literature showing the rather weak impact of microcredit on economic activities (see Banerjee et al. (2015) for a review). The few evaluations of training programs designed to help individuals start a business have yielded mixed results in the short run and no long-term effects. Likewise, the impact of most training programs aiming to improve the profitability and survival rate of existing businesses has also proven relatively limited (McKenzie and Woodruff, 2013). However, more recent works have also highlighted the importance of modifying less tangible input factors, such as entrepreneurship-related perceptions, aspirations, and social norms, which are believed to have a great influence on individuals' decision to start a business or not (Campos et al., 2017; Batista and Seither, 2019).⁷

In this context, Bamyán Media⁸ produced an edutainment program called *El Mashroua* (“*The project*” in English). The show was specifically designed to promote entrepreneurship to young individuals in Egypt thanks to a mix of entertaining and educating content. The entertaining aspect of the show lied

in its format, a competition between 14 contestants. The show consisted in 13 one-hour episodes starting with a series of ten challenges (one challenge per episode) opposing two teams of contestants, which aimed at testing contestants' entrepreneurial skills – the worst performing contestant of the losing team being eliminated at the end of each episode. Members of the losing team had to vote to eliminate the teammate they thought had underperformed the most and should leave. Ultimately, the decision to eliminate a contestant fell to a panel of three judges⁹ based on their own opinion and the contestants' vote. In the last three episodes, the remaining three contestants presented their own business project in front of a panel of judges made up of successful entrepreneurs. Each finalist had to prove capable of applying everything they had learnt throughout the show.

The educational content was embedded in each of the episodes to provide viewers with information related to self-employment. Each challenge aimed to provide a different example of self-employed job (ranging from running a food stand to organizing sightseeing tours for tourists or cultural events) and to detail different aspects of these jobs that are particularly relevant to self-employment, such as planning, negotiating input prices, securing sales agreement, marketing products, etc. Moreover, key entrepreneurial skills were stressed throughout the show (such as planning, organizational or marketing skills, etc.), and core business concepts were also placed at the center of each episode (such as business plans, profits, advertising, customer satisfaction, etc.). This illustrated the complexity of running a self-employment activity. In that respect, viewers also benefitted from judges' constructive feedback on the contestants' performance at the end of each episode.¹⁰

Another key difference of the show with other similar reality TV shows is that it explicitly aimed to provide viewers with role models who consider self-employment as a desirable professional career option and are successful at it – for instance, see Bernard et al. (2014), Riley (2018), Batista and Seither (2019), and Porter and Serra (2020) for experiments showing that providing role models to individuals can be effective in changing behaviors. In order to ensure that viewers could relate to at

least some of the characters on the show, contestants were recruited from very different backgrounds in terms of gender, socio-economic status, region of origin, ethnic and religious groups. For instance, half of the contestants were women.¹¹

The first episode of the show aired nation-wide on December 21st, 2013 and an episode aired every Saturday evening from that day on until March 29th, 2014.¹² For the purpose of this research project, it is interesting to note that female contestants performed particularly well throughout the show, the best of them ranking first and second. This allows us to test the impact the show had on gender-related beliefs and, in particular, those related to self-employment.

II. EMPIRICAL STRATEGY

II.A Sampling strategy

Our sample is constituted of a broad subset of a very large population of young individuals (between 18 and 35 years old) in Egypt who have some interest in entrepreneurship. Indeed, a randomly generated set of mobile phone numbers^{13,14} was called to select a sample and collect baseline information from December 30th, 2013 to January 4th, 2014. In order to have a sample that was as representative as possible of the intervention's target group, only individuals who matched the following criteria were included: a/ be aged between 18 and 35; b/ watch TV at least from time to time; c/ express a general interest in starting a business. A sample of 5,924 individuals was constituted.¹⁵

These 5,924 respondents (referred to as "*prime* respondents" hereafter) were asked to provide the contact details of up to three of their friends meeting our inclusion criteria. In total, 3,855 prime respondents did not share any of their friends' contact details, 1,159 shared the contact details of one of their friends, 536 of two of their friends, and 374 of three of their friends. Hence, 3,353 additional

respondents (referred to as “*secondary* respondents” hereafter) were added to our sample, within which clusters of friends were created. In *Appendix A.3*, we show that respondents who named at least one friend are more likely to be male. They are also somewhat younger (-1.16 years), better educated, and wealthier. They are more likely to be employed but not more likely to be self-employed.

II.B Identification strategy

Approach

As the show was broadcast nation-wide on a channel available to all and there were naturally strong reasons to expect significant selection with respect to the type of individuals who would gain exposure to the intervention, we implemented a randomized controlled trial following an encouragement design to generate the counterfactual for our treatment group.¹⁶ Individuals were randomly allocated to either a treatment or a control group, differing only by the level of encouragement they received to gain exposure to the intervention.

In doing so, we fall in with a recent strand of the literature evaluating the impact of a specific media program by encouraging a random subset of a given population to gain exposure to the program. For instance, Bernard et al. (2014), Ravallion et al. (2015), and Banerjee et al. (2019) organized screening sessions in treatment villages. Alternatively, Berg and Zia (2017) and Bjorvatn et al. (2019) relied on contracts providing financial incentives to treatment respondents to increase their exposure to the show: subject to their answering correctly a questionnaire testing their knowledge of the show, respondents would receive a cash transfer.¹⁷ In such settings, the impact of the program is estimated on the set of individuals (referred to as “*compliers*” hereafter) who respond to the encouragements by gaining exposure to the program.

Our study design differs from previous RCTs of media programs in two ways. First, we chose to rely on cheap and easily scalable incentives (taking the form of simple text messages) to encourage treatment respondents to gain exposure to the intervention – while previous studies relied on more expensive and/or salient incentives. Our motives for doing so are that strong encouragements may have an effect of their own and may not be easy to replicate at a larger scale for obvious budgetary reasons. This is particularly problematic for the evaluation of media programs as their most salient feature lies precisely in their ability to reach a very large audience.

Second, we opted for a *non-symmetric* encouragement design in which the control group received no encouragement whatsoever – while previous experimental studies relied on a *symmetric* encouragement design in which the control group received some encouragements as well. For instance, control villages in Banerjee et al. (2019) and control respondents in Berg and Zia (2017) also received similar incentives to watch an alternative TV program. These symmetric designs estimate the impact of a program *conditional* on the control group listening or watching an alternative program and, as such, cannot capture the (potentially negative) consequences of an increase in the amount of time allocated to watching television or listening to the radio – see La Ferrara (2016) for a review of the evidence on the topic. Furthermore, the impact measured using a symmetric design is to some extent arbitrarily conditional on the choice of alternative program the control group is exposed to.

The drawback of this design is that light incentives have by construction a limited impact on respondents' take-up and, as a consequence, our design requires larger sample size to detect reasonable effects. The advantages of this design are that it allows the impact of a program to be measured under more real-world conditions and, in doing so, provides results that are directly relevant to policymakers.

Experimental design

Individuals included in the sample were randomized at the *individual* level after a stratification based on respondents' gender, whether they are a prime or a secondary respondent (in the latter case, whether the respondent was the first, second or third name provided was also taken into account), and whether or not an email address had been provided at baseline (a proxy for respondents' access to the Internet). In doing so, half of our respondents were selected to receive the encouragements and the other half were selected not to receive any encouragement.

Encouragements were provided in the form of text messages written in Arabic and sent to the phone of treatment respondents from the fifth episode¹⁸ (January 18th, 2014) onwards – at the price of 0.05 USD per text message. One or two text messages were sent every week to encourage *treatment* respondents to watch the TV show and browse the show's website until the 13th and final episode was broadcast on March 29th.¹⁹ A project timeline is available in *Appendix A.1*.

Advertisement in the form of text messages is common in Egypt and, as such, we do not believe the encouragements sent as part of the experiments were particularly salient to the respondents. Furthermore, as displayed in *Appendix A.2*, the content of the encouragements merely reminded treatment respondents of the date and time of the show, and only aimed to spark their interest by providing them with the main topic covered in the upcoming episode. In particular, encouragements did not contain any gender-related information. As such, we can rule out that the encouragements had any *direct* impact on the respondents – at least not on the set of outcomes on which we focus in this article.

II.C Focus of this study

In what follows, we estimate the impact of the intervention on the subset of 5,586 respondents who could not have been affected by any peer effect generated as part of our experiment – representing 4,610 prime respondents and 976 secondary respondents. This subset includes the following two groups of respondents: a) prime respondents who did not share the contact details of any of their friends at baseline; and b) prime and secondary respondents who did not have any friends receiving the encouragements.²⁰

Note that excluding secondary respondents from our sample generates results that do not fundamentally challenge our conclusions. Nor do these results appear to be affected by the fact that, because of our design and sampling strategy, the higher the number of friends initially reported by a respondent, the more likely it is that they are excluded from our sample (see *Appendix A.7*).

III. ESTIMATION STRATEGY

We estimate the following equation to measure the impact of the encouragements on outcome (y_i):

$$y_i = \alpha + aT_i + \varepsilon_i \quad (1)$$

$$y_i = \alpha + aT_i + \delta + X_i\beta + \varepsilon_i \quad (2)$$

In these equations, α is a constant, T_i is a dummy variable indicating whether or not individual i received the encouragements themselves, δ is a vector containing our strata fixed effects generated by interacting all stratifying variables (Bruhn & McKenzie, 2009), and X_i is a vector of baseline covariates selected, using a double-lasso procedure (Belloni et al., 2014), from the set of variables displayed in the left column of *Table 1* (with the exception of those already taken into account in the construction of the strata). The full set of covariates included in the double-lasso procedure and the

list of variables selected in the production of the main tables are reported in *Appendix A.8*. In both equations, parameter a is the parameter of interest and measures the average treatment effect.

When carrying out inference, individual outcomes are aggregated into indexes by families of outcomes so as to limit the number of statistical tests we carry out, and, when they are not, p-values are adjusted using the Holm-Bonferroni procedure to control the Family Wise Error Rate.²¹ This strategy allows us to limit the probability of making one or more false discoveries.

To better understand our main results, we also investigate the impact of the intervention on six subgroups of respondents: female and male respondents, highly and non-highly educated respondents, and respondents who had an established connection to entrepreneurship at baseline (prime respondents who reported being entrepreneurs or secondary respondents related to a prime respondent who reported being an entrepreneur) and the others. For each of these subgroups, we measure the impact of the intervention estimating the following equation:

$$y_i = \alpha + a (Group_{1,i} * T_i) + b (Group_{2,i} * T_i) + \gamma Group_{1,i} + \delta + X_i \beta + \varepsilon_i \quad (3)$$

In this equation, $Group_{1,i}$ and $Group_{2,i}$ dummy variables indicating whether respondent i belongs to the group 1 or group 2 (e.g. female and male respondents). Again, X_i is a vector of baseline covariates selected using a double-lasso procedure. When carrying subgroup analysis, we do not correct p-values to control for false discovery rate despite the increase in the number of statistical tests carried out – to make up for the reduction in sample size. As a consequence, although these results allow us to shed some interesting light on the impact of the intervention, they should be interpreted with greater caution.

Note that we restrict our analysis to the estimation of the above reduced forms providing Intent-To-Treat estimates. We do not report Local Average Treatment Effects on the group of compliers (measuring the impact of watching the show) due to the fact that we only have a very imperfect

measure of respondents' exposure to the show. Indeed, we show further down that both the overall take-up rate and differential take-up rate across treatment and control groups decrease over time, which suggests that the information collected on respondents' exposure to the intervention 13 to 21 months after the end of the broadcast underestimates their "true" level of exposure.

Finally, we cluster standard errors at the group of friends level to take into account possible correlation in outcome within friend groups.

IV. DATA COLLECTION AND SAMPLE DESCRIPTION

IV.A Data collection

From December 30th, 2013 to January 4th, 2014, baseline background information was collected over the phone on each prime respondent included in the study sample. In particular, baseline information was collected on their gender, age, governorate of residence, professional occupation, and highest level of education. Asset ownership data was also collected at baseline and used to calculate an asset ownership index based on which respondents were ranked and sub-divided into quartiles. Unfortunately, secondary respondents could not be contacted prior to the roll-out of the encouragements and only their age and gender could be obtained via their prime respondent. In what follows, secondary respondents' education is approximated by the education of the prime respondent they are connected with.

Stretching from April 30th, 2015 to January 31st, 2016, the endline survey was also carried out over the phone and was designed to gather different types of information.²² First, questions were asked about barriers to entrepreneurship. In particular, respondents were invited to assess the importance of eleven barriers to starting a business (such as the lack of funding or appropriate skills, or the complexity of the regulations, etc.). For each barrier, respondents were told to assess its importance

on a 1 to 10 scale (10 indicating “extremely preventive” barriers). Second, respondents were asked about their professional status, in particular whether or not they had taken any steps towards the creation of a business since January 2014 (month during which encouragements started being sent) and if they were self-employed at endline. Respondents were also questioned about their favorite professional career option in the present and 20 years from now (working as an employee in the *private* sector, as an employee in the *public* sector, as a self-employed person, or not working)²³ and whether or not they were still planning to start a business in the future. Third, respondents were asked about some more general beliefs related to entrepreneurship and/or gender equality, which allows us to investigate whether or not the show had any broader impact. A final set of questions were asked to measure respondents’ exposure to the encouragements and intervention.

In total, we were able to successfully survey 56.8% of the 5,586 respondents included in our sample as part of the endline survey, 16 to 24 months after the completion of the baseline survey – *i.e.* our attrition rate is 43.2%. Among the group of 3,171 respondents who could be surveyed at endline, 1,565 received the encouragements and 1,606 did not. Reassuringly, the attrition rate and the characteristics of those who leave the sample appear independent of respondents’ treatment status, as detailed in the first row of *Table 1*: coefficients are small and non-significant. However, we show in *Appendix A.4* that respondents who leave the sample (from both treatment and control groups) are different than those who remain. They are, for instance, more likely to be male, young and non-highly educated. As a robustness check, we use inverse probability weighting (IPW) in another specification to account for selective attrition. As displayed in *Appendix A.7*, IPW results are similar to those obtained from our main specifications, which are discussed below.

IV.B Sample description and balance checks

In *Table 1*, we describe the average baseline characteristics of the individuals included in our sample who were also surveyed at endline (3,171 respondents, *i.e.* 56.8% of the sample studied in this article).²⁴ Our sample is overwhelmingly constituted of young educated adult males: men represent 79.4% of the respondents reached at endline, the average age is 27 years old and, while only 2.9% of our respondents have no education at all, 22.0% have a higher education degree (hereafter referred to as “*highly educated*” respondents). In total, 98.1% of respondents declared that they owned a TV set and 91.3% declared that they had access to cable television, which largely confirms that respondents are to a very large extent exposed to mass media and had the means to gain exposure to the intervention. Finally, 15.3% of respondents were already self-employed at baseline.

As detailed in *Appendix A.3*, important differences are observed between our target group and the Egyptian population, given the specificities of our study's inclusion criteria: a/ being between 18 and 35 years old (the average is 27 years old in our sample); b/ watching television at least occasionally; c/ expressing a general interest in starting a business. In addition to the gender imbalance,²⁵ our respondents appear to be more educated than the Egyptian population as a whole, of whom only 24.7% have no education at all and only 11.6% have a higher education degree. In addition, 25.8% of our sample respondents live in one of the four governorates of Cairo, Alexandria, Port Said, and Suez, although these governorates represent only 17.7% of the total Egyptian population. As a result, people living in Lower or Upper Egypt are under-represented in our sample. However, asset ownership data suggest that our respondents' level of wealth is comparable to that of the average Egyptian.

As expected due to randomization, the characteristics of the individuals included in our sample are uncorrelated with whether or not they received the encouragements, as also displayed in *Table 1*.

Coefficients displayed in the *Balance checks* columns are obtained by estimating equation (1) using successively each of the baseline characteristics displayed in the left column of the table as the dependent variable. We do so using all observations for which baseline information are available. The point estimates associated with the treatment variables remain small and non-significant, suggesting again that respondents' treatment status is uncorrelated with their baseline characteristics.

IV.C Attitudes towards self-employment in Egypt

To understand the impact the show, we start by investigating the level of our key outcome variables at endline in the control group, *i.e.* the group of individuals who were not affected by the encouragements. We report these descriptive statistics in *Table 2*.

First, 25.4% of the respondents were self-employed at endline. This share is greater in our sample than it is for the overall population, presumably because our sample strategy excluded any individual who declared themselves uninterested in self-employment. Moreover, 19.4% of the respondents declared to have taken steps towards the creation of a business since January 2014.

Second, we find that young Egyptians do aspire to become self-employed, but generally in the long run rather than in the short run, where they prefer seeking employment in the public sector. Indeed, 38.9% of control respondents selected “self-employment” as the professional career option they would preferably choose for themselves now, almost 10 percentage points less than the share of respondents who preferred working in the public sector (48.0%), but significantly more than the share of those who chose working in the private sector (11.0%). This result is consistent with prior evidence on the relative attractiveness of public employment over other career options – presumably due to the stability and status it may offer (Said, 2011; Barsoum, 2015; Barsoum, 2016). Although the public sector seems more attractive *in the present*, self-employment was chosen as the preferred professional career option *20 years from now* by 54.5% of the respondents, well above any other career options.

This pattern is also consistent with prior evidence on the increased attractiveness of self-employment as a future professional career option (Sieverding, 2012).

Third, several barriers to business creation may explain why self-employment appears relatively less attractive to young Egyptians in the short-run. First, they have a very limited knowledge of the entrepreneurial environment in Egypt and, more specifically, of the organizations supporting entrepreneurs. Only 3.3% of control respondents knew of an organization providing mentoring services, 6.5% knew of an organization providing training services, and 19.5% of them knew of an organization providing financial services (such as a loan). Second, the lack of funding also appears as a significant barrier to starting a business. Complex government laws and respondents' lack of required skills are also reported to be important barriers but are only a distant second. So are negative perception by society and resistance to change, which are a distant third. In addition to required skills for entrepreneurship, access to language training, and technology are also of relative importance.

Finally, it is interesting to note for what comes next that important differences are observed across subgroups (descriptive statistics can be found in *Tables 4.b* and *5.b*). For instance, only 4.7% of the female respondents were self-employed at endline, as opposed to 30.6% of male respondents. It is interesting to note that this difference cannot be driven by differential interest in self-employment across gender in our sample as the share of respondents who declared having taken a step towards the creation of a business and aspiring to be self-employed now or 20 years from now are fairly similar across genders (respectively 16.1% vs. 20.2%, 32.5% vs. 39.9%, and 46.5% vs. 56.4%). Instead, this difference in respondents' self-employment status across genders is more likely to reflect the greater difficulties women face when attempting to start a business.

In a similar vein, it is also interesting to note that while 56.9% of control respondents strongly agreed that it is possible for women to successfully run a business, this share rises to 84.2% among female

respondents and drops to 50.1% among male respondents. In comparison, 60.8% of control respondents strongly agreed that it is possible for individuals without a higher education to successfully run their own business and 49.4% that it is possible for individuals who do not have wealthy parents to successfully run their own business, and those shares are similar for female and male respondents. These patterns highlight the discriminatory beliefs men hold against women in relation to the labor market.

V. RESULTS

We now turn to the impact of the intervention using the strategy described in section III. As a preliminary step, we investigate the effect of receiving the encouragements on respondents' exposure to the show. Then, we study whether the show had any impact on respondents' perceived and actual barriers to entrepreneurship, professional status and aspirations. Finally, we evaluate the impact of the show on viewers' more general beliefs.

The estimates obtained by estimating equation (1) are reported in *Panel A* and those obtained by estimating equation (2) are presented in *Panel B*. As the two sets of results are very similar, we only comment on those presented in *Panel B*.

V.A Take-up rate

As a preliminary step, we investigate the impact of the encouragements on the differential degree of exposure to the show of respondents across treatment and control groups.

In columns *A* to *H* of *Table 3a*, we report the impact of the encouragements on a range of indicators describing respondents' exposure to the intervention. Results suggest that receiving the encouragements increased respondents' overall exposure rate by 5.7 percentage points (column *B*).

This rate is defined as the probability of a respondent having watched at least one episode, visited *El Mashroua*'s website at least once, followed one of their social media, or attended at least one of their events. This represents a 65% increase compared to the exposure rate of the control group. This differential overall exposure rate is almost entirely driven by the effect the encouragements had on the probability of having watched the show at least once – and not by the effect they had on the share of respondents who visited *El Mashroua*'s website at least once, followed one of their social media, or attended at least one of their events. While 8.2% of control respondents declared that they had watched at least one episode of the show, encouragements increased this probability by 5.0 percentage points.²⁶

While the differential exposure rate across groups appears relatively small, evidence suggest that it is significantly underestimated due to recall bias, given the important time gap between the end of the broadcasting of the show and the moment when endline data was collected (13 to 21 months after). To investigate this issue, we exploit the fact that a small random subset of 331 respondents were called 7 months after the end of the show to investigate the impact of the encouragements on their degree of exposure to it. Of these 331 respondents, 175 were actually reached and interviewed. Although the point estimate is not statistically significant given the small size of the sample (the unadjusted p-value is of 0.102), the magnitude of the effect is almost twice as large as the one measured at endline (column *H*), *i.e.* 9.9 vs 5.7 percentage points. As a consequence, we can reasonably assume that the actual differential take-up rate would have been even larger had it been measured right when the show ended.

We assess the robustness of our first-stage estimates by carrying out a placebo test which investigates whether the encouragements had any impact on respondents' exposure to an alternative show – *The Voice*, which was broadcast around the same time as *El Mashroua* – and find no impact. In order to do so, respondents were asked to answer the exact same set of exposure-related questions about *El*

Mashroua and the alternative show (questions were asked about the placebo show first, and then about *El Mashroua*). As displayed in *Appendix A.6*, we find no difference between treatment and control respondents' exposure to the alternative show in any of the dimensions investigated.

Finally, we investigate the effect of the encouragements on the differential level of exposure to the show across treatment and control respondents in six subgroups of respondents: female and male respondents, highly and non-highly educated respondents, and respondents with an established connection to entrepreneurship at baseline and the others (displayed in *Table 3b*). We find some differences in the groups' counterfactual level of exposure to the show (it is particularly high for female respondents) but limited differences in the impact of the encouragements on their exposure rate.

V.B Impact of the show on main outcomes

Impact on barriers, status, and aspirations related to entrepreneurship

We then turn to the impact of the show on respondents' perceived and actual barriers to entrepreneurship, professional status and aspirations.

In *Table 4a*, we report the impact of the TV show on these outcomes. We first present the results on viewers' perceived barriers to self-employment (column *A*), measured with an index capturing respondents' average perception of eleven barriers (including the lack of funding or appropriate skills, the complexity of the regulations, etc.).²⁷ Second, we test the effect of the show on respondents' entrepreneurship-related knowledge (column *B*) using an index aggregating respondents' knowledge of different features of the Egyptian entrepreneurial environment. The impact of the show on each individual item is reported in *Appendix A.5*. Third, we investigate the impact on respondents' likelihood of declaring themselves as self-employed at endline (column *C*) and of having taken any

steps towards the creation of a business since January 2014 (column *D*). Finally, we measure the impact of the show on professional aspirations as captured by the probability for respondents to choose “working as a self-employed person” as their favorite professional career option in the present (column *E*) and 20 years from now (column *F*). The last four outcomes are gathered into a family of outcomes.

Based on our results, we cannot establish that the show had any large impact on viewers’ perceived and actual barriers to entrepreneurship. As a consequence, it is not surprising that no impact is found either on respondents’ professional status and aspirations. Overall, none of the coefficients is statistically significant at the 5% level. However, given the limited strength of our first-stage coefficient, one should remain cautious when interpreting our insignificant results. Given our (potentially) limited statistical power, we cannot conclude that the effect of the intervention on non-significant outcomes is precisely zero but rather that large effects of the intervention could not be found.

However, looking more specifically at the impact of the show on individual perceived barriers, we find that it had a strong effect on respondents’ perceived importance of gender discrimination as a barrier to starting a business. Being encouraged to watch the show reduced by 0.034 the perceived importance of gender discrimination as a barrier to starting a business (at the mean, this represents a 7.0% increase).^{28,29} The coefficient remains statistically significant at the 1% level even after its p-value has been adjusted to control the Family Wise Error Rate – and would remain so under more severe p-value corrections. This result suggests that the content of the show led viewers to believe that starting a business is easier for women than initially expected.

This result appears somewhat surprising in light of the apparent difficulties women face when attempting to start a business, as already highlighted in section IV.C. In fact, legal differences between

men and women's access to economic opportunities in Egypt were among the most important in the world and showed no sign of improvement in 2013 – as displayed in *Appendix A.9*. A possible explanation for this result may be that the show did not convey a representative image of what is like for women to start a business – something which may have conflicted with its objective to entertain its audience. As a consequence, our results raise the general questions of whether or not edutainment distorts some of the viewers' perceptions, and, if so, to what extent.

In *Table 4b*, we investigate the heterogeneity of the intervention's impact across our six subsets of respondents and find several interesting patterns. First, we find that the impact on respondents' perception of the importance of gender discrimination as a barrier to starting a business are particularly convincing for male and non-highly educated respondents, two groups which reported more discriminatory beliefs against women – this is the case for males but also, although to a lesser extent, for non-highly educated individuals. The effect is also particularly strong among respondents who had no connection to entrepreneurship at baseline, which presumably is the group who knew the least about it. Still, note that while their point estimates are larger in magnitude and statistically significant at a considerably smaller level than those of their complement, they are not always statistically different from one another. Second, although we do not find any effect of the intervention on knowledge-related outcomes on the whole sample, we actually observe that the show seems to have increased the knowledge of non-highly educated respondents, the subset of respondents who had the least amount of information at baseline. In turn, this suggests that although the educational content of the show may have been weak, it was not null and that the least informed subset of the population did benefit from it.³⁰

Impact on general beliefs

We evaluate the impact of the show on viewers' more general beliefs. In particular, we take advantage of the fact that female contestants performed particularly well throughout the show (the best of them ranking first and second) to investigate whether or not the show had any impact on viewers' perceptions of female entrepreneurs, as well as on broader gender-related beliefs.

In *Table 5a*, we report the impact of the TV show on these outcomes. We first present the results on the share of respondents who strongly agreed with different statements related to self-employment testing respondents' beliefs in 1) women's ability to be successful at running a business, 2) the importance of being wealthy to be successful at running a business, and 3) the importance of being highly educated to be successful at running a business. Then, we take advantage of the good performance of female contestants throughout the show to investigate 4) whether the intervention triggered broader changes in respondents' gender-related beliefs and 5) whether or not it reduced the share of respondents strongly supporting the idea that men might have more rights than women to a job or to receive a higher education.

We find that being exposed to the show increased by 5.3 percentage points the share of respondents who reported strongly agreeing that it is possible for women to successfully run their own business (statistically significant at the 1% level even after its p-value has been adjusted to control the Family Wise Error Rate) – again, this coefficient would remain statistically significant at the 1% level under more severe p-value corrections. This suggests that the show had a large effect on respondents' beliefs related to women's ability to run a business (column A).³¹ We also find suggestive evidence that receiving the encouragements increased (by 3.3 percentage points) the share of respondents who reported strongly agreeing that it is possible for non-wealthy individuals to successfully run their own

business (column *C*), although the adjusted p-value is only at 12.6%. However, we cannot find any statistically significant effect on any of the other outcomes.

Part of the differences in the results observed in columns *A*, *B*, and *C* may find an explanation in the nature of the information provided to the viewers on each of the contestants, as well as in the fact that not all groups of candidates performed equally well throughout the show (because of this, they were not necessarily seen as equally successful at starting their own business by the viewers). First, while candidates' gender was obviously a salient feature, their level of education was not. Second, while the production company made it clear to the viewers that some candidates came from a disadvantaged background, their performance was a bit more contrasted than those of the female contestants. However, if some of these contestants were eliminated early, one became particularly popular among viewers and made it to the semi-finals.³² This may explain why we are close to finding a statistically significant increase in the share of respondents who strongly agree that it is possible for individuals from a poor background to be successful at running a business.

As displayed in *Table 5b*, the effects of the show on gender-related outcomes again appear particularly convincing on men and non-highly educated respondents – again, the two subsets of respondents with the most discriminatory beliefs against women – but are null on women (coefficients are closer to 0 and not statistically significant). Again, the effect is also particularly strong among respondents who had no connection to entrepreneurship at baseline. Note that, again, while their point estimates are larger in magnitude and statistically significant at a considerably smaller level than those of their complement, they are not always statistically different. Still, these results suggest that being exposed to successful female entrepreneurs led individuals to learn and revise their discriminatory beliefs against women.

VI. CONCLUSION

In this article, we measure the impact of an edutainment program designed to promote entrepreneurship among young adult viewers and broadcast on a popular cable channel in Egypt using a randomized controlled trial following a non-symmetric encouragement design relying on cheap scalable incentives. We measure the impact of the show on respondents' entrepreneurship-related perceptions and knowledge, professional aspirations and status. We reach several conclusions.

First, we show that the program did not have any large overall impact on respondents' aspirations towards entrepreneurship, knowledge about the business environment, or on the likelihood that respondents would take any steps towards the creation of a business. Still, we find evidence suggesting that the show did manage to convey educational content to some of its viewers. Indeed, we observe that the show seems to have increased the knowledge of non-highly educated respondents, the subset of respondents who had the least amount of entrepreneurship-related information at baseline.

Second, we find that the show had an impact on viewers' beliefs related to female entrepreneurs. Indeed, we find that the good performance of female contestants throughout the show increased the share of viewers who reported strongly agreeing that it is possible for women to successfully run their own business. More generally, we show that the content of the show managed to correct some detrimental beliefs held by some subsets of the population against women. This seems to be especially true for male respondents, who are less likely to report gender discriminatory beliefs in relation to self-employment when exposed to the intervention. In line with previous studies showing how effective media programs can be at shifting gender norms, our results suggest that television programs can be successful at fighting prejudice.

Third, we find suggestive evidence that the show may have distorted some of viewers' perceptions related to self-employment. As described earlier, we find that the show led viewers to believe that the level of gender discrimination against women is not as high as what they initially thought it would be. In light of the apparent greater difficulties women face when attempting to start a business, these results appear somewhat surprising. This draws attention to the content of edutainment programs, the messages they convey and, eventually, the potential negative impact those programs may have on viewers by combining educational and entertainment content, and blurring the line between fiction and reality.

¹ World Development Indicators' information society data for the year 2015.

² This falls in with Bandura's Social Learning Theory (1977) according to which viewers are influenced by observing the behaviors of models and the consequences of their actions.

³ DellaVigna and Gentzkow (2010) see the first two channels as being part of a broader category of "persuasion effects", which can be further fostered when shows appeal to viewers' emotions (Lewin, 1951).

⁴ In a completely different setting, Kearney and Levine (2019) studied the impact of Sesame Street, an edutainment program introduced in 1969 in the US with the explicit goal of preparing preschool-age children for school entry, and found that it improved school readiness.

⁵ As further discussed below, Egypt is a particularly interesting setting in which to gather additional evidence on some of the questions raised above. First, as in many developing countries, the place of television is particularly important in Egypt: 97% of Egyptian households owned at least one television set in 2011 (World Bank, 2014) and 40% watched television more than four hours a day (PwC, 2012). Second, Egypt also exhibits large gender inequalities which are particularly visible on the labor market where the unemployment rate among young female actives aged between 15 and 24 years peaked at 61.3% in 2013, when it leveled at 33.7% for males (ILO, 2013).

⁶ Initially, the study also aimed to examine the influence of social interactions on the effects of the program. To do so, a subset of respondents' friends meeting the same inclusion criteria (*i.e.* young and interested in self-employment) was included in our sample. Within this group of friends, a random subset was randomly selected to receive the same encouragements. The objective was to induce an exogenous variation in their own and their friends' exposure to the intervention depending on whether or not they, their friend(s), or both received the encouragements. We will attempt to measure the intervention's *indirect* effect which may arise from potential peer effects across respondents within groups of friends in a separate study. In this article, we analyze the *direct* effect of the intervention by focusing on the subgroup of respondents for whom no peer effect was generated as part of the study.

⁷ Campos et al. (2017) studied the impact of a psychology-based training program targeting small business owners that develops key behaviors associated with a pro-active entrepreneurial mindset and found that it was more effective at increasing firms' profit than a traditional entrepreneurship-training program.

⁸ Bamyán Media is a social enterprise created in 2010. Its goal is to create edutainments that "create riveting and compelling content that can spark social movements to improve lives and communities."

⁹ Two of which stayed on throughout the whole TV show, the remaining one being a celebrity guest judge who changed from episode to episode.

¹⁰ El Mashroua was also particularly active on social medias, creating one of the largest digital platform dedicated to potential entrepreneurs in the MENA region. In parallel to the show, support activities were also carried out so as to create a bridge between the show and the real world, and boost business creation. Indeed, their goal was to provide viewers with the support they might need if they were to take the plunge and attempt to start a business: networking events were held in collaboration with partner organizations delivering advanced entrepreneurship training, mentorship, or financial services throughout the country, and a website was launched providing information on the show and these partner organizations.

¹¹ Because the show was conceived as a competition, it is important to stress that not all candidates or groups of candidates were necessarily seen as equally successful at starting their own business by the viewers.

¹² With the exception of the 6th episode, originally scheduled to air on January 21st, which was postponed to the following week due to the multiple bombings which happened on that day in Egypt and received extensive coverage from the channel on which *El-Mashroua* was broadcast.

¹³ According to the Demographic and Health Survey, over 90% of Egyptian households owned a cell phone in 2014 and, according to the International Telecommunication Union's World Telecommunication/ICT Development Report and database, there were 114 mobile cellular subscriptions per 100 inhabitants in Egypt in 2014.

The database is available on the following webpage: <http://data.worldbank.org/indicator/IT.CEL.SETS.P2> (accessed in March 2020).

¹⁴ Because of this, we are more likely to have sampled households which have more than one mobile subscription. However, the concern on the representativeness of the sample is probably limited.

¹⁵ In order to come up with this sample, 39,830 different mobile numbers were called. Out of these numbers, 27.82% were categorized as "non-working", the owners of 25.73% of these mobile were found not to meet all of the study's inclusion criteria, 15.79% refused to talk to the surveyors, and 15.66% could not be reached.

¹⁶ Quasi-experimental studies usually opt for an alternative strategy which consist in finding an exogenous source of variation in the probability for individuals to be exposed to mass media programs. The comparison group is then constituted by the individuals who could have been exposed to these programs but were not (by random chance). Several studies, such as Jensen and Oster (2009), Olken (2009), Chong and La Ferrara (2009), La Ferrara et al. (2012), and Farré and Fasani (2013), rely for example on variations in signal reception, which is presumably exogenous in their context, to identify the impact of exposure to television programs.

¹⁷ Another example is Palluck and Green (2009) who exposed Rwandan villagers to a radio program aimed at discouraging blind obedience and reliance on directions from the authorities following the genocide. They did so by sending research assistants to treatment villages where they played four 20-minute episodes on a portable stereo each month.

¹⁸ Unfortunately, the collection of the baseline survey encountered several delays and was only finalized at the beginning of January 2014, which meant that encouragements could only be sent from the fifth episode onwards. However, we do not believe that it could be driving the baseline statistics found and that the associated risks for the study are somewhat limited. First, as discussed below, the share of respondents who had watched the show at baseline is probably too small for it to explain the patterns found using baseline data, *e.g.* gender differences in the share of respondents who strongly believe that it is possible for women to start a business. If this is the case, the bias is likely to be limited and, if it exists, its most likely consequence (given the content of the intervention and the effects

highlighted in the paper) is an overestimation of respondents' background knowledge and general and gender-specific opinions related to self-employment in Egypt.

¹⁹ In order to make up for the late start and further increase the differential take-up rate across the groups, we provided additional encouragements during the month following the end of the TV show: treatment respondents were all called and encouraged to watch the show's episodes online and to take a quiz testing their knowledge of the show. However, the number of individuals who completed the quiz being low, we do not believe that the encouragements provided after the end of the show had much of an impact on respondents' rate of exposure to the show. Indeed, less than 50 individuals completed that quiz, despite the fact that it was broadly advertised on the show's social media accounts, in addition to being advertised to the individuals included in the sample.

²⁰ See endnote 6.

²¹ With the Holm-Bonferroni method, the adjusted p-value for the outcome with the i 's smallest unadjusted p-value is given by: $\hat{p}_{(i)} = \max_{j \leq i} \{(m - j + 1)p_{(j)}\}$, where m is the number of outcomes in the family of outcomes considered, $p_{(j)}$ is the unadjusted p-value associated with the outcome with the j 's smallest unadjusted p-values, and $\{x\}_1 \equiv \min\{x, 1\}$. Hypotheses are rejected as long as adjusted p-values remain inferior to the chosen significance level. In doing so, the Holm-Bonferroni method allows one to bound the probability of rejecting at least one true hypothesis (type 1 error rate) below 5%. See Westfall and Young (1993) for more information.

²² In total, the completion of the endline questionnaire took between 15 and 20 minutes.

²³ As a first step towards measuring their aspirations, respondents were asked to rank these options based on how frequent they were among their family in order to limit possible social desirability and/or anchoring biases (Bernard and Taffesse, 2014). As a second step, respondents were then asked to rank the same options according to what they would like best for themselves *presently*, and, finally, according to what they would like best for themselves *20 years from now*.

²⁴ As mentioned in the previous subsection, the 597 secondary respondents included in our sample could not be contacted prior to the roll-out of the encouragements and only their age and gender could be obtained via their prime respondent.

²⁵ Our inclusion criteria may provide a first explanation for the over-representation of men in our sample. Indeed, women appear to be less interested in entrepreneurship than men according to the 2009 Survey of Young People in Egypt. However, qualitative evidence gathered throughout the project also suggests that women were significantly more difficult to survey over the phone than men. Our inclusion criteria may provide the main explanation for the over-representation of men in our sample: 79.4% males vs. 20.6% females – representing a 3.85 male-to-female ratio. Indeed, according to the 2009 Survey of Young People in Egypt, women would be less interested in entrepreneurship than men. Comparing females' and males' answer to survey question “225) Did you think/have you thought/ tried to establish your own business?” they found that “a very low proportion of young people showed interest in entrepreneurship or having their own business. Entrepreneurship is lowest among female young people, where only 8% noted that they have ever considered starting their own business. Among male young people, the incidence increases to 23%” – representing 2.875 ratio.” This alone would explain 75% of the male-to-female ratio imbalance found in our sample. Second, having discussed the matter with our surveyors, it seems that women were significantly more difficult to survey over the phone than men, especially since interviewer-respondent gender matching could not always be guaranteed at baseline.

²⁶ Receiving the encouragements also had an impact on the number of episodes watched across groups, however the effect is entirely driven by the fact that the encouragements led a greater share of treatment respondents to watch the show (the extensive margin). In turn, this also suggests that the show may have had some problems retaining viewers: conditional on having watched at least one episode of the show, the average number of episodes watched is 3.21, and no difference can be found across groups (the intensive margin).

²⁷ The eleven barriers to self-employment respondents were asked about are the following ones: 1) lack of required skills; 2) lack of access to funding; 3) lack of access to information; 4) lack of access to foreign language training; 5) lack of access to technology; 6) complicated government laws; 7) rough competition among entrepreneurs; 8) fear of failure; 9) negative perception by society; 10) resistance to change; 11) and discrimination based on gender.

²⁸ Calculation of the ITT from the differential take-up rate measured 7 months after the end of the program suggests that watching the program reduces the perceived importance of gender discrimination as a barrier to starting a business by 0.35.

²⁹ While the interpretation of the latter outcome may appear ambiguous, there is no reason to believe that the show had any impact on viewers' perception of the level of discrimination faced by men when attempting to start a business. Therefore, given the good performance of female contestants throughout the show, we interpret this result as an indication that the show led viewers to revise downward their perception of the level of discrimination faced by women when attempting to start a business.

³⁰ We also observe that the show may have discouraged women and respondents who had no connection to entrepreneurship at baseline from taking steps towards the creation of a business. Given that the show did not have any effect on their aspirations to become entrepreneurs (point estimates are in fact positive), it is possible that it led them to approach entrepreneurship with more caution and to delay their taking any action towards the creation of a business.

³¹ For instance, the LATE implied by both the differential take-up rate measured 7 months after the end of the show (10.0 ppt) and the ITT (5.3 ppt) is as large as 0.53. Although the associated confidence interval is large [0.20; 0.86], these results suggest that a very large proportion of the compliers strongly agreed with the assertion that women are capable of successfully running a business.

³² Writing on the show, the elimination of the contestant, the Irish Times reported: “It was amazing to see the tears shed when one of the great underdogs of the series, the T-shirt seller Mido, crashed out near the semi-finals after smashing all expectations and going all the way.”

The article is available on the following webpage: <https://www.irishtimes.com/news/world/africa/reality-tv-as-a-power-for-good-on-screen-in-egypt-1.2256423> (accessed in March 2020).

ACKNOWLEDGEMENTS

This work was supported by the International Initiative for Impact Evaluation [PW3.01.EG.IE], the International Labor Organization, and Silatech. In particular, we would like to thank 3ie and the ILO for technical review and support throughout the study. The draft was not reviewed by 3ie, the ILO, or Silatech, and only represents the views of the authors. We would like to thank J-PAL Europe for its support throughout the entire duration of the project and J-PAL for the replication they have conducted on the paper (as part of the pre-publication replication project). We are thankful to seminar participants at Aarhus University, INSEAD, Wageningen University, Northwestern University, the 2017 ERF conference, the 2017 ASSA annual meeting, and the 13th Labor Market Policy Evaluation IZA Conference for their helpful comments. Ibrahim Kamel, Nihal Said, Rana Khazbak, Sarah Samaha, and Todor Tochev provided excellent research assistance. The study received IRB approval from the Paris School of Economics (CE/2013-008) and can be found in the AEA RCT Registry (AEARCTR-0000370).

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TABLES

Table 1: Sample description and balance checks

Variables	<i>Surveyed at endline</i>					
	<i>Sample description</i>			<i>Balance checks</i>		
	N	Mean	Sd	Coeff.	P-value	Sig.
Attrition	5,586	0.432	0.495	0.016	0.236	
Male	3,171	0.795	0.404	-0.010	0.507	
Age	2,669	27.383	4.770	0.055	0.774	
Email address shared	3,171	0.167	0.373	-0.014	0.295	
Prime respondent	3,171	0.812	0.391	0.007	0.610	
Nber of friends in cluster	3,171	0.492	0.786	0.001	0.968	
Schooling level						
Never went to school	3,171	0.029	0.167	-0.009	0.142	
Primary school	3,171	0.110	0.313	0.012	0.267	
Secondary education	3,171	0.316	0.465	-0.008	0.644	
Higher education	3,171	0.220	0.414	-0.004	0.763	
Missing	3,171	0.325	0.469	0.008	0.607	
Status						
Employee	3,171	0.240	0.427	0.020	0.183	
Self-employed	3,171	0.153	0.360	-0.007	0.562	
Unemployed	3,171	0.134	0.340	-0.002	0.896	
Student	3,171	0.045	0.208	-0.012	0.100	
Home duties	3,171	0.071	0.257	-0.008	0.404	
Other	3,171	0.033	0.180	-0.002	0.795	
Missing	3,171	0.324	0.468	0.010	0.530	
Location						
Urban Gov.	3,171	0.174	0.380	-0.002	0.857	
Lower Egypt	3,171	0.260	0.439	-0.021	0.175	
Upper Egypt	3,171	0.229	0.420	0.014	0.366	
Frontier Gov.	3,171	0.013	0.113	0.000	0.941	
Missing	3,171	0.324	0.468	0.010	0.530	
Wealth						
Overall index	2,133	0.012	0.416	0.027	0.141	
Television	2,142	0.981	0.137	-0.002	0.772	
Satellite	2,141	0.913	0.282	0.001	0.924	

Notes: In the table, we provide the average characteristics of the respondents who completed the endline questionnaire and test whether the attrition induced any imbalance between groups of respondents. In order to do so, equation (1) is estimated for each variable displayed in the left column. Information are missing for the 597 secondary respondents included in our sample as they could not be contacted prior to the roll-out of the encouragements (only their age and gender could be obtained via their prime respondent). Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 2: Self-employment in Egypt

	Variables	N	Mean
Prof. status	Share of respondents who:		
	Are self-employed	1,601	0.254
	Have taken any steps towards the creation of a business	1,603	0.194
Professional aspirations	Share of respondents choosing the following option as their favourite professional career option for themselves now:		
	Being self-employed	1,572	0.384
	Being an employee in the private sector	1,572	0.111
	Being an employee in the public sector	1,572	0.484
	Share of respondents choosing the following option as their favourite professional career option for themselves in 20 years from now:		
	Being self-employed	1,314	0.545
	Being an employee in the private sector	1,314	0.060
	Being an employee in the public sector	1,314	0.349
Perceived barriers:	Importance of the following barriers to self-employment on a 0 to 1 scale:		
	Lack of required skills	1,568	0.624
	No access to funding	1,578	0.820
	Lack of access to information	1,537	0.491
	Lack of access to foreign language training	1,510	0.513
	Barriers, Lack of access to technology	1,531	0.501
	Complicated laws	1,492	0.634
	Tough Competition	1,556	0.471
	Fear of failure	1,572	0.601
	Negative perception by society	1,513	0.586
	Resistance to change	1,532	0.569
	Discrimination based on gender	1,536	0.488
Actual barriers: knowledge	Share of respondents knowing an organization providing:		
	Mentoring services	1,604	0.034
	Financial services	1,603	0.184
	Training services	1,604	0.064
General beliefs	Share of respondents strongly agreeing with the following statements		
	In Egypt, it is possible for women to successfully run their own business	1,606	0.569
	In Egypt, it is possible for individuals without a higher education to successfully run their own business	1,606	0.608
	In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	1,606	0.494
	In Egypt, when jobs are scarce, men should have more rights to a job than women	1,606	0.702
	In Egypt, a university education is more important for a boy than for a girl	1,606	0.187

Notes: In this table, we provide the mean of our different outcome variables at endline in the control group.

Table 3.a: Take-up rate, El Mashroua

	<i>Exposure to El Mashroua</i>							<i>Measured</i>
	<i>Measured</i> <i>13-24 months</i> <i>after</i>							<i>7 months</i> <i>after</i>
	A.	B.	C.	D.	E.	F.	G.	H.
	Heard of the show	Overall take-up rate	Watched the show	Number of episodes watched	Visited the show's website	Followed show's social media	Attended show's events	Overall take- up rate
<i>Panel A: Without strata dummies or covariates</i>								
Encouragements	0.163*** (0.017)	0.058*** (0.011)	0.052*** (0.011)	0.122*** (0.033)	0.014*** (0.004)	0.011** (0.005)	-0.001 (0.001)	0.110* (0.062)
P-value (unadj.)	0.000	0.000	0.000	0.000	0.000	0.020	0.317	0.076
P-value (adj.)	0.000	0.000	0.000	0.000	0.000	0.040	0.317	0.076
<i>Panel B: With strata dummies and possible covariates selected by double-lasso procedure</i>								
Encouragements	0.167*** (0.016)	0.057*** (0.011)	0.052*** (0.011)	0.121*** (0.032)	0.013*** (0.004)	0.011** (0.005)	-0.001 (0.001)	0.099 (0.060)
P-value (unadj.)	0.000	0.000	0.000	0.000	0.000	0.018	0.317	0.102
P-value (adj.)	0.000	0.000	0.000	0.000	0.000	0.036	0.317	0.102
Sample size	3,166	3,167	3,166	3,078	3,165	3,167	3,165	175
Control mean	0.247	0.088	0.082	0.170	0.003	0.011	0.000	0.157

Notes: In this table, we describe the average treatment effect of the encouragements on respondents' level of exposure to the intervention at endline (13-24 months after the end of the show), as well as the one measured during a short follow-up survey carried out on a small subset of respondents 7 months after the end of the show. In order to do so, we estimate equations (1) (Panel A) and (2) (Panel B) for each of the measure of exposure displayed in top row of the table. P-values are adjusted to control for Family Wise Error Rate. The 1st family of outcomes is constituted of the outcomes displayed in columns A to G; and the 2nd family is constituted of the last outcome displayed in column H. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 3.b: Take-up rate heterogeneity, El Mashroua

<i>Overall exposure rate to El Mashroua</i>			
	A. Gender	B. Education	C. Employment
G1: Females	0.065** (0.031)		
	0.036		
G2: Males	0.055*** (0.012)		
	0.000		
G1: Low educ.		0.054*** (0.015)	
		0.000	
G2: Hig. educ.		0.091*** (0.025)	
		0.000	
G1: No link to se			0.058*** (0.013)
			0.000
G2: Link to se			0.057** (0.023)
			0.015
Testing G1=G2:			
Chi2-Stat	0.104	1.650	0.002
P-value	0.747	0.199	0.968
Observations	3,167	2,668	3,167
Control mean (G1)	0.165	0.080	0.094
Control mean (G2)	0.069	0.113	0.064

Notes: In this table, we describe the average treatment effect of the encouragements on respondents' level of exposure to the intervention by subgroups of respondents. In order to do so, we estimate equation (3) for each pair of subgroups using as a dependent variable the overall take-up variable. P-values are not adjusted to control for Family Wise Error Rate. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 4.a: Impact on respondents' perceptions, status and aspirations related to self-employment

Variables	Barriers			Professional status and aspirations			
	A.	A.1	B.	C.	D.	E.	F.
	Perceived barriers index	<i>including: B.11 Gender discrimination</i>	Knowledge index	Self-employed	Any steps taken towards the creation of a business?	Aspire to be self-employed now	Aspire to be self-employed in 20 years from now
Panel A: Without strata dummies or covariates							
Encouragements	-0.002 (0.006)	-0.035*** (0.011)	0.006 (0.007)	-0.009 (0.015)	-0.024 (0.014)	0.022 (0.018)	0.024 (0.020)
P-value (unadj.)	0.709	0.001	0.361	0.565	0.081	0.209	0.219
P-value (adj.)		0.004		0.627	0.324	0.627	0.627
Panel B: With strata dummies and possible covariates selected by double-lasso procedure							
Encouragements	-0.003 (0.006)	-0.034*** (0.011)	0.007 (0.007)	-0.009 (0.015)	-0.023 (0.014)	0.022 (0.017)	0.028 (0.020)
P-value (unadj.)	0.641	0.002	0.293	0.560	0.090	0.199	0.152
P-value (adj.)		0.008		0.560	0.360	0.456	0.456
Sample size	2,577	3,028	3,163	3,158	3,166	3,110	2,570
Control mean	0.573	0.488	0.094	0.254	0.194	0.384	0.545

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceived and actual barriers to self-employment, as well as on their professional aspirations and status. In column A. , we report on the impact of the intervention on an index capturing respondents' average perceived importance of eleven barriers to entrepreneurship - two of which are displayed in columns A.1 and A.2 . In column B. , we report on the impact of the intervention on an index capturing respondents' entrepreneurship-related knowledge. For both indexes, results found on each individual item used in their construction can be found in Table A.5 placed in the appendix. In order to do so, we estimate equations (1) (Panel A) and (2) (Panel B) for each of the dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values displayed in columns A.1 , A.2 , C. , D. , E. , and F. are corrected at the family of outcomes level using the Holm-Bonferroni method. The variable displayed in column A.1 is part of a family of outcomes reporting on economic barriers to entrepreneurship and includes one other barriers: complicated laws. The variable displayed in column A.2 is part of a family of outcomes reporting on societal barriers to entrepreneurship and includes three other barriers: fear of failure, negative perception by the society, and resistance to change. Outcomes displayed in columns C. , D. , E. , and F. constitute one single family of outcomes. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 4.b: Impact on respondents' perceptions, status and aspirations related to self-employment (heterogeneity analysis)

Variables	Barriers			Professional status and aspirations			
	A.	A.2 including: B.11 Gender discrimination	B.	C.	D. Any steps taken towards the creation of a business?	E. Aspire to be self-employed now	F. Aspire to be self-employed in 20 years from now
Panel A: Females vs males							
G1: Females	0.017 (0.012)	-0.009 (0.025)	-0.010 (0.015)	-0.018 (0.016)	-0.056** (0.028)	-0.005 (0.037)	0.031 (0.045)
G2: Males	-0.008 (0.006)	-0.041*** (0.012)	0.011 (0.008)	-0.005 (0.018)	-0.014 (0.016)	0.031 (0.020)	0.027 (0.022)
Testing G1=G2							
Chi2-stat	3.708	1.276	1.561	0.304	1.675	0.756	0.008
P-value	0.054	0.259	0.212	0.581	0.196	0.385	0.929
Sample size	2,577	3,028	3,163	3,158	3,166	3,110	2,570
Control mean (G1)	0.601	0.550	0.094	0.047	0.161	0.325	0.465
Control mean (G2)	0.567	0.472	0.094	0.306	0.202	0.399	0.564
Panel B: Non-highly vs highly educated							
G1: Non-highly educated	-0.006 (0.007)	-0.048*** (0.015)	0.019** (0.008)	-0.009 (0.020)	-0.018 (0.018)	0.030 (0.023)	0.019 (0.026)
G2: Highly educated	-0.005 (0.010)	-0.005 (0.020)	-0.014 (0.015)	-0.028 (0.025)	-0.010 (0.027)	0.025 (0.033)	0.016 (0.036)
Testing G1=G2							
Chi2-stat	0.004	3.160	3.636	0.341	0.058	0.012	0.006
P-value	0.951	0.075	0.057	0.559	0.810	0.912	0.937
Sample size	2,189	2,558	2,666	2,661	2,667	2,626	2,200
Control mean (G1)	0.575	0.509	0.066	0.296	0.189	0.383	0.534
Control mean (G2)	0.577	0.449	0.154	0.192	0.195	0.378	0.575
Panel C: No link to entrepreneurship vs link to entrepreneurship							
G1: No link to se	0.000 (0.006)	-0.034*** (0.012)	0.004 (0.008)	-0.011 (0.015)	-0.029* (0.015)	0.015 (0.019)	0.028 (0.022)
G2: Link to se	-0.010 (0.012)	-0.030 (0.024)	0.016 (0.014)	0.004 (0.041)	-0.007 (0.034)	0.052 (0.041)	0.018 (0.045)
Testing G1=G2							
Chi2-stat	0.509	0.017	0.505	0.123	0.372	0.654	0.041
P-value	0.475	0.895	0.477	0.726	0.542	0.419	0.839
Sample size	2,577	3,028	3,163	3,158	3,166	3,110	2,570
Control mean (G1)	0.575	0.496	0.099	0.202	0.185	0.372	0.545
Control mean (G2)	0.566	0.455	0.072	0.468	0.230	0.436	0.544

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceived and actual barriers to self-employment, as well as on their professional aspirations and status for different subgroups of our sample. In order to do so, we estimate equation (3) for each pair of subgroups and for each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 5.a: Impact on respondents' general beliefs

Share of respondents who strongly agreed with the following statements:

	A.	B.	C.	D.	E.
	In Egypt, it is possible for women to successfully run their own business	In Egypt, it is possible for individuals without a higher education to successfully run their own business	In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	In Egypt, when jobs are scarce, men should have more rights to a job than women	In Egypt, a university education is more important for a boy than for a girl
Panel A: Without strata dummies or covariates					
Encouragements	0.056*** (0.017)	-0.003 (0.017)	0.034 (0.018)	-0.009 (0.017)	-0.005 (0.014)
P-value (unadj.)	0.001	0.870	0.058	0.601	0.735
P-value (adj.)	0.003	0.870	0.116	1.000	1.000
Panel B: With strata dummies and possible covariates					
Encouragements	0.053*** (0.017)	-0.003 (0.017)	0.033 (0.018)	-0.011 (0.016)	-0.004 (0.014)
P-value (unadj.)	0.002	0.842	0.063	0.508	0.742
P-value (adj.)	0.006	0.842	0.126	1.000	1.000
Sample size	3,170	3,170	3,170	3,170	3,171
Control mean	0.569	0.608	0.494	0.702	0.187

Notes: In this table, we describe the average treatment effect of the intervention on respondents' general opinions. In order to do so, we estimate equations (1) (Panel A) and (2) (Panel B) for each of the dependent variable displayed in top row of the table. P-values are corrected at the family of outcomes level using the Holm-Bonferroni method. The 1st family of outcomes is constituted of the three outcomes displayed in columns A., B., and C.; and the 2nd family is constituted of the two outcomes displayed in columns D. and E.

*, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Table 5.b: Impact on respondents' general beliefs (heterogeneity analysis)

Share of respondents who strongly agreed with the following statements:

	A.	B.	C.	D.	E.
	In Egypt, it is possible for women to successfully run their own business	In Egypt, it is possible for individuals without a higher education to successfully run their own business	In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	In Egypt, when jobs are scarce, men should have more rights to a job than women	In Egypt, a university education is more important for a boy than for a girl
Panel A: Females vs males					
G1: Females	0.007 (0.028)	-0.045 (0.039)	0.017 (0.040)	-0.071* (0.039)	-0.005 (0.021)
G2: Males	0.064*** (0.020)	0.008 (0.019)	0.038* (0.020)	0.007 (0.017)	-0.004 (0.016)
Testing G1=G2					
<i>Chi2-stat</i>	2.686	1.437	0.223	3.285	0.001
<i>P-value</i>	0.101	0.231	0.637	0.070	0.977
Sample size	3,170	3,170	3,170	3,170	3,171
Control mean (G1)	0.842	0.637	0.478	0.550	0.075
Control mean (G2)	0.501	0.601	0.498	0.740	0.215
Panel B: Non-highly vs highly educated					
G1: Non-highly educated	0.058*** (0.022)	0.000 (0.023)	0.019 (0.024)	-0.026 (0.020)	-0.020 (0.019)
G2: Highly educated	0.036 (0.032)	-0.032 (0.033)	0.007 (0.034)	-0.006 (0.033)	-0.021 (0.023)
Testing G1=G2					
<i>Chi2-stat</i>	0.300	0.646	0.093	0.287	0.003
<i>P-value</i>	0.584	0.422	0.760	0.592	0.956
Sample size	2,670	2,670	2,670	2,670	2,671
Control mean (G1)	0.556	0.620	0.494	0.749	0.215
Control mean (G2)	0.597	0.597	0.525	0.633	0.146
Panel C: No link to entrepreneurship vs link to entrepreneurship					
G1: No link to se	0.069*** (0.018)	0.002 (0.019)	0.055*** (0.020)	-0.025 (0.018)	0.001 (0.015)
G2: Link to se	-0.005 (0.041)	-0.021 (0.040)	-0.056 (0.041)	0.048 (0.035)	-0.027 (0.033)
Testing G1=G2					
<i>Chi2-stat</i>	2.791	0.282	5.987	3.337	0.602
<i>P-value</i>	0.095	0.596	0.014	0.068	0.438
Sample size	3,170	3,170	3,170	3,170	3,171
Control mean (G1)	0.570	0.597	0.479	0.696	0.180
Control mean (G2)	0.567	0.656	0.557	0.726	0.213

Notes: In this table, we describe the average treatment effect of the intervention on respondents' general opinions for different subgroups of our sample. In order to do so, we estimate equation (3) for each pair of subgroups and for each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

APPENDIX

Appendix A.1: Study timeline

Appendix A.2: Text messages and content of the episodes

Appendix A.3: Analysis of sample characteristics

Appendix A.4: Analysis of attrition

Appendix A.5: Impact on respondents' perception of barriers to starting a business

Appendix A.6: Take-up rate, The Voice (placebo test)

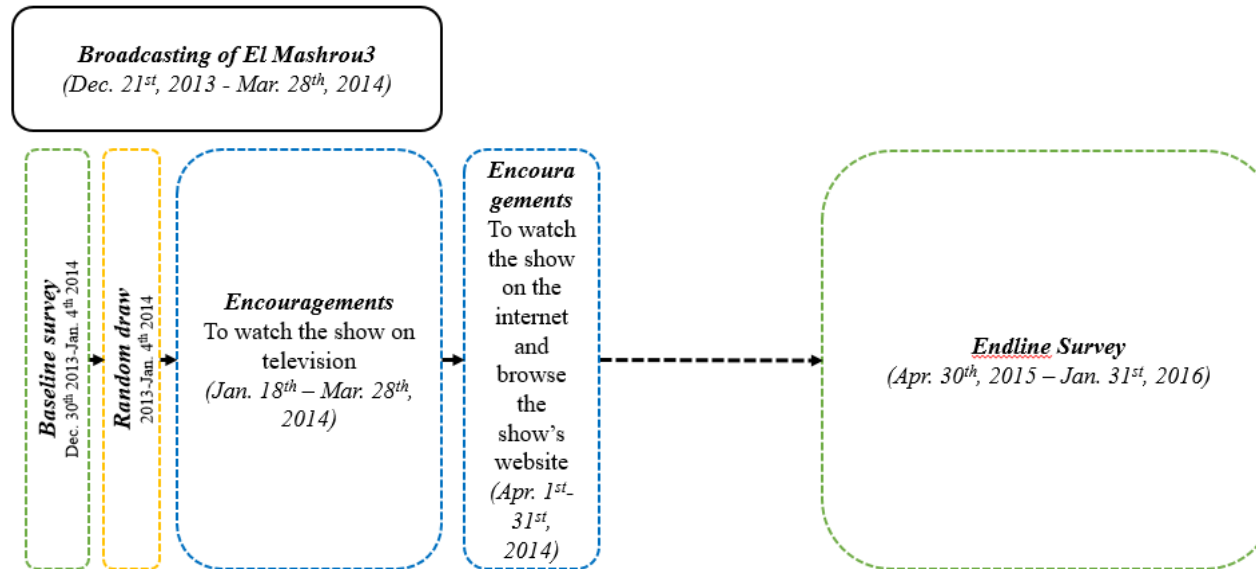
Appendix A.7: Robustness checks

Appendix A.8: Double-lasso procedure

Appendix A.9: Legal differences between men and women's access to economic opportunities

Appendix A.1: Study timeline

In figure below, we summarize the study timeline.



Appendix A.2: Text messages and content of the episodes

In the following table, we list the encouragements sent to treatment respondents in the form of text messages:

Episode	Date	Content of the text messages	Content of the episodes
5	Sat.18 th , Jan.	Do you want to watch a reality TV show that has action, drama, and the necessary skills to become a successful entrepreneur? Watch "El Mashroua" on Al Nahar tonight at 11 pm	<i>Objective:</i> purchasing and processing industrial waste to create home furnishings and sell them to store owners <i>Evaluation criterion:</i> number of orders secured <i>Candidate eliminated:</i> Fadwa Attia
6	Thu. 30 th , Jan. Sat. 1 st , Feb.	Want to learn how to start your business? Create your free account elmashrou3.tv Tonight on Al Nahar at 11, watch entrepreneurs in the kitchen on El Mashroua!	<i>Objective:</i> helping a housewife develop her home-catering activities <i>Evaluation criterion:</i> number of orders secured <i>Candidate eliminated:</i> Reham Gehad
7	Thu. 6 th , Feb. Sat. 8 th , Feb.	You have been selected to participate in a game: watch El Mashroua every week and answer a short survey testing your knowledge of the show at its end. You may win a Samsung tablet. Information: 01025117112. Tonight on Al Nahar at 11, learn how to plan business events on El Mashroua!	<i>Objective:</i> organizing of a street show <i>Evaluation criteria:</i> profits, attendance, creativity, teamwork, customer feedback <i>Candidate eliminated:</i> Sarah Batrawy
8	Thu. 13 th , Feb. Sat. 15 th , Feb.	You have been selected to participate in a game: watch El Mashroua every week and answer a short survey testing your knowledge of the show at its end. You may win a Samsung tablet and other gifts. Information: 01025117112. Tonight on El Mashroua (Al Nahar, 11pm), contestants face an exciting challenge in the desert!	<i>Objective:</i> organizing of a tourist trip <i>Evaluation criteria:</i> customer satisfaction <i>Candidate eliminated:</i> Tharey El Din El Haggag
9	Sat. 22 nd , Feb.	Tonight on El Mashroua (Al Nahar, 11pm), contestants learn how to advertize their business!	<i>Objective:</i> producing a 30-second video to raise awareness of a social issue <i>Evaluation criteria:</i> the opinions of the focus groups and judges <i>Candidate eliminated:</i> Sherif Hosny
10	Sat. 1 st , Mar.	Watch El Mashroua on Al Nahar tonight (11pm), contestants organize exciting fashion shows, last challenge before the grand finale!	<i>Objective:</i> organizing a fashion show <i>Evaluation criteria:</i> 1) the judges' opinion on the choice of materials purchased; 2/ experts' feedback on the fashion show <i>Candidate eliminated:</i> Abdel Hamid
11	Mon. 3 rd , Mar. Sat. 8 th , Mar.	Want to go beyond the show? Need advice, online courses or micro-finance loans to start your business? Create your account on elmashrou3.tv, you'll find all the information you need to start your business Watch El Mashroua on Al Nahar tonight (11pm) and see how successful entrepreneurs judge contestants' business plan!	<i>Objective:</i> presenting their business plan to a panel of successful entrepreneurs <i>Evaluation criteria:</i> 1) Sustainability; 2) Scalability; 3) Profitability; 4) Market Viability <i>Candidate eliminated:</i> Islam (Semo) Hamid and Shirley Ahmed
12	Sat. 15 th , Mar.	What is the name of the 7 shillings band from the street show episode? To win prizes from El Mashrou3 send us the answer to 01025117112 or quiz@elmashrou3.tv before 19/03	<i>Objective:</i> providing viewers with a summary of the last 11 episodes as a prelude to the grand finale.

13	Sat. 22 th , Mar.	Who gave Tina the best rating in the last episode? To win prizes from El Mashrou3 send us the answer to 01025117112 or quiz@elmashrou3.tv before 19/03	<i>Objective:</i> presenting their business plan to a jury of business leaders and members of the entrepreneurial ecosystem. <i>Evaluation criteria:</i> 1) Presentation skills; 2) Q & A Performance; 3) Sustainability; 4) Profitability; 5) Social Impact <i>Final ranking:</i> 1) Yostina Boules (winner); 2) Omneya El Kady ; 3) Mostafa Nahawy
Quiz	Tue. 1 st , Apr.	Log on elmashrou3.tv and answer our quiz before 15/4 to win a Samsung Tablet	Log on elmashrou3.tv and answer our quiz before 15/4 to win a Samsung Tablet

Notes: in this table, we report the SMS messages sent to treatment respondents to encourage them to watch the show and provide a description of the episodes for which encouragements were sent.

Appendix A.3: Analysis of sample characteristics

A. Sample representativeness

Variables	Characteristics of the respondents surveyed at baseline			Statistics at the national level	
	N	Mean	Sd	Mean	Source
Male	5,586	0.854	0.354		
Age	4,646	27.003	4.969		
Email address shared	5,586	0.144	0.351		
Primo respondent	5,586	0.825	0.380		
Nber of friends in cluster	5,586	0.442	0.754		
Schooling level					
<i>Never went to school</i>	5,586	0.035	0.183	0.247	CAPMAS 2014
<i>Primary school</i>	5,586	0.122	0.328	0.236	CAPMAS 2014
<i>Secondary education</i>	5,586	0.319	0.466	0.402	CAPMAS 2014
<i>Higher education</i>	5,586	0.206	0.404	0.116	CAPMAS 2014
<i>Missing</i>	5,586	0.318	0.466		
Status					
<i>Employee</i>	5,586	0.234	0.423		
<i>Self-employed</i>	5,586	0.141	0.348		
<i>Unemployed</i>	5,586	0.137	0.344		
<i>Student</i>	5,586	0.049	0.216		
<i>Home duties</i>	5,586	0.090	0.286		
<i>Other</i>	5,586	0.031	0.173		
<i>Missing</i>	5,586	0.318	0.466		
Location					
<i>Urban Gov.</i>	5,586	0.182	0.386	0.177	DHS 2014
<i>Lower Egypt</i>	5,586	0.263	0.440	0.429	DHS 2014
<i>Upper Egypt</i>	5,586	0.226	0.418	0.376	DHS 2014
<i>Frontier Gov.</i>	5,586	0.011	0.104	0.018	DHS 2014
<i>Missing</i>	5,586	0.318	0.466		
Wealth					
<i>Overall index</i>	3,783	-0.006	0.421		
<i>Television</i>	3,804	0.979	0.144	0.975	DHS 2014
<i>Satellite</i>	3,804	0.904	0.294	0.966	DHS 2014
Endline batch					
<i>1st batch</i>	5,586	0.252	0.434		
<i>2nd batch</i>	5,586	0.251	0.434		
<i>3rd batch</i>	5,586	0.250	0.433		
<i>4th batch</i>	5,586	0.246	0.431		

Notes: In the table, we provide the average characteristics of the respondents who completed the baseline questionnaire. Information are missing for the 597 secondary respondents included in our sample as they could not be contacted prior to the roll-out of the encouragements (only their age and gender could be obtained via their prime respondent). In the last two columns of the table, we assess our the representativeness by providing, when available the same statistics at the national level. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

B. Characteristics of respondents who named friends at baseline and those who did not

Variables	<i>All prime respondents</i>					
	<i>Characteristics of respondents who did not name any friend</i>			<i>Comparison with respondents who named at least one</i>		
	N	Mean	Sd	Coeff.	P-value	Sig.
Male	3,154	0.699	0.459	0.108	0.000	***
Age	3,154	27.411	5.104	-1.160	0.000	***
Email address shared	3,855	0.143	0.350	0.134	0.000	***
Primo respondent	3,855	1.000	0.000	0.000	0.000	
Size of the cluster	3,855	1.000	0.000	1.289	0.000	***
Schooling level						
<i>Never went to school</i>	3,855	0.047	0.213	-0.034	0.000	***
<i>Primary school</i>	3,855	0.151	0.358	-0.018	0.202	
<i>Secondary education</i>	3,855	0.377	0.485	0.053	0.007	***
<i>Higher education</i>	3,855	0.241	0.428	0.053	0.003	***
<i>Missing</i>	3,855	0.183	0.387	-0.055	0.000	***
Status						
<i>Employee</i>	3,855	0.270	0.444	0.079	0.000	***
<i>Self-employed</i>	3,855	0.172	0.377	-0.005	0.745	
<i>Unemployed</i>	3,855	0.164	0.371	0.013	0.390	
<i>Student</i>	3,855	0.058	0.234	0.008	0.423	
<i>Home duties</i>	3,855	0.117	0.321	-0.049	0.000	***
<i>Other</i>	3,855	0.036	0.187	0.007	0.357	
<i>Missing</i>	3,855	0.182	0.386	-0.053	0.000	***
Location						
<i>Urban Gov.</i>	3,855	0.221	0.415	-0.001	0.932	
<i>Lower Egypt</i>	3,855	0.314	0.464	0.025	0.189	
<i>Upper Egypt</i>	3,855	0.271	0.444	0.022	0.220	
<i>Frontier Gov.</i>	3,855	0.012	0.109	0.008	0.140	
<i>Missing</i>	3,855	0.182	0.386	-0.053	0.000	***
Wealth						
<i>Overall index</i>	3,126	-0.015	0.423	0.051	0.004	***
<i>Television</i>	3,146	0.979	0.144	0.002	0.798	
<i>Satellite</i>	3,146	0.902	0.298	0.015	0.224	

Notes: In the table, we provide the average characteristics of the respondents who did not name any friend at baseline and test whether their characteristics differ from those who did. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Appendix A.4: Analysis of attrition

Variables	Attrition		
	(1)	(2)	(3)
Treatment group (T)	0.016 (0.013)	0.014 (0.013)	0.015 (0.067)
Male		0.305*** (0.015)	0.281*** (0.022)
Age, above 25		-0.091*** (0.014)	-0.116*** (0.020)
Age, missing		0.153*** (0.036)	0.194*** (0.054)
Education, highly educated		-0.047*** (0.016)	-0.058** (0.023)
Education, missing		-0.097** (0.039)	-0.102* (0.057)
Link to s.e.		-0.104*** (0.018)	-0.097*** (0.025)
Wealth, top 50%		-0.034** (0.017)	-0.031 (0.024)
Wealth, missing		-0.063*** (0.021)	-0.056* (0.030)
Primary respondents		0.001 (0.022)	0.019 (0.031)
Number of friends		-0.063*** (0.011)	-0.062*** (0.016)
Endline batch		0.011** (0.006)	0.017** (0.008)
Male * T			0.048 (0.031)
Age, above 25 * T			0.051* (0.029)
Age, missing * T			-0.083 (0.073)
Education, highly educated * T			0.022 (0.032)
Education, missing * T			0.014 (0.077)
Link to s.e. * T			-0.014 (0.036)
Wealth, top 50% * T			-0.003 (0.034)
Wealth, missing * T			-0.012 (0.042)
Primary respondents * T			-0.040 (0.044)
Number of friends * T			-0.002 (0.023)
Endline batch * T			-0.012 (0.011)
Observations	5,586	5,586	5,586
R-squared	0.000	0.067	0.069
Strata FE	YES	YES	YES
Pure control mean	0.432	0.432	0.432
Fstat			0.930
Pvalue			0.516

Notes: In the table, we estimate a linear probability model to investigate whether any respondent characteristics (including assignment to treatment) are related to survey attrition. In column 1, we show the coefficients associated with the regression when only the treatment is included in the regression. In column 2, we show the coefficients associated with the regression when the treatment dummy and baseline information are included in the regression – in order to limit the size of the table, we include only the most important ones. In column 3, we show the coefficients associated with the regression when the treatment dummy and baseline information are included in the regression, as well as their interaction. In column 3, we also report the F-stat and P-value associated with the test testing the joint nullity of the treatment variable and all of the interaction terms. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Appendix A.5: Impact on respondents' perception of barriers to starting a business

Perceived and actual barriers to starting a business

	Control Mean & Sd	Obs.	Enc.	Pv (unadj.)	Pv (adj.)
Panel A: Perceived barriers to starting a business					
P.1 Lack of required skills	0.624 0.280	3,094	0.003 (0.010)	0.727	1.000
P.2 No access to funding	0.820 0.236	3,124	0.012 (0.008)	0.135	0.675
P.3 Lack of access to information	0.491 0.292	3,034	0.004 (0.011)	0.704	1.000
P.4 Lack of access to foreign language training	0.513 0.301	2,994	-0.001 (0.011)	0.921	1.000
P.5 Lack of access to technology	0.501 0.301	3,010	-0.005 (0.011)	0.669	1.000
Resource Index	0.589 0.170	2,861	0.005 (0.006)	0.416	0.416
P.6 Government laws	0.634 0.299	2,955	-0.004 (0.011)	0.741	0.741
P.7 Tough Competition	0.471 0.296	3,069	-0.016 (0.010)	0.118	0.236
Economy Index	0.552 0.226	2,905	-0.009 (0.008)	0.264	0.264
P.8 Fear of failure	0.601 0.291	3,098	0.020 (0.010)	0.049	0.147
P.9 Negative perception by society	0.586 0.277	3,004	-0.014 (0.010)	0.167	0.334
P.10 Resistance to change	0.569 0.281	3,019	-0.008 (0.010)	0.456	0.456
P.11 Discrimination based on gender	0.488 0.299	3,028	-0.034 (0.011)	0.002	0.008
Societal Index	0.561 0.179	2,836	-0.010 (0.007)	0.142	0.142
Panel B: Actual barriers to starting a business					
A.1 Mentoring Org.	0.034 0.180	3,166	0.007 (0.007)	0.293	0.879
A.2 Financial Org.	0.184 0.388	3,165	0.012 (0.014)	0.380	0.879
A.3 Training Org.	0.064 0.244	3,166	0.003 (0.009)	0.739	0.879
Knowledge Index (any)	0.094 0.193	3,163	0.007 (0.007)	0.293	0.293

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceptions of the importance of several barriers to starting a business. In order to do so, we estimate equation (2) for each of the dependent variable displayed in left column of the table. Standard errors are clustered at the group of friends level. P-values are corrected at the family of outcomes level using the Holm-Bonferroni method. The 1st family is constituted of the following five outcomes: lack of required skills, no access to funding, lack of access to information, lack of access to foreign language training, and lack of access to technology; the 2nd family is constituted of the following two outcomes: government laws and tough competition; the 3rd family is constituted of the following four outcomes: fear of failure, negative perception by society, resistance to change, and discrimination based on gender; and the fourth family is constituted of the following three outcomes: mentoring organization, financial organization, and training organization. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Appendix A.6: Take-up rate, The Voice (placebo test)

	Exposure to The Voice Measured 13-24 months after							Measured 7 months after
	A.	B.	C.	D.	E.	F.	G.	H.
	Heard of the show	Overall take-up rate	Watched the show	Number of episodes watched	Visited the show's website	Followed show's social media	Attended show's events	Overall take- up rate
Panel A: Without strata dummies or covariates								
Encouragements	0.004 (0.018)	-0.013 (0.016)	-0.015 (0.016)	0.010 (0.129)	0.003 (0.004)	-0.007 (0.007)	-0.001 (0.001)	-0.022 (0.066)
P-value (unadj.)	0.836	0.422	0.327	0.936	0.385	0.310	0.317	0.735
Panel B: With strata dummies and possible covariates selected by double-lasso procedure								
Encouragements	0.011 (0.017)	-0.007 (0.015)	-0.010 (0.015)	0.020 (0.124)	0.004 (0.004)	-0.006 (0.007)	-0.001 (0.001)	-0.020 (0.067)
P-value (unadj.)	0.505	0.629	0.501	0.870	0.322	0.396	0.317	0.767
Sample size	3,167	3,167	3,167	2,979	3,167	3,167	3,167	176
Control mean	0.410	0.268	0.263	1.408	0.011	0.044	0.001	0.267

Notes: In this table, we describe the average treatment effect of the encouragements on respondents' level of exposure to the intervention at endline (13-24 months after the end of the show), as well as the one measured during a short follow-up survey carried out on a small subset of respondents 7 months after the end of the show. In order to do so, we estimate equations (1) (Panel A) and (2) (Panel B) for each of the measure of exposure displayed in top row of the table. P-values are adjusted to control for Family Wise Error Rate. The 1st family of outcomes is constituted of the outcomes displayed in columns A to G; and the 2nd family is constituted of the last outcome displayed in column H. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Appendix A.7: Robustness checks

A. Inverse Probability Weighting

1. Take-up rate

	Exposure to El Mashroua Measured 13-24 months after							Measured 7 months after
	A.	B.	C.	D.	E.	F.	G.	H.
	Heard of the show	Overall take-up rate	Watched the show	Number of episodes watched	Visited the show's website	Followed show's social media	Attended show's events	Overall take- up rate
Panel A: Table 3a impact for comparison (using double-lasso to select covariates)								
Encouragements	0.167*** (0.016)	0.057*** (0.011)	0.052*** (0.011)	0.121*** (0.032)	0.013*** (0.004)	0.011** (0.005)	-0.001 (0.001)	0.099 (0.060)
P-value (unadj.)	0.000	0.000	0.000	0.000	0.000	0.018	0.317	0.102
P-value (adj.)	0.000	0.000	0.000	0.000	0.000	0.036	0.317	0.102
Panel B: IPW results (using double-lasso to select covariates)								
Encouragements	0.169*** (0.016)	0.059*** (0.012)	0.054*** (0.011)	0.132*** (0.034)	0.012*** (0.003)	0.011** (0.004)	-0.001 (0.001)	0.092 (0.061)
P-value (unadj.)	0.000	0.000	0.000	0.000	0.000	0.014	0.317	0.128
P-value (adj.)	0.000	0.000	0.000	0.000	0.000	0.028	0.317	0.128
Sample size	3,166	3,167	3,166	3,078	3,165	3,167	3,165	175
Control mean	0.247	0.088	0.082	0.170	0.003	0.011	0.001	0.157

Notes: In this table, we describe the average treatment effect of the encouragements on respondents' level of exposure to the intervention at endline (13-24 months after the end of the show), as well as the one measured during a short follow-up survey carried out on a small subset of respondents 7 months after the end of the show. In order to do so, we estimate equations (1) (Panel A) and (2) (Panel B) for each of the measure of exposure displayed in top row of the table. P-values are adjusted to control for Family Wise Error Rate. The 1st family of outcomes is constituted of the outcomes displayed in columns A to G; and the 2nd family is constituted of the last outcome displayed in column H. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

2. Impact of the show on main outcomes

Impact on barriers, status, and aspirations related to entrepreneurship

Variables	Barriers			Professional status and aspirations			
	A.	A.1	B.	C.	D.	E.	F.
	Perceived barriers index	<i>including: B.11 Gender discrimination</i>	Knowledge index	Self-employed	Any steps taken towards the creation of a business?	Aspire to be self-employed now	Aspire to be self-employed in 20 years from now
Panel A: Table 4a impact for comparison (using double-lasso to select covariates)							
Encouragements	-0.003 (0.006)	-0.034*** (0.011)	0.007 (0.007)	-0.009 (0.015)	-0.023 (0.014)	0.022 (0.017)	0.028 (0.020)
P-value (unadj.)	0.641	0.002	0.293	0.560	0.090	0.199	0.152
P-value (adj.)		0.008		0.560	0.360	0.456	0.456
Panel B: IPW results (using double-lasso to select covariates)							
Encouragements	-0.000 (0.006)	-0.033** (0.011)	0.006 (0.007)	-0.008 (0.014)	-0.024 (0.014)	0.011 (0.018)	0.025 (0.020)
P-value (unadj.)	0.936	0.003	0.361	0.565	0.073	0.518	0.220
P-value (adj.)		0.012		1.000	0.292	1.000	0.660
Sample size	2,577	3,028	3,163	3,158	3,166	3,110	2,570
Control mean	0.573	0.488	0.094	0.254	0.194	0.384	0.545

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceived and actual barriers to self-employment, as well as on their professional aspirations and status. In *column A.*, we report on the impact of the intervention on an index capturing respondents' average perceived importance of eleven barriers to entrepreneurship - two of which are displayed in *columns A.1* and *A.2*. In *column B.*, we report on the impact of the intervention on an index capturing respondents' entrepreneurship-related knowledge. For both indexes, results found on each individual item used in their construction can be found in *Table A.5* placed in the appendix. In Panel A, we show our main results and, in Panel B, we show those we obtain when using an Inverse Probability Weighting method. We do so for each of the measure of exposure displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values displayed in *columns A.1*, *A.2*, *C.*, *D.*, *E.*, and *F.* are corrected at the family of outcomes level using the Holm-Bonferroni method. The variable displayed in *column A.1* is part of a family of outcomes reporting on economic barriers to entrepreneurship and includes one other barriers: complicated laws. The variable displayed in *column A.2* is part of a family of outcomes reporting on societal barriers to entrepreneurship and includes three other barriers: fear of failure, negative perception by the society, and resistance to change. Outcomes displayed in *columns C.*, *D.*, *E.*, and *F.* constitute one single family of outcomes. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Impact on general beliefs

Share of respondents who strongly agreed with the following statements:

Variables	A. In Egypt, it is possible for women to successfully run their own business	B. In Egypt, it is possible for individuals without a higher education to successfully run their own business	C. In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	D. In Egypt, when jobs are scarce, men should have more rights to a job than women	E. In Egypt, a university education is more important for a boy than for a girl
Panel A: Table 5a impact for comparison (using double-lasso to select covariates)					
Encouragements	0.053*** (0.017)	-0.003 (0.017)	0.033 (0.018)	-0.011 (0.016)	-0.004 (0.014)
P-value (unadj.)	0.002	0.842	0.063	0.508	0.742
P-value (adj.)	0.006	0.842	0.126	1.000	1.000
Panel B: IPW results (using double-lasso to select covariates)					
Encouragements	0.052*** (0.017)	-0.004 (0.018)	0.037* (0.018)	-0.011 (0.017)	-0.001 (0.014)
P-value (unadj.)	0.002	0.816	0.042	0.497	0.966
P-value (adj.)	0.006	0.816	0.084	1.000	1.000
Sample size	3,170	3,170	3,170	3,170	3,171
Control mean	0.569	0.608	0.494	0.702	0.187

Notes: In this table, we describe the average treatment effect of the intervention on respondents' general opinions. In Panel A, we show our main results and, in Panel B, we show those we obtain when using an Inverse Probability Weighting method. We do so for each of the measure of exposure displayed in top row of the table. P-values are corrected at the family of outcomes level using the Holm-Bonferroni method. The 1st family of outcomes is constituted of the three outcomes displayed in columns A., B., and C.; and the 2nd family is constituted of the two outcomes displayed in columns D. and E. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

B. Prime vs secondary respondents

1. Take-up rate

	A. Overall take- up rate
G1: Prime respondents	0.057*** (0.013) 0.000
G2: Secondary respondents	0.060** (0.026) 0.021
Testing G1=G2:	
<i>Chi2-stat</i>	0.009
<i>P-value</i>	0.925
Covariates	YES
Observations	3,167
Control mean (G1)	0.091
Control mean (G2)	0.075

Notes: In this table, we test whether or not the effect of the encouragements on respondents' level of exposure to the intervention for prime and secondary respondents. We estimate equation (3) using as a dependent variable the overall take-up variable. P-values are not adjusted to control for Family Wise Error Rate. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

2. Impact of the show on main outcomes

Impact on barriers, status, and aspirations related to entrepreneurship

Variables	Barriers			Professional status and aspirations			
	A.	A.2 <i>including: B.11 Gender discrimination</i>	B.	C.	D. Any steps taken towards the creation of a business?	E. Aspire to be self- employed now	F. Aspire to be self- employed in 20 years from now
G1: Prime respondents	-0.004 (0.006)	-0.039*** (0.012)	0.007 (0.008)	-0.012 (0.016)	-0.023 (0.015)	0.011 (0.019)	0.023 (0.022)
G2: Secondary respondents	0.005 (0.013)	-0.007 (0.025)	0.005 (0.016)	0.009 (0.036)	-0.034 (0.035)	0.068* (0.040)	0.036 (0.045)
Testing G1=G2							
Chi2-stat	0.446	1.276	0.017	0.278	0.083	1.628	0.064
P-value	0.504	0.259	0.897	0.598	0.773	0.202	0.800
Sample size	2,577	3,028	3,163	3,158	3,166	3,110	2,570
Control mean (G1)	0.576	0.494	0.093	0.251	0.183	0.389	0.538
Control mean (G2)	0.562	0.461	0.097	0.269	0.242	0.362	0.571

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceived and actual barriers to self-employment, as well as on their professional aspirations and status for different subgroups of our sample. In order to do so, we estimate equation (3) for each pair of subgroups and each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Impact on general beliefs

Share of respondents who strongly agreed with the following statements:

	A.	B.	C.	D.	E.
	In Egypt, it is possible for women to successfully run their own business	In Egypt, it is possible for individuals without a higher education to successfully run their own business	In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	In Egypt, when jobs are scarce, men should have more rights to a job than women	In Egypt, a university education is more important for a boy than for a girl
G1: Prime respondents	0.036* (0.019)	-0.009 (0.019)	0.024 (0.020)	-0.002 (0.018)	0.002 (0.015)
G2: Secondary respondents	0.139*** (0.040)	0.025 (0.041)	0.076* (0.041)	-0.051 (0.035)	-0.031 (0.032)
Testing G1=G2					
Chi2-stat	5.512	0.556	1.256	1.592	0.937
P-value	0.019	0.456	0.262	0.207	0.333
Sample size	3,170	3,170	3,170	3,170	3,171
Control mean (G1)	0.586	0.614	0.498	0.685	0.183
Control mean (G2)	0.497	0.584	0.481	0.773	0.201

Notes: In this table, we describe the average treatment effect of the intervention on respondents' general opinions for different subgroups of our sample. In order to do so, we estimate equation (3) for each pair of subgroups and each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

C. Prime respondents who gave at least one of their friend's contact details vs those who did not

1. Take-up rate

	A. 0/1 Friends	B. # Friends
G1: Without friend	0.059*** (0.014)	
	0.000	
G2: With friend(s)	0.049 (0.030)	
	0.107	
G1: One friend		0.069** (0.035)
		0.050
G2: Two or more friends		-0.025 (0.058)
		0.659
Testing G1=G2:		
<i>Chi2-stat</i>	0.087	1.949
<i>P-value</i>	0.768	0.163
Covariates	YES	YES
Observations	2,574	486
Control mean (G1)	0.087	0.103
Control mean (G2)	0.110	0.131

Notes: In this table, we test whether or not the effect of the encouragements on respondents' level of exposure to the intervention varies based on whether or not they named at least one friend at baseline (column A) and based on the number of friends they named (column B). In column A, the sample is restricted to prime respondents. In column B, the sample is restricted to prime respondents who named at least one friend. We estimate equation (3) for each pair of subgroups using as a dependent variable the overall take-up variable. P-values are not adjusted to control for Family Wise Error Rate. Standard errors are clustered at the group of friends level. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

2. Impact of the show on main outcomes

Impact on barriers, status, and aspirations related to entrepreneurship

Variables	Barriers			Professional status and aspirations			
	A.	A.2	B.	C.	D.	E.	F.
	Perceived barriers index	<i>including: B.11 Gender discrimination</i>	Knowledge index	Self-employed	Any steps taken towards the creation of a business?	Aspire to be self-employed now	Aspire to be self-employed in 20 years from now
Panel A: Without friend vs with friend(s)							
G1: Without friend	-0.003 (0.007)	-0.038*** (0.013)	0.003 (0.008)	-0.004 (0.018)	-0.012 (0.016)	0.016 (0.021)	0.029 (0.024)
G2: With friend(s)	-0.011 (0.013)	-0.048* (0.026)	0.027 (0.019)	-0.050 (0.038)	-0.061* (0.036)	-0.004 (0.044)	0.015 (0.048)
Testing G1=G2							
Chi2-stat	0.309	0.119	1.293	1.203	1.566	0.170	0.071
P-value	0.578	0.730	0.255	0.273	0.211	0.680	0.790
Sample size	2,089	2,454	2,570	2,565	2,573	2,525	2,070
Control mean (G1)	0.580	0.506	0.106	0.290	0.220	0.402	0.565
Control mean (G2)	0.580	0.506	0.106	0.290	0.220	0.402	0.565
Panel B: With one friend vs with two or more							
G1: One friend	-0.011 (0.016)	-0.069** (0.030)	0.017 (0.021)	-0.073* (0.044)	-0.040 (0.041)	-0.024 (0.051)	0.026 (0.056)
G2: Two or more	-0.010 (0.023)	0.018 (0.048)	0.070 (0.046)	0.013 (0.079)	-0.129* (0.071)	0.046 (0.087)	-0.020 (0.099)
Testing G1=G2							
Chi2-stat	0.004	2.310	1.126	0.904	1.172	0.476	0.168
P-value	0.953	0.129	0.289	0.342	0.279	0.490	0.682
Sample size	399	466	485	485	485	479	404
Control mean (G1)	0.584	0.515	0.101	0.299	0.212	0.442	0.571
Control mean (G2)	0.571	0.478	0.120	0.262	0.246	0.283	0.547

Notes: In this table, we describe the average treatment effect of the intervention on respondents' perceived and actual barriers to self-employment, as well as on their professional aspirations and status for different subgroups of our sample. In Panel A, the sample is restricted to prime respondents. In Panel B, the sample is restricted to prime respondents who named at least one friend. In order to do so, we estimate equation (3) for each pair of subgroups and each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Impact on general beliefs

Share of respondents who strongly agreed with the following statements:

	A.	B.	C.	D.	E.
	In Egypt, it is possible for women to successfully run their own business	In Egypt, it is possible for individuals without a higher education to successfully run their own business	In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	In Egypt, when jobs are scarce, men should have more rights to a job than women	In Egypt, a university education is more important for a boy than for a girl
Panel A: Without friend vs with friend(s)					
G1: Without friend	0.038*	0.000	0.022	-0.003	0.002
	(0.021)	(0.021)	(0.022)	(0.020)	(0.017)
G2: With friend(s)	0.014	-0.051	0.030	0.004	-0.001
	(0.043)	(0.044)	(0.045)	(0.040)	(0.036)
Testing G1=G2					
Chi2-stat	0.247	1.076	0.023	0.022	0.006
P-value	0.619	0.300	0.878	0.882	0.939
Sample size	2,573	2,573	2,573	2,573	2,574
Control mean (G1)	0.590	0.612	0.495	0.683	0.179
Control mean (G2)	0.569	0.622	0.508	0.695	0.203
Panel B: With one friend vs with two or more					
G1: One friend	0.048	-0.078	0.020	-0.002	0.000
	(0.049)	(0.052)	(0.051)	(0.048)	(0.042)
G2: Two or more friends	-0.097	0.038	0.069	0.023	-0.003
	(0.090)	(0.082)	(0.093)	(0.074)	(0.070)
Testing G1=G2					
Chi2-stat	1.994	1.424	0.214	0.082	0.001
P-value	0.158	0.233	0.644	0.774	0.970
Sample size	486	486	486	486	486
Control mean (G1)	0.573	0.605	0.503	0.681	0.211
Control mean (G2)	0.557	0.672	0.504	0.738	0.180

Notes: In this table, we describe the average treatment effect of the intervention on respondents' general opinions for different subgroups of our sample. In Panel A, the sample is restricted to prime respondents. In Panel B, the sample is restricted to prime respondents who named at least one friend. In order to do so, we estimate equation (3) for each pair of subgroups and each dependent variable displayed in top row of the table. Standard errors are clustered at the group of friends level. P-values are not adjusted to control for Family Wise Error Rate. *, **, *** denote significance at the 10, 5 and 1 percent levels respectively.

Appendix A.8: Double-lasso procedure

To account for missing values, the set of baseline covariates considered as part of this procedure includes the following variables in the following form: age dummies (18 to 25, 26 to 30, 31 to 35, or missing), the number of friends in the cluster, highest educational attainment dummies (no education, primary education, secondary education, higher education, or missing), professional status dummies (employee in the private sector, self-employed, unemployed looking for a job, unemployed studying, unemployed taking care of home duties, other professional status, or missing), location dummies (Urban governorates, Lower Egypt governorates, Upper Egypt governorates, Frontier Governorates, or missing), and wealth index quintiles (1st, 2nd, 3rd, 4th, or missing). When implementing the double-lasso procedure, we require that strata fixed effects (which, by definition, are orthogonal to T_i) be systematically included in the estimated equation.

The following table summarizes the variables selected as part of the first and second steps of the double-lasso procedure, through which we obtained the results shown in *Panel B* of *Tables 3.a, 4.a, and 5.a*:

Tables	Variables	Step 1: predicting y_i	Step 2: predicting T_i
Table 3.a: Take-up rate, El Mashroua	A. Heard of the show	The dummy variable taking the value 1 when the age information is missing and 0 otherwise.	None
	B. Overall take-up rate	None	None
	C. Watched the show	The dummy variable taking the value 1 when the age information is missing and 0 otherwise.	None
	D. Number of episodes watched	None	None
	E. Visited the show's website	None	None
	F. Followed the show's social media	None	None
	G. Attended show's events	None	None
	H. Overall take-up rate (measured 7 months after)	None	None
Table 4.a: Impact on respondents' perceptions, status and aspirations related to self-employment	A. Perceived barriers index	None	None
	A.1 Gender discrimination	None	None
	B. Knowledge index	The dummy variable taking the value 1 when the education of the individuals at baseline falls in the "Higher education" category and 0 otherwise.	None
	C. Self-employed	The dummy variable taking the value 1 for individuals aged between 18 and 25. The dummy variable taking the value 1 when the status of the individuals at baseline falls in the "self-employed" category and 0 otherwise. The dummy variable taking the value 1 when the status of the individuals at baseline falls in the "student" category and 0 otherwise. The dummy variable taking the value 1 when the status of the individuals at baseline falls in the "home duties" category and 0 otherwise.	None

	D. Any steps towards the creation of a business	None	None
	E. Aspire to be self-employed now	The dummy variable taking the value 1 when the education of the individuals at baseline falls in the “Primary education” category and 0 otherwise.	None
	F. Aspire to be self-employed in 20 years from now	None	None
Table 5.a: Impact on respondents' general beliefs	A. In Egypt, it is possible for women to successfully run their own business	None	None
	B. In Egypt, it is possible for individuals without a higher education to successfully run their own business	None	None
	C. In Egypt, it is possible for individuals who do not have wealthy parents to successfully run their own business	None	None
	D. In Egypt, when jobs are scarce, men should have more rights to a job than women	None	None
	E. In Egypt, a university education is more important for a boy than for a girl	The dummy variable taking the value 1 when the location of the individuals at baseline falls in the “Frontier Governorates” category and 0 otherwise.	None

As a reminder, the *first* step of the double-lasso procedure involves fitting a lasso regression predicting y_i and keeping variables with non-zero estimated coefficients. The *second* step of the double-lasso procedure involves fitting a lasso regression predicting T_i , and keeping variables with non-zero estimated coefficients.

The results of the procedure indicate that no variable is ever selected in the second step (which aims to select covariates predicting T_i). This provides further evidence that the treatment and control groups are comparable.

Appendix A.9: Legal differences between men and women's access to economic opportunities

The *Women, Business and the Law* used in the appendix measures legal differences between men and women's access to economic opportunities in 190 economies. Thirty-five aspects of the law are scored across eight indicators of 4 or 5 binary questions, with each indicator representing a different phase of a woman's career. The methodology was designed as an easily replicable measure of the legal environment for women as entrepreneurs and employees. The data is updated based on feedback from respondents with expertise in family, labor and criminal law. Indicator-level scores are obtained by calculating the unweighted average of the questions within that indicator and scaling the result to 100. Overall scores are then calculated by taking the average of each indicator, with 100 representing the highest possible score.

A. Ranking of countries based on the importance of legal differences between men and women's access to economic opportunities

Worst performing countries			Best performing countries		
Rank	Economy	WBL INDEX	Rank	Economy	WBL INDEX
1	West Bank and Gaza	26.25	171	Germany	94.38
2	United Arab Emirates	26.88	172	Slovak Republic	94.38
3	Yemen, Rep.	26.88	173	Ireland	95.00
4	Afghanistan	28.75	174	Netherlands	95.00
5	Iran, Islamic Rep.	28.75	175	United Kingdom	95.00
6	Saudi Arabia	29.38	176	Hungary	96.88
7	Sudan	29.38	177	Iceland	96.88
8	Bahrain	31.88	178	Norway	96.88
9	Jordan	31.88	179	Serbia	96.88
10	Kuwait	32.50	180	Sweden	96.88
11	Qatar	32.50	181	Canada	97.50
12	Iraq	33.13	182	Finland	97.50
13	Syrian Arab Republic	36.88	183	France	97.50
14	Egypt, Arab Rep.	38.75	184	Greece	97.50
15	Oman	38.75	185	Latvia	97.50
16	Mauritania	39.38	186	Portugal	97.50
17	Guinea-Bissau	40.00	187	Spain	97.50
18	Congo, Dem. Rep.	42.50	188	Belgium	100.00
19	Comoros	43.75	189	Denmark	100.00
20	Eswatini	43.75	190	Luxembourg	100.00

B. Evolution of these legal differences between men and women's access to economic opportunities in Egypt between 2009 and 2020

Evolution of the WBL index in Egypt between 2009 and 2020

