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Closing the Gaps

The Role of Screening Questions and Self-Reporting in Measuring Women's and Youths' Employment and Work

Ivette Contreras
Lelys Dinarte-Diaz
Amparo Palacios-Lopez
Valentina Costa
Steffanny Romero

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Abstract

Can alternative survey methods address the underreporting of women's and youths' labor market outcomes, and thus improve the measurement of the underlying gender- and age-based gaps? This paper addresses this question using a survey experiment in El Salvador that compares two alternative survey methods—a list of activities survey module and enforced self-responses—against a traditional household survey, which consists of proxy responses without a list of activities module. The findings show that including the list of activities module yields higher work and employment rates for the average respondent compared to the standard household survey. Notably, when using the list of activities module, the reported work gap between men and women falls by 8.1 percentage points. Moreover, when using enforced self-responses, the male age gaps in employment and work rates fall by 13.9 and 12.3 percentage points, respectively. The paper provides evidence that the prevalence of peers' informal employment or social norms for domestic obligations drive these results.

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Produced by the Research Support Team

Closing the Gaps:

The Role of Screening Questions and Self-Reporting in Measuring Women's and Youths' Employment and Work[1]

Ivette Contreras[2] Lelys Dinarte-Diaz[3] Amparo Palacios-Lopez[4]

Valentina Costa[5] Steffanny Romero[6]

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[2] Corresponding Author. The World Bank. Email: icontreras@worldbank.org.

[3] The World Bank, IZA, CESifo, HiCN. Email: ldinartediaz@worldbank.org.

[4] The World Bank. Email: apalacioslopez@worldbank.org.

[5] The World Bank. Email: vcosta@worldbank.org.

[6] The World Bank. Email: sromeroesteban@worldbank.org.

1. Introduction

Measuring work accurately is crucial for policy making, especially in low- and middle-income countries where the employment gaps between women and men as well as youth and adults are particularly large.[7] Even though the gender- and age-based employment gaps can be explained by a variety of reasons, including structural changes exacerbated by the COVID-19 pandemic and persistent gender norms (Klasen, 2019; Goldin & Mitchell, 2017; Goldin et al., 2017); these gaps might also reflect, in part, the quality and composition of the underlying data, specifically the possible undermeasurement of women's and youths' labor market outcomes. In fact, existing evidence suggests that standard survey methods traditionally used to collect labor data may not adequately elicit accurate responses from some groups (Ambler et al., 2021; Bardasi et al., 2011; Arthi et al., 2018; Dillon, 2012; Discenza et al., 2021). For example, as evidence shows that women tend to underreport their work activities—due to social norms (Franck and Olsson, 2014), misunderstanding of housework and outside employment (Muller and Sousa, 2020), or the structure of labor modules (Discenza et al., 2021)—official labor data may reflect inaccurate measurements of their work.

There are at least two reasons that may explain why standard survey methods used to collect data on labor indicators potentially undermeasure women's and youths' labor market outcomes. First, standard labor modules included in household surveys are often better at collecting information on formal or regular activities and may fail to properly capture the informal and casual activities that are classified as work under current international guidelines. Respondents may not consider their informal activities, such as preparing food to sell or helping in a family-owned business, as work. Second, standard data collection protocols for household surveys allow for proxy respondents to provide responses on behalf of other household members. This practice may result in biased reports of labor indicators, particularly when the absent household member works in the informal sector and the proxy respondent is not aware of the household member's labor activities. This would be the case, for example, for a male proxy

[7] For example, in 2022, only 43.8% of women compared to 67.9% of men were employed (ILO, 2022). Similarly, only 43.7% of youth between the ages of 15 to 24 years in low-income countries are recorded as employed compared to 71.3% of adults (ILO, 2022).

respondent who reports information on behalf of his spouse and/or young adult child living within the household.

In this paper, we show that alternative survey methods can address the underreporting of women's and young adults' labor market outcomes, and thereby measure more accurately underlying gender- and age-based employment gaps. To this end, we designed and implemented a survey experiment within the context of a household survey in El Salvador in order to estimate the impact of two alternative survey methods for the respondents' reporting of employment and work, relative to the standard household survey approach. Our findings confirm that women report higher employment when they are given examples that enable them to recognize how they contribute to the working population. We also show that young men reported higher values of labor indicators compared to older men when self-reporting was enforced.

The analysis of different survey methods for labor measurement is particularly relevant in a context such as El Salvador where gender and age-based gaps in labor market outcomes are more pronounced compared to economically similar countries, and where informal work is prevalent (World Bank, 2023). For example, according to the 2022 Household and Multipurpose Survey (EHPM), in El Salvador the gender gap in employment was 30.6 percentage points, which has remained stable for the past 24 years, and youth experience 2.4 times more unemployment than adults (UN, 2023). Moreover, 66.8% of the employment in El Salvador occurs in the informal sector, which highlights why it is important for respondents to understand which activities can be classified as work when collecting and providing information. Furthermore, the share of proxy respondents who participated in the 2022 labor module of the household survey is high but even higher for young men (59.4% of 15 to 64-year-old individuals and 85.5% of young men were represented by proxy respondents).

To estimate each survey method's causal effect on the respondents' reporting of employment and work, we randomly distributed the 1,008 households and their respective 2,480 working-age household members with equal probability across three groups. The first group (LOA) completed a survey interview that included the LOA module before responding to the standard labor module, and proxy responses were allowed. In the second group (ESR), self-reporting was enforced for all eligible respondents in the standard labor module, but the LOA module was not included. The third group (C) was made up of respondents who completed the

standard labor module without the LOA, and allowing proxy responses.[8] To ensure that all the effects were driven by exposure to the two survey methods, all other survey protocols were kept exactly the same for all respondents across each of the three groups. For example, the remaining survey modules, the incentives, and all other survey protocols were identical across all three groups.

We show that including the LOA module significantly increases the respondents' average employment and work rates. We find that the average respondent exposed to the LOA module, relative to the average respondent assigned to the standard approach (C), is 4.0 percentage points (pp) (6.9% of average employment rate in C) more likely to report being employed and 4.3 pp (6.3% the average work rate in C) more likely to report working. Moreover, when compared to the standard approach, enforced self-reporting in the labor module has no statistically significant effect on either employment or work for the average survey experiment participant.

We then explore the survey methods' heterogeneous effects by sex and age. First, we find that providing the LOA is more effective at addressing underreporting bias on labor market outcomes for women. Exposure to the LOA module reduces the work gap between women and men by 8.2 pp. The LOA module also increases the probability of women reporting to be employed and working by 6.8 and 8.1 pp, respectively, compared to the other women who were not exposed to the LOA (in group C). Second, we find that the ESR method has no differential effect on the reporting of labor outcomes by sex. Third, none of the alternative survey methods has a differential effect by age on the reporting of employment or work.

We further explore differential impacts by age within the samples of female and male respondents, separately. First, we find that enforcing self-responses reduces the employment and work gaps between young and older male respondents in the ESR group by 13.9 and 12.3 pp, respectively. This result seems to be driven by adjustment in the reports for both old and young respondents. Specifically, and in line with the findings in Bardasi (2011), older male respondents

[8] Since this is not a 2x2 design, we can only provide causal estimates from two comparisons. First, comparing the LOA and the control groups reveals the causal effect of including the LOA module when using proxy respondents. Second, comparing the ESR and control groups makes it possible to estimate the impact of enforcing self-reporting in the labor module.

in the ESR group are 5.0 pp less likely to report working relative to other older men assigned to group C.

We provide suggestive evidence on potential mechanisms driving these results. We test two potential channels: the prevalence of peers' informal employment and social norms related to domestic obligations. First, our findings suggest that the incidence of peers' informality in a community influences the effectiveness of using the ESR survey method in capturing female and youth work and youth employment. Second, we also show that peers' informality in a community has no differential effect on the impacts of using the LOA module. Third, we document that the LOA module works better to address women's underreporting of labor market indicators when they live in communities where other women spend more time on domestic work. These findings on mechanisms may indicate that the LOA survey method is needed in settings that are more likely to affect women's own assessment of what constitutes work or employment, which is the case of incidence of norms around domestic obligations. Furthermore, the ESR survey method seems to be more relevant in contexts where the proxy respondent is exposed to more informal employment, which may affect his assessment of other household members' labor market participation, particularly those of women and youths. Although these findings provide only suggestive insights, we believe they warrant further exploration, as they can serve as a starting point for new avenues of methodological and policy-relevant research.

Our paper contributes to the literature in several important ways. First, we provide evidence on how different survey methods can help address women's and youths' underreporting of labor market indicators, which results in a mis-measured employment and work gaps by gender and age. The majority of published studies focus primarily on understanding how women underreport their labor outcomes when responding to standard survey methods and how alternative survey methods improve women's reporting of labor indicators relative to men (Ambler et al., 2021; Arthi et al., 2018; Bardasi et al., 2011; Dillon et al., 2012; Discenza et al., 2021; Franck & Olsson, 2014; Kilic et al., 2021; Kilic et al., 2023; Muller & Sousa, 2020). No studies, however, have considered how alternative survey methods affect the reporting of labor outcomes by other population groups such as youth, who are more likely

engaged in informal activities that may not be captured by standard labor modules.[9] In this regard, our paper is the first of its kind to rigorously demonstrate how survey methods can increase the reporting of employment and work of young males compared to older adults and deliver evidence that can inform data collection efforts to ensure that women's and youths' labor activities are well documented and represented statistically.

Second, we provide suggestive evidence on how gender norms and prevalence of informality can explain why and how some survey methods are more effective at addressing mismeasurement of gender- and age-based labor gaps. Studies have documented that occupational segregation by sex, which is rooted in gender norms (Franck & Olsson, 2014; Muller & Sousa, 2020) and persists over time, contributes greatly to gender wage gaps (World Bank, 2011; Borrowman & Klasen, 2020). At the same time, the prevalence of informal work to which the respondent is exposed can bias the respondent's reporting of labor indicators. Despite these findings, studies have yet to demonstrate how norms related to occupational segregation by sex and the prevalence of informality influence how effective the different survey methods are. Thus, another novel and noteworthy contribution of our paper is its evidence for how exposure to gender norms related to housework and the prevalence of informality in the respondent's community along with preliminary participation in alternative survey methods can have heterogeneous effects on women's and youths' reporting of labor indicators.

2. Study Design

2.1 Randomized Methodological Survey Experiment

We designed and implemented a survey experiment to test whether different survey methods capture work activities that respondents would not report when responding to a standard labor module.[10] In particular, we focus on women and youths' reporting of employment and work compared to men and adults, respectively, within the context of a household survey. We conducted this experiment in four stages described below.

[9] To our knowledge, only one study shows how response fatigue can have differential effects on the reporting of productive activities by gender and age (Ambler et al., 2021). The authors, however, do not study the impacts of any specific survey method on the reporting of labor outcomes.

[10] The standard labor module follows the guidelines of the 19th International Conference of Labor Statisticians (ICLS) and collects respondent labor data for the previous 7 days.

Stage 1: Identification of the most common work activities. Between June and July 2022, we facilitated eight focus group discussions among the rural and peri-urban residents of six municipalities that cover two regions of El Salvador.[11] The aim of the discussions was to identify the most common activities in which the members of these communities engage. We began the discussions by asking the participants the following question, "We would like to talk about the activities in which members of your community most commonly engage. Could you please describe to us the activities that are most prevalent in your community?." The activities were grouped into two categories: income- and non-income generating, and classified according to who performed them: women, men, or youth. Next, we discussed whether the employment and work-related activities were for pay, performed inside or outside the home, and their duration, among other things. Lastly, we asked respondents to revise and re-categorize their activity lists based on our discussion of which activities can be characterized as employment and which as work.

Stage 2: Design of the List of Activities (LOA) module. In a second stage, we followed a frequentist approach and classified all of the activities into three categories: (i) agricultural production (e.g., crop production, livestock care, fruit cultivation, fish farming, and fishing) to generate income and for personal consumption; (2) non-agricultural production of items to sell (e.g., pastries or jewelry); and (3) provision of services (e.g., transportation, laundry, cleaning). Based on the information provided by the respondents, we then designed a List of Activities (LOA) module (see Table A1), which included the most common work activities performed within a given region. The list aimed to provide a sufficient number of examples of income-generating activities that can be classified as work for statistical purposes.[12] The objective of the LOA module was not to collect data to measure the main outcomes of the paper, but to help respondents better identify the work activities in which they had engaged during the previous week so that they could report their work information in the standard labor module more

[11] The municipalities within the Department of San Salvador are Aguilares, El Paisnal, Nejapa, and Guazapa, and the municipalities from the Department of Usulután are Jiquilisco, Puerto El Triunfo, San Dionisio, and California. Appendix A includes more details on the focus group discussions, and Section 3 contains information on selection of these municipalities.

[12] A potential concern with the selection of activities is that they might drive the results by gender or age. For example, if the LOA included more examples of activities typically performed by women, then it would bias the results towards greater reporting by women. To avoid this bias, we made sure that the list included a similar number of activities performed by men, women, and youth.

accurately. We then used the latter module as our data source to measure the main outcomes. We discuss this process in more detail in Section 3.

Stage 3: Selection of households and respondents. The experiment was conducted in two regions within the Departments of San Salvador and Usulután. We selected these regions in order to achieve high variation in the types of activities reported. Region 1, which is located in the Department of San Salvador, includes households located close to the Metropolitan Area of San Salvador, the main economic activities of which are commerce, construction, manufacturing, and sugar cane production. Region 2 is situated in the Department of Usulután, where the main economic activities include coffee production, fishing, and commerce. Using the 2007 Salvadoran Population Census (i.e., the most recent census available), we identified 276 enumeration areas (EAs): 114 in Region 1, and 162 in Region 2. Each of these EAs had at least 30 households and was classified as either rural or peri-urban. From the 276 EAs, we randomly selected 48 that were evenly distributed across the rural and peri-urban areas and then conducted a full household listing for each EA. We then randomly selected 21 households within each EA for a total of 1,008 households to constitute our study sample. Within each household, we randomly chose a minimum of two and up to a maximum of four working-age household members between the ages of 15 to 64 years, which yielded a total of 2,480 working-age individuals. Since our main hypothesis consists of the differential impacts of these survey methods by age and sex, we stratified the selection of the working age household members by these two variables, and we defined youth as individuals between the ages of 15 to 24 years.

Stage 4: Random assignment of households to experimental groups. We conducted a randomization at the EA-level to assign the 1,008 households with equal probability to one of the following three groups (Figure 1):

1. *LOA Module group (LOA).* A group of households was randomly assigned to participate in the LOA module before responding to the standard labor module. This treatment arm allowed proxy respondents to provide information about the labor activities of other selected household members when they were not available for the interview.
2. *Enforced self-reporting group (ESR).* The selected adults of the households that were randomly assigned to this group responded to the standard labor module without previous exposure to the LOA module. Self-reporting was enforced in this group, and

interviewers were instructed to visit the households up to five times, if necessary, in order to speak directly with the selected household member.

3. *Control group (C).* Individuals living in the households randomly assigned to this group were interviewed using the standard labor module and were not exposed to the LOA module. When the selected household members were not available to respond to the standard labor module, proxies were permitted to respond on their behalf.

As explained before, this design allows us to provide causal estimates based on two comparisons. First, the comparison of LOA and C would provide the causal effect of including the LOA module when proxy respondents are allowed. Similarly, the comparison between the ESR and C gives only an estimate of the impact of enforced self-reporting for the labor module without prior exposure to the LOA module.

To avoid contamination across the groups, all individuals within a particular household were assigned to only one treatment status. To ensure that all the effects were driven by being exposed to the different survey methods described above, all other survey protocols were exactly the same for all respondents across the three experimental groups. In addition, we made sure that all respondents completed the same number of additional modules on demographic and socio-economic characteristics at the individual- and household-level. Further details regarding data collection are provided in Section 3.

3. Data

3.1 Data Collection Activities and Survey Instrument

The data used in this experiment were collected when surveying the selected sample of 1,008 households (2,480 household members) between August and October 2022.[13] The interviews were conducted using a Computer-Assisted Personal Interviewing (CAPI) program, in which we embedded the household assignments to the treatment groups.

The survey instrument included up to 18 modules (see Table A2). The first module collected information from the household roster to identify all household members. After completing the household roster, the CAPI program randomly selected the working-age

[13] See Appendix B for more details on other methodological activities, including enumerator training, replacement protocol, fieldwork, and data quality assurance.

household members (aged 15 to 64 years) who would participate in the experiment, stratifying them by age and gender. Each randomly selected member (or the member's proxy respondent for LOA or C) provided information solicited via the three main modules: education, access to technologies, and labor. Only respondents assigned to the LOA treatment responded to that survey module. We made sure that the three relevant modules were collected at the beginning of the experiment and from all of the randomly selected self- or proxy respondents within the three treatment groups.

3.2 Outcomes

We measure the effects of these alternative survey methods on employment and work as outcome variables. For this paper, the working-age population includes individuals between the ages of 15 to 64 years.

Employment: We use data collected from all study participants via the standard labor module. According to the 19th International Conference of Labor Statisticians (ICLS), being employed is defined as working for pay or profit. Individuals who have engaged in work only for their own use in the past week are not considered employed. We define this variable as a dummy indicator that takes the value of 1 if the person engaged in at least one activity for pay or for profit in the last week, and 0 if the person reports either not engaging in any activity for pay or profit or engaging only in activities intended for own use during the past week (Durazo et al, 2021).

Work: A person considered working must be involved in producing goods or providing services in the last week. The output of the activities could be for own use (e.g., farming produce for household consumption without the intention to sell) or for pay, sale and profits. We define this variable as a dummy indicator that takes the value of 1 if the person reported engaging in at least one activity during the previous week (e.g., farming for own consumption or sale, or working in a family- or non-family-run business, working for pay for someone else).

3.3 Summary Statistics

Table 1 reports the summary statistics of the variables used in our analysis.[14] Panels A and B show descriptive statistics of the characteristics of the 1,008 participating households and the 2,480 selected household members, respectively. As we show in Panel A, the average household included in our sample has 3.7 members, which is consistent with the average household size (3.3

[14] Appendix C includes definitions for each of these variables.

members) in El Salvador (EHPM, 2022). Moreover, for every working-age adult within the household, there are approximately 0.27 dependents—children under the age of 14 or elderly aged 65 years and older. In addition, half of the households in our sample are located in rural areas, and approximately one-third of these households reported experiencing moderate to severe food insecurity. In terms of sources of income, about one-third of the household members work in non-farming related activities, and about one-third of the households receive remittances. Lastly, 54% of the household members are engaged in agricultural activities, including growing and harvesting crops, raising livestock and/or fish, and fishing.

Panel B shows that the average participant is 35 years of age; 55% of the participants are women; and 34% of the respondents have not been married. In terms of human capital, 28% of the respondents have completed high school or higher education, and 87% can read or write. Among the participants, 88% report having access to at least one mobile phone, but only 19% have access to the internet at home.

3.4 Validity of the Experiments

To support the validity of our identification assumption in the experiment, we compare average household and individual characteristics across the three groups in our study. We present these results in Table 2. Columns (1) to (3) present the mean variables of the C, LOA, and ESR groups, respectively. Columns (4) through (6) provide *p*-values for t-tests for equality of means between LOA and C (Column [4]), ESR and C (Column [5]), and LOA and ESR (Column [6]). Apart from three of the 15 variables tested, we do not find significant differences in these variables across the treatment and control groups at *p*-values less than 0.1. We only find that households in LOA are less likely to work in agriculture (49% in LOA versus 56 and 57% in C and ESR, respectively; $p = 0.066$ and $p = 0.035$).

Moreover, ESR respondents are, on average, 1.4 years older than LOA and C respondents (relative to an average age of 35 years; $p = 0.014$ and $p = 0.018$) and are between 3-4 pp (out of 89 pp) less likely to know how to read and write ($p = 0.066$ and $p = 0.023$). Lastly, LOA respondents are 3 pp less likely than C respondents to have access to a mobile phone (relative to 86 pp in LOA and 89 pp in C). Statistically, however, this is not surprising when testing across many variables and different groups. Overall, the differences in the respondents' average age, reading and writing skills, and access to a mobile phone are relatively small. Nevertheless, to account for these differences, we control for these variables as a robustness check, as we explain in Section 4.

Since households were randomized within EAs, one concern is the occurrence of intra-cluster contamination, whereby the response of a participant assigned to one treatment arm could affect the response of another respondent assigned to a different treatment arm within the same cluster. To mitigate this issue, we collected all surveys simultaneously within the same EA. In addition, intra-cluster contamination occurs more often when multiple rounds of data are collected. In our case, the EAs were large, and the experiment consisted of only one survey.

4 Empirical Strategy

The random allocation of households to LOA, ESR, and C in the survey experiment provides for exogenous variation in the treatment status that allows us to estimate the LOA module's and enforced self-reporting's effects on the reporting of labor market outcomes. We report treatment effect estimates based on the following specification:

$$Y_{ihs} = \alpha_0 + \beta_1 LOA_{hs} + \beta_2 ESR_{hs} + \Theta X_{ihs} + b_s + \epsilon_{ihs} \qquad (1)$$

where Y_{ihs} is the outcome of interest (employment or work) for individual I, in household h, in enumeration area s. LOA_{hs} is a dummy indicating that household h in stratum s was randomly chosen to respond the LOA module before providing labor information. ESR_{hs} consists of a dummy indicating that the members of household h were required to complete the labor module themselves rather than by proxy. X_{ihs} is a vector of control variables. To select the variables included in this vector, we control only for variables that are thought to influence the outcomes of interest (Bruhn & McKenzie, 2009). Since we collected several such variables, we use a Double-Least Absolute Shrinkage and Selection Operator (LASSO) regression approach to select the variables that are more relevant for each outcome (Urminsky et al., 2016). We include all of the individual-level characteristics presented in Table 2 in the LASSO specification.[15] To test for the robustness of the estimated coefficients, we also estimate Equation (1) by excluding the vector of control variables, controlling for those variables for which we have differences in means across the three treatment groups, and controlling for the variables for which there are differences in means between the original and substitute households. b_s captures stratum fixed effects for the EA, which consist of the interaction between the department (San Salvador or Usulután) and the area of residence (rural or peri-urban).

[15] Table A3 presents the list of control variables that LASSO selected for each outcome and model.

Lastly, ϵ_{is} is an individual error term. Since we assigned households to each experimental group, we estimate clustered standard errors at the household level. Furthermore, we take a more agnostic approach to the structure of the standard errors and use the randomization inference approach to estimate standard errors as well as their respective p-values (Gerber and Green, 2012).

The estimate of $\widehat{\beta_1}$ captures the intention to treat (ITT) effect of being exposed to the LOA module before completing the standard labor module (with proxy respondents permitted). Similarly, $\widehat{\beta_2}$ captures the ITT effect of enforced self-reporting when responding to the standard labor module without prior exposure to the LOA relative to when proxies are allowed.

Our main hypothesis is that alternative survey methods can help address the gender- and age-based differences in the reporting of our outcomes of interest. Thus, we estimate heterogeneous effects by sex and age by modifying Equation (1) by incorporating an interaction between each treatment indicator Tj_{hs} and the dummy D_{ihs}, which specifies whether individual i is a woman or a youth, separately. We use one model for sex and one model for age as follows:

$$Y_{ihs} = \alpha_0 + \beta_1 LOA_{hs} + \beta_2 ESR_{hs} + \beta_3 LOA \times D_{ihs} + \beta_4 ESR \times D_{ihs} + \Theta X_{ihs} + b_s + \epsilon_{ihs} \quad (2)$$

where X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome. All estimations contain EA (stratification variable) fixed effects. In this model, $\widehat{\beta_3}$ ($\widehat{\beta_4}$) captures the effect of the LOA (ESR) on the labor market outcomes gaps between female and male (young and older) respondents when using the LOA module (enforced self-reporting).

5 Results

In this section we present the results on the impacts of alternative survey methods on average reporting of employment and work. Then, we investigate the differential effects of the alternative survey methods by sex and age. If the LOA module and self-reporting are effective in capturing better the activities conducted by women or the youth, then we expect that a higher proportion of women (relative to men) and youth (relative to older adults) will report to be working or employed.

5.1. Survey Methods' Impacts on the Measurement of Labor Market Outcomes

To examine whether the LOA module and the enforced self-reporting survey methods increase employment and work on average, we estimate Equation (1) for each of these two outcomes. Table 3, Column (1) shows the different treatments' effects on employment, and Column (2) shows their estimated impacts on the indicator of whether the individual is working. We document two main results. First, the LOA module is effective in reducing the underreporting of labor indicators .. We find that, if participants responded to the LOA module before the standard labor module, then they were 4.0 percentage points (pp, p<0.1) more likely to report being employed compared to the average respondent in C. This estimated effect is equivalent to 6.9% of the average employment of C. Furthermore, the probability of reporting working is 4.3 pp higher when the respondent is exposed to the LOA relative to the average respondent in C (p<0.05; 6.3% of the average work rate for C). Second, we also show that enforced self-reporting has no statistically significant effect on the reporting of employment for the average participant or work relative to proxy reporting (the average respondent in C).

5.2. Survey Methods' Heterogeneous Effects on Labor Market Outcomes

We report the results from Specification (2) in Table 4. Columns (1) and (2) show the heterogeneity results of each survey method on employment and working status, respectively, by sex (female), whereas Columns (3) and (4) present the heterogeneity estimates of each survey method by age (youths are the respondents between the ages of 15 to 24 years).

The results show that the LOA module is more effective at addressing underreporting bias on labor market outcomes for women relative to men. First, we find that exposure to the LOA module reduces the work gap between women and men by 8.2 pp (p<0.05). Although the coefficient for the effect on reporting of employment is not statistically significant at the conventional level, the magnitude of the differential effect of the LOA module on the employment gap between men and women is sizeable and close to 6.3 pp. Second, we also document that the LOA module increases the probability of women reporting to be employed and working by 6.8 and 8.1 pp (p<0.05), respectively, compared to other women in C. Lastly, and similar to the findings for women in Bardasi et al. (2011), we find that enforced self-reporting has no statistically significant differential effect by sex in the reporting of labor information relative to allowing for proxy reporting.

In terms of heterogeneity by age, we show in Table 4, Columns (3) and (4) that the survey methods have no differential effects on the reporting of employment and work between adults and youths. We find only that older adults exposed to the LOA module are 4.3 percentage points (p<0.1) more likely to report working compared to other older adults not exposed to the list. As we explain below, and in line with the results presented in Column (2), older women likely drive this result.

We also note that the magnitudes of the estimated coefficients of the differential impact of enforced self-reporting on working status and employment between youth and adults are relatively large, between 6 and 7 pp, respectively. These findings, however, are not statistically significant at the conventional level. Since these coefficients might capture both age and sex simultaneously, we separate the samples by sex and estimate the differential impacts of each survey method by age using the subsamples of women and men. These results can be found in Table 5. Columns (1) and (2) present the age-related heterogeneity results based on the subsample of women, while Columns (3) and (4) show the heterogeneity impacts by age using the subsample of men. First, we find that enforced self-reporting reduces the employment and work gaps between young and old male respondents by 13.9 and 12.3 pp, respectively. This result seems to be driven by adjustment in the reports for both old and young respondents. On the one hand, older male respondents in the ESR group are less likely to report their labor market indicators relative to other older men assigned to C. On the other hand, although the estimated coefficients are less precise, we also find that young respondents are more likely to increase the reporting of employment and work (8.9 and 7.3 pp, respectively) relative to other young respondents in the C group.

Taking stock. Overall, the LOA module increases the reporting of employment and work relative to C for the average survey respondents. Moreover, alternative survey methods can improve the measurement of labor market gaps based on sex or age. First, the LOA module improves the measurement of woment's work an thus reduces the work gap between women and men. Second, enforced self-reporting improves the labor measurement of young (aged 15 to 24 years) and old respondents, and reduces the work and employment gaps between young and older male respondents.

6 Mechanisms

In this section, we explore potential mechanisms driving the effects of the survey methods presented in Section 5. We test if the LOA and ESR can improve the reporting of women's and young men's labor indicators based on prevalence of peers' informal employment or by social norms related to domestic obligations. Although our findings are suggestive, we believe they warrant further exploration, since they can serve as a starting point for new avenues of methodological and policy-relevant research.

6.1 Prevalence of Local Informality

Women and young men are more likely to engage in informal work in developing countries (ILO 2018). For example, in low- and middle-income countries, 92% of women are engaged in informal employment compared to 87.5% of men. In El Salvador, the gap is wider: 72% of women are engaged in informal work relative to only 56% of men (UN Women, 2023). Standard labor surveys fail to accurately measure informal work or employment because when respondents are asked about income generating activities, they automatically think only about formal employment or work. In contexts where informal employment is high, respondents' reference of labor market indicators may be even more biased. For example, a proxy respondent in a community with high levels of informality may be more likely to report that a woman or youth living in his household are not working because the respondent observes activities that he does not categorize as work or employment.

To test this hypothesis, we first estimate a measure of prevalence of peers' informal employment at the community level to which each respondent is exposed. This measure is defined as the share of employment in the informal sector[16] in each EA by sex, excluding the respondent's employment status.[17] Within our sample, the average informal employment to which the respondents are exposed at the EA-level is 76%, with an average of 70% for men and 84% for women (Table A4). To ease the interpretation of these results, we standardize this

[16] In El Salvador, employment in the informal sector is defined using the characteristics of the entity, enterprise, or employer of the employed population. Thus, a person is employed in the informal sector if any of the following conditions are true: a) the employer does not keep accounts or only keeps accounts for personal use; b) the employer is not registered at the national registry; c) the employer is unincorporated (business and owner are not separate legal entities); d) the place of work is without fixed premises; and e) the employer has fewer than five employees.

[17] By using the average at the EA-level and excluding the respondent, we aim to account for potential endogeneity.

measure, where 1 SD in prevalence measure equals 12 pp or 15 pp of informal female or male employment, respectively. We then interact this measure of prevalence of informal employment with each of the treatment indicators and estimate the results separately by sex and by age. In this sense, the result from the estimation should be interpreted as the differential effects of the survey methods by 1 SD of peers informal employment in the community where the respondent lives.

The results of these estimations for the sample of women are presented in Table 6, Columns (1) to (2), and in Columns (3) to (4) for the sample of young men.[18] We document that enforcing self-reporting is more relevant in contexts in which the incidence of peers' informality in a community is high, improving the measurement of female and youth employment. Specifically, a single SD of exposure to other female peers' informal employment increases the reporting of work of women assigned to ESR by 5.2 pp.[19] Similarly, for every 1 SD in the measure of other male peers' informal employment', young men in ESR are 14.2 pp more likely to report being employed and 10 pp more likely to report working. Moreover, for an average of 1 SD of men's informal employment, young men who were required to respond for themselves to the labor module were 22 pp more likely to report that they were employed or 15.3 pp more likely to respond that they were working relative to other young male respondents for whom self-reporting was not enforced (young men in C) and were exposed to similar levels of peers' informal employment.

We also show that informality in a community has no differential effect on the impacts of using the LOA module. For the sample of women, those assigned to the LOA group increase their reporting of work and employment relative to other women in C, independently of their exposure to peers' informal employment within their community. We find no statistically significant differential effects of the LOA by informal employment in the sample of young men.

In sum, enforcing women and youth to report their own employment or work status, rather than allowing proxy respondents to report for them, may be more relevant when the respondents are living in communities with high incidence of informal employment. Proxy

[18] Results for the sample of men and for older male respondents are presented in Appendix Table A5.
[19] We also interact Equation (2) with an indicator of female to confirm our previous results and to test for differences in the survey methods' effects and prevalence of informal employment by sex and age. These results are presented in Figure 2 and Tables A6 and A7. Overall, our findings using this interactions approach confirm the results obtained when separating the sample by gender and age.

respondents in these communities may assume that women and young adults living in their households and engaged in the informal economy are not employed or working. The LOA module, on the other hand, may address the potential bias driven by the exposure to high informal employment by presenting to respondents a list of activities that are mostly from the informal sector. As a result, this seems to lead to no differences in the reporting of women's and youths' labor market indicators.

6.2 Social Norms around Gendered Work Activities

Occupational and sectoral separation by sex is remarkably persistent over time (World Bank, 2011) and a major contributor to the gender wage gap. The prevalence of working women and men in particular occupations that classify jobs by type and skill and in different sectors of the economy varies greatly (Borrowman & Klasen, 2020). For example, women are more likely to be engaged in a wider range of activities compared to men. They combine unpaid domestic work or caregiving responsibilities, which traditional survey methods may not capture effectively, with income-generating activities. Thus, a hypothesis is that the unpaid domestic work women do (which is partly explained by social norms) is more likely to be underreported (Franck & Olsson, 2014), as well as women's paid work may be prone to undercounting because it is conducted in shorter periods of time and they may consider that it is not worthy to be reported in household surveys.

Considering the types of activities in which women predominantly engage, especially in contexts where women devote a large portion of their time to domestic obligations, we test whether our survey methods measure women's work accurately. To this end, we estimate a measure for the respondent's exposure to social norms associated with domestic obligations. This measure consists of the average amount of time in hours that the women—excluding the respondent—in each EA devote to domestic duties, which we obtain from the main survey's time use module. We then interact this average time with each treatment indicator in a manner similar to Equation (2), but where D_{ihs} is the average time in this exercise, and we estimate the results separately for the sample of men and women.

We present the results from this heterogeneity analysis in Table 7. Columns (1) and (2) and (3) and (4) present the results for the sample of women and men, respectively. We document that for every hour that other women from the community dedicate to domestic duties, female respondents assigned to the LOA group are 5.9 pp and 6.5 pp more likely to report being

employed or working compared to other women living in communities with similar average time spent on housework and who were not exposed to the LOA module. Moreover, although among women assigned to the LOA the estimated difference in the reporting of work by being exposed to an average of one hour spent on housework by other women in the community is not statistically significant at the conventional level, it is worth noting that the magnitude of the difference is large (8.4 pp). This, therefore, indicates that time spent on housework is a potentially relevant mechanism that requires further exploration with a larger sample size.[20] Lastly, women's average time spent on housework in the community does not affect the effectiveness of the ESR in any of the samples under analysis. These findings are consistent with the hypothesis that norms around domestic obligations affect mostly women's own assessment of what constitutes work or employment.

7 Robustness Checks and Additional Results

7.1 Sample Characteristics

To address how our study sample compares to the average household in the regions surveyed we look at the average characteristics of our respondents and the average Salvadoran respondents of the 2022 Household and Multipurpose Survey (EHPM) living in San Salvador and Usulután. We present this comparison in Table A9. Overall, we find that the two samples are similar in terms of age, sex composition, human capital, and marital status, all of which confirm that the average household members who participated in our experiment are similar to the average adult respondent of the EHPM sample.

7.2 Assessing Sensitivity from Selection of Control Variables

As we discussed in Section 4, we use a double LASSO approach to determine the control variables for our estimations. For each main outcome, we test for the stability of our estimated coefficients after excluding the control variables that LASSO selected. As we show in Tables A10 to A12, the estimated coefficients and their statistical significance are stable for most of the results after excluding all control variables selected by LASSO and included in Specifications (1) and (2).

[20] To account for a potential reduction of statistical power due to the separation of the sample by sex, we interact Equation (2) with an indicator for female. These results are presented in Figure 3 and Table A8.

7.3 Randomization Inference

Estimating *p*-values using randomization inference allows us to assign the standard error to a given treatment effect by observing where that treatment effect falls within the distribution of all possible estimated effects from the 1,000 randomizations that we simulated under the assumption of no effects (Heß, 2017; Blattman et al., 2021). We present the estimated randomization inference *p*-values in each table below the estimation of the standard errors and draw the same inferences from using either randomization inference or clustering in the estimation of standard errors.

7.4 Addressing Differences in Household Characteristics Due to Substitution

As mentioned before, we find statistically significant differences in the mean of some baseline variables when we compare original and replaced households. To account for these differences, we add these variables as controls (in addition to the variables selected by LASSO) and summarize the results in Tables A13 to A15. Overall, we do find that our results are robust to controlling for the variables for which we find differences in the replaced households.

7.5 Associations Between Employment and Work and the Proxy Respondents' Characteristics

To explore how the proxies' characteristics can affect the reporting of employment or work for other household members, we restrict the sample to the groups where proxy respondents were allowed—that is, for those assigned to the LOA module and to the control group and when the proxy respondent reported the outcomes of other household members. We focus our analysis on three proxy respondent characteristics: sex, education level (high school or more), and relationship to the household member for whom they are reporting (e.g., spouse, parent, father, mother, etc.). We include an indicator on whether the household was assigned to the LOA treatment to account for their exposure to this alternative survey method. Unlike Bardasi et al. (2011), we did not randomly select the proxy respondent. Therefore, our results can only be interpreted as associations between the aforementioned proxy characteristics and the reporting of the two main outcomes.

The results of this analysis are presented in Table A16. We find that proxies who are better educated are more likely to underreport the employment of women and to increase the reporting of both employment and work for men. More educated proxy respondents may be more aware

of activities related to formal employment, therefore, they may fail to classify informal labor activities, which women are more likely to carry out relative to men, as employment or work. Moreover, proxies who are spouses are more likely to increase the reporting of employment and work of their respective partners, a result that may be driven by a better knowledge about the income generating activities performed by the spouse. No statistically significant associations were found in the sex of the proxy respondent. In sum, selecting the spouse as proxy respondent may offer some advantages in reporting for both men and women. Yet, as a result, this would not address the mismeasurement of the gender-based gap on employment or work. However, selecting the most educated proxy respondent may be good for men, but, conversely, may increase the underreporting of labor market outcomes for women, widening the measurement of gender-based gaps.

7.6 Assessing the Effects in Reporting Employment cross Economic Sectors

According to Bardasi et al. (2011), survey methods can change the reporting of employment and work in different economic sectors. In this sense, we explore if the increase in reporting in employment and work that we observe in our main results is driven by changes in the reporting of employment in one sector relative to either no work (extensive margin) or to other sectors (i.e., intensive margin). Since the main economic activity in the regions under analysis is agriculture, we use this economic sector as a reference and compare the reports of employment in this sector relative to the sectors of manufacture, services, and commerce. These results are presented in Table A17 in the Appendix.

We document three main findings. First, the LOA module has no effects on changes in reporting of employment across economic sectors. Second, enforcing self-responses can increase the reporting of employment in agricultural activities relative to employment in any other economic sector by 3.8 pp. Third, the increase in reporting of employment in agriculture relative to other sectors is driven by women assigned to ESR relative to men treated in ESR (for services and manufacture, by 12.9 and 15.3 pp, respectively) and relative to other women in the control group (13.1 pp for services and 15.4 pp in manufacture). In this sense, enforced self-reporting can help enhance accuracy in the measurement of employment in the economic sectors where respondents work, particularly for women. These results can be explained by the fact that agricultural activities are often perceived to be more irregular than activities in other sectors and

proxy respondents may not classify them as work activities when reporting information for someone else.

8 Cost Implications of the Survey Design

As highlighted in Bardasi et al. (2011), different survey methods may have different implementation costs. We use the cost data related to this randomized survey experiment to estimate the cost implications of each treatment arm. The households' members assigned to LOA underwent a marginally longer interview since they participated in the additional LOA module. It took participants an average of 3.1 minutes to complete this module, and each household assigned to LOA had on average, 2.5 members. Therefore, the additional interview duration per household is 7.8 minutes. Since the average total cost per interview in C was US$135.4 and the average duration was 111.6 minutes, the cost for the additional time required to complete the LOA module is US$9.44 (US$1.21/minute x 7.8 minutes), which corresponds to 6.9% of the total cost per interview for group C. In light of these calculations, the cost implications of adding this module are negligible.

The cost implications of ESR are not small compared to C. Although the average duration of the survey was similar between enforced self-reporting and proxy reporting, the additional costs of ESR are due to the fact that interviewers had to pay more visits to ESR households to ensure that they located all of the respondents. Households in C and LOA needed an average of 1.50 and 1.49 visits, respectively, to collect the necessary information from all respondents. However, households assigned to ESR required an average of 1.94 visits to complete the interviews. Since the average cost per visit per household was US$90.27, it costs 29.6% more to complete an interview in the ESR group compared to C. We do note, however, that these costs are lower than estimates for other settings. For example, Bardasi et al. (2011) calculated that their interviewers needed at least one extra day to track down the respondents, which led to a 50% increase in cost.

In sum, researchers, survey practitioners, and policy makers must evaluate the tradeoffs between more accurate reporting of labor outcomes of youth relative to older adults when self-reporting is enforced versus the additional cost that this survey method entails. If nationally

representative household surveys permit proxy reporting for cost reasons, then further research is needed to assess the implications of this survey method on welfare indicators in each country.

9 Conclusion

Labor market policies that address existing inequalities in access to and quality of jobs are needed more than ever, but especially during global crises (UN, 2023). As existing data reveal, a fundamental challenge when drafting such policies is the fact that measurements of female and youth labor market outcomes may be biased compared to measurements of these same outcomes for men. In this paper, we argue that part of the gap in employment and work between women and men as well as between young and older adults can be attributed to measurement bias—that is, standard survey methods might not be sensitive enough to measure these outcomes as accurately for women and youth as they do for men. This paper aims to contribute to the literature on the sensitivity of survey methods by analyzing the data of a randomized survey experiment conducted in urban and peri-urban regions in El Salvador. The study design made it possible to compare employment and work estimates, obtained from a traditional labor module embedded in a household survey, with two variations in the collection of these outcomes: the LOA module and enforced self-reporting.

In addition, this paper illustrates the effectiveness of our novel survey methods in the context of the prevalence of informal employment and gender norms. We find that the LOA module increases women's reporting of labor outcomes relative to other women who were not exposed to this module, irrespective of the level of peers' informal employment within their communities. On the other hand, exposure to informality can influence the effectiveness of self-reporting survey methods (compared to proxy reporting) in the sample of men. We further observe that proxy respondents in communities with high levels of youth informal employment tend to underreport the labor indicators of their young household members. Conversely, those exposed to high levels of adult informal employment tend to overreport the labor indicators of their adult household members.

Lastly, our results indicate that women living in communities where the traditional division of roles persists are more likely to report being employed or working when they are exposed to the LOA module compared to other women living in similar communities who have not seen this list. In certain cultural or societal contexts like El Salvador, women might not explicitly acknowledge unpaid care as work, which leads to a lack of recognition for the time and effort that they invest in care-related activities. The list of activities can help women (and other members of the community) to recognize unpaid work as a form of work. On a broader level, this new perception can have implications for how unpaid—or domestic—work is valued, understood, addressed, and integrated into discussions on labor, gender roles, and societal contributions.

This paper's findings offer lessons for researchers, survey practitioners, and policy makers responsible for producing national statistics. Specifically, they shed light on the impact that various survey methods have on labor market bias contingent on the sex and age of the respondent. Moreover, given the differences in the budget implications between using the LOA module or enforcint self-reporting survey methods, it is crucial to analyze the trade-offs between collecting data from the actual respondents and the additional cost to do so. In the case of this experiment, enforced self-reporting has a clear impact on the labor indicators of young males that are not captured via traditional household surveys that permit proxy reporting. Yet, this statistical benefit comes at a 30% higher implementation cost. Conversely, the LOA module has a significant impact on capturing higher levels of work and employment, and its implementation costs are negligible.

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Tables and Figures

Table 1. Descriptive Statistics of Household and Individual Characteristics

Variable	(1) Mean	(2) SD	(3) Min.	(4) Max.
PANEL A. Household Characteristics				
Household size (N)	3.71	1.44	1	14
Dependency ratio (%)	0.27	0.20	0	0.8
Households in rural area (%)	0.50	0.50	0	1
Households with assets index above the median (%)	0.47	0.50	0	1
Moderate to severe food insecurity (%)	0.36	0.48	0	1
Remittances received (%)	0.35	0.48	0	1
Households has a non-farm enterprise (%)	0.33	0.47	0	1
Households engages in agricultural activities (%)	0.54	0.50	0	1
Observations	1008			
PANEL B. Individual Characteristics				
Female (%)	0.55	0.50	0	1
Age (years)	35.49	13.52	15	64
High school or higher education (%)	0.28	0.45	0	1
Read and write (%)	0.87	0.33	0	1
Never married (%)	0.34	0.47	0	1
Access to mobile phone (%)	0.88	0.32	0	1
Access to Internet (Wi-Fi) (%)	0.19	0.39	0	1
Observations	2480			

Notes: This table shows the average summary statistics of the household- and individual-level variables—Panels A and B, respectively—used in our analysis. Columns (1) and (2) present the mean and standard deviation (SD) for each characteristic of the participants in our sample. Columns (3) and (4) show the minimum and maximum values of the characteristics, respectively. These variables were collected using the following modules: sociodemographic characteristics, education, food security, household characteristics, and assets. Appendix C includes definitions for each of the variables. All indices are estimated using Anderson's (2008) approach of inverse covariance weighting and take a value between 0 and 1. All variables are dummies except when the unit of measurement is indicated in parentheses.

Table 2. Balance Tests

Variable	(1) Mean C	(2) Mean LOA	(3) Mean ESR	(4) *P*-value LOA vs. C	(5) *P*-value ESR vs. C	(6) *P*-value ESR vs. LOA
PANEL A. Household Characteristics						
Household size (N)	3.723	3.762	3.643	(0.748)	(0.519)	(0.256)
Dependency ratio (%)	0.268	0.253	0.274	(0.274)	(0.665)	(0.212)
Households in rural area (%)	0.500	0.500	0.500	--	--	--
Households with assets index above the median (%)	0.461	0.491	0.461	(0.476)	(1.000)	(0.449)
Moderate to severe food insecurity (%)	0.372	0.354	0.366	(0.637)	(0.883)	(0.722)
Remittances received (%)	0.324	0.369	0.366	(0.213)	(0.201)	(0.934)
Household has a non-farm enterprise (%)	0.333	0.327	0.315	(0.856)	(0.625)	(0.753)
Household engages in agricultural activities (%)	0.560	0.491	0.574	(0.066)	(0.683)	(0.035)
Observations	336	336	336			
PANEL B. Individual Characteristics						
Female (%)	0.549	0.539	0.559	(0.494)	(0.512)	(0.195)
Age (years)	35.006	35.032	36.479	(0.990)	(0.014)	(0.018)
High school or higher education (%)	0.282	0.296	0.275	(0.610)	(0.705)	(0.400)
Read and write (%)	0.878	0.888	0.847	(0.638)	(0.066)	(0.023)
Never married (%)	0.333	0.351	0.320	(0.433)	(0.636)	(0.241)
Access to mobile phone (%)	0.892	0.864	0.888	(0.097)	(0.652)	(0.180)
Access to Internet (Wi-Fi) (%)	0.164	0.193	0.198	(0.241)	(0.110)	(0.721)
Observations	830	854	796			

Notes: This table shows the average characteristics of the household- and individual-level variables—Panels A and B, respectively—by treatment status. Columns (1) to (3) present the mean for each characteristic of households and individuals assigned to C, LOA, and ESR, respectively. Columns (4) to (6) present the *p*-value associated with the hypothesis of the mean values across pairs of groups that are the same. For the estimation of *p*-values, we control for enumeration area (EA) fixed effects (stratification variable) and estimate standard errors at the EA level in Panel A and at the household level in Panel B. The variables presented in this table were collected using the following modules: sociodemographic characteristics, education, food security, household characteristics, and assets. Appendix C contains definitions for each of the variables. All indices are estimated using Anderson's (2008) approach of inverse covariance weighting and take a value between 0 and 1. All variables are dummies except when the unit of measurement is indicated in parentheses.

Table 3. Survey Methods' Impacts on the Reporting of Labor Market Outcomes

	(1) Employed	(2) Working
LOA	0.040*	0.043**
	(0.023)	(0.022)
	[0.078]	[0.047]
ESR	-0.001	-0.012
	(0.024)	(0.023)
	[0.972]	[0.601]
Observations	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670

Notes: This table shows the estimated effects of including the List of Activities (LOA) module or enforcing self-reporting (ESR) when indicating employment or work status. We present the estimated coefficients from Equation (1). Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. All estimations include strata fixed effects and control by variables selected using a double-LASSO procedure (Table A3 in the Appendix shows the variables selected). Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4. Survey Methods' Heterogeneous Effects by Respondent's Sex or Age

	(1)	(2)	(3)	(4)
	D = Female		D = Youth	
	Employed	Working	Employed	Working
LOA	0.005	-0.001	0.033	0.043*
	(0.030)	(0.027)	(0.027)	(0.025)
	[0.863]	[0.971]	[0.215]	[0.062]
ESR	-0.022	-0.025	-0.019	-0.029
	(0.033)	(0.028)	(0.027)	(0.025)
	[0.493]	[0.353]	[0.481]	[0.244]
LOA x D	0.063	0.082**	0.016	-0.007
	(0.043)	(0.041)	(0.052)	(0.052)
	[0.175]	[0.059]	[0.752]	[0.879]
ESR x D	0.042	0.025	0.069	0.064
	(0.046)	(0.044)	(0.051)	(0.050)
	[0.339]	[0.541]	[0.195]	[0.239]
LOA + LOA x D	0.068**	0.081**	0.049	0.036
	(0.033)	(0.033)	(0.045)	(0.045)
	[0.051]	[0.014]	[0.256]	[0.415]
ESR + ESR x D	0.020	-0.000	0.050	0.035
	(0.034)	(0.034)	(0.045)	(0.045)
	[0.567]	[0.993]	[0.291]	[0.442]
Observations	2,480	2,480	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670	0.571	0.670

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by sex and age for conveying employment or work status. We present the ITT estimates from Equation (2) and the total effect of each survey method. The indicator D_{ihs} takes the value of 1 if the respondent is a woman (Columns [1] and [2]) and if the respondent is a youth aged 15 to 24 years (Columns [3] and [4]). The vector X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (Table A3 in the Appendix contains the variables selected). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Heterogeneity for Employment and Work by Age
Samples Separated by Sex

	(1)	(2)	(3)	(4)
	Women		Men	
	Employed	Working	Employed	Working
LOA	0.046	0.059+	0.010	0.020
	(0.039)	(0.038)	(0.034)	(0.029)
	[0.214]	[0.103]	[0.773]	[0.485]
ESR	-0.003	-0.028	-0.049	-0.050*
	(0.039)	(0.039)	(0.036)	(0.030)
	[0.947]	[0.453]	[0.187]	[0.095]
LOA x Youth	0.018	0.010	0.011	-0.031
	(0.071)	(0.073)	(0.076)	(0.070)
	[0.805]	[0.881]	[0.885]	[0.645]
ESR x Youth	0.032	0.044	0.139*	0.123*
	(0.067)	(0.070)	(0.082)	(0.072)
	[0.603]	[0.542]	[0.105]	[0.104]
LOA + LOA x Youth	0.064	0.070	0.021	-0.011
	(0.059)	(0.061)	(0.066)	(0.062)
	[0.265]	[0.252]	[0.740]	[0.857]
ESR + ESR x Youth	0.029	0.016	0.089	0.073
	(0.057)	(0.061)	(0.072)	(0.064)
	[0.588]	[0.786]	[0.227]	[0.273]
Observations	1,361	1,361	1,119	1,119
Outcome (Control Group) Mean	0.436	0.537	0.735	0.832

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by age for the reporting of employment or work status. We separate the samples by sex. We present the ITT estimates from Equation (2), where D_{ihs} takes the value of 1 if the respondent is a youth between the ages of 15 to 24 years, and the total effect of each survey method. The vector X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (see Table A3 in the Appendix for the selected variables). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1, + p<0.130

Table 6. Survey Methods' Differential Effects on Employment and Work Status by Prevalence of Informal Employment

	(1)	(2)	(3)	(4)
	Women		Young Men	
	Employed	Working	Employed	Working
LOA	0.063*	0.077**	-0.012	-0.036
	(0.033)	(0.033)	(0.062)	(0.059)
	[0.059]	[0.017]	[0.843]	[0.569]
ESR	0.013	-0.003	0.077	0.053
	(0.034)	(0.034)	(0.064)	(0.058)
	[0.667]	[0.922]	[0.228]	[0.394]
LOA x Informal employment in the EA	0.008	0.024	0.048	0.082
	(0.032)	(0.032)	(0.056)	(0.055)
	[0.837]	[0.459]	[0.417]	[0.157]
ESR x Informal employment in the EA	0.048	0.052+	0.142**	0.100*
	(0.034)	(0.034)	(0.062)	(0.056)
	[0.145]	[0.108]	[0.026]	[0.078]
LOA + LOA x Informal employment in the EA	0.070	0.100**	0.036	0.046
	(0.047)	(0.045)	(0.084)	(0.081)
	[0.124]	[0.026]	[0.704]	[0.591]
ESR + ESR x Informal employment in the EA	0.060	0.049	0.220**	0.153*
	(0.048)	(0.047)	(0.091)	(0.084)
	[0.181]	[0.285]	[0.012]	[0.067]
Observations	1,361	1,361	301	301
Outcome (Control Group) Mean	0.436	0.537	0.620	0.717

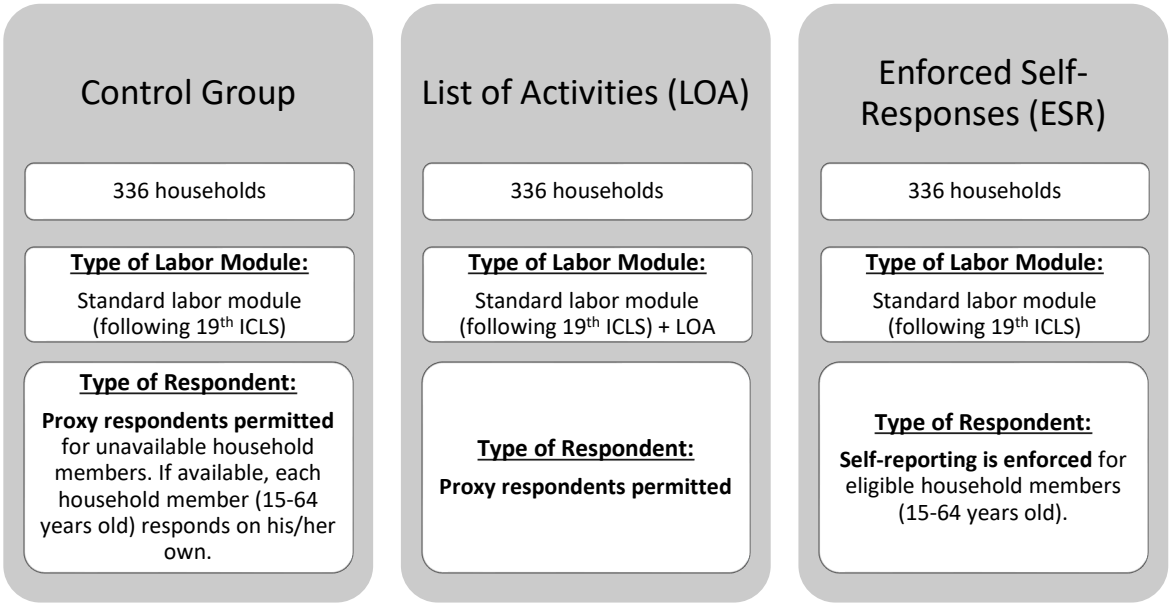
Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by the prevalence of employment in the informal sector. This prevalence measure is estimated as the share of individuals (women in Columns [1] and [2] and men in Columns [3] and [4]) living in the same EA as the respondent and employed in the informal sector. For our estimations, we use informal employment in SD. On average, 1 SD = 11 percentage points of informal employment (see the descriptive statistics and definitions of this indicator in Table A4). This variable is estimated using the standard labor module. We present ITT estimates from Equation (2), where D_{ihs} is the prevalence measure in SD, and the estimations of each survey method's total effect. The vector X_{ihs} includes the variable D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (see Table A3 in the Appendix for the selected variables). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1, + p<0.130

Table 7. Survey Methods' Differential Effects on Employment and Work Status by Exposure to Social Norms Related to Housework

	(1)	(2)	(3)	(4)
	Women		Men	
	Employed	Working	Employed	Working
LOA	0.035	-0.019	-0.033	0.004
	(0.084)	(0.083)	(0.087)	(0.076)
	[0.691]	[0.839]	[0.712]	[0.957]
ESR	-0.040	-0.052	-0.042	-0.003
	(0.085)	(0.086)	(0.090)	(0.066)
	[0.638]	[0.546]	[0.612]	[0.974]
LOA x Average time spent on housework (women)	0.025	0.084	0.038	0.001
	(0.067)	(0.065)	(0.070)	(0.060)
	[0.757]	[0.225]	[0.591]	[0.995]
ESR x Average time spent on housework (women)	0.048	0.045	0.012	-0.020
	(0.065)	(0.067)	(0.076)	(0.052)
	[0.480]	[0.510]	[0.864]	[0.724]
LOA + LOA x Average time spent on housework (women)	0.059*	0.065*	0.004	0.005
	(0.035)	(0.035)	(0.033)	(0.029)
	[0.084]	[0.048]	[0.904]	[0.869]
ESR + ESR x Average time spent on housework (women)	0.008	-0.007	-0.030	-0.023
	(0.037)	(0.036)	(0.034)	(0.029)
	[0.803]	[0.849]	[0.358]	[0.419]
Observations	1,361	1,361	1,119	1,119
Outcome (Control Group) Mean	0.436	0.537	0.735	0.832

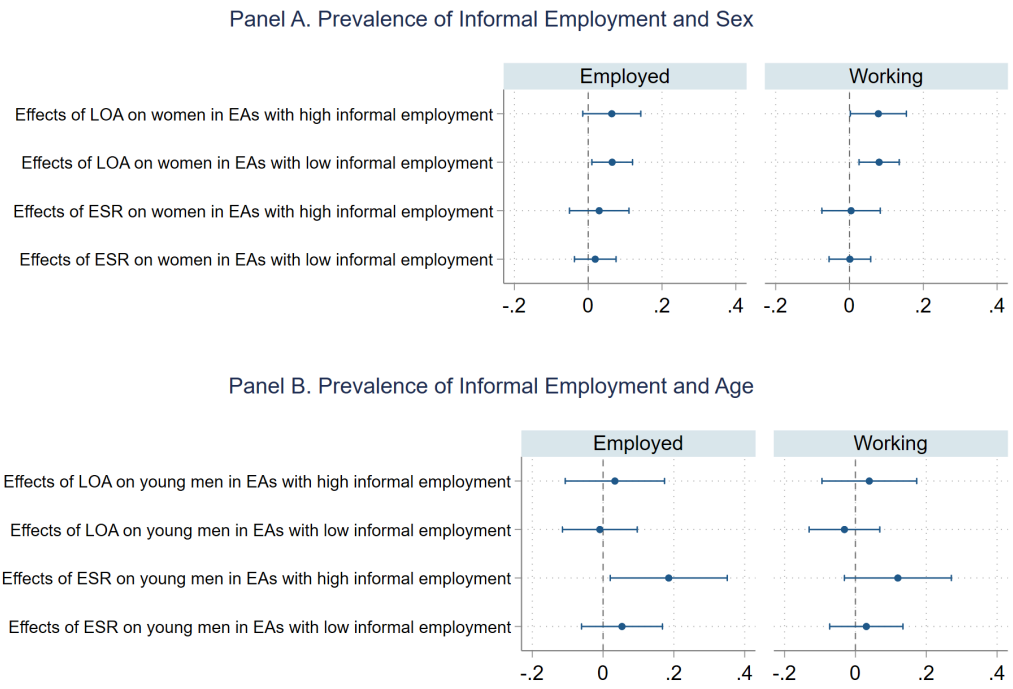
Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by exposure to social norms related to housework. This exposure measure is estimated as the average time that other women in the EA (excluding the respondent) devoted to housework the previous day (Columns [1] and [2]). This variable is estimated using the Time Use module. We present ITT estimates from Equation (2), where D_{ihs} is the exposure measure in hours, and the estimations of the total effect of each survey method (Table A4 contains the descriptive statistics and definition of this measure). The vector X_{ihs} includes the variable D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (Table A3 in the Appendix shows the variables selected). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Figure 1. Experimental Design



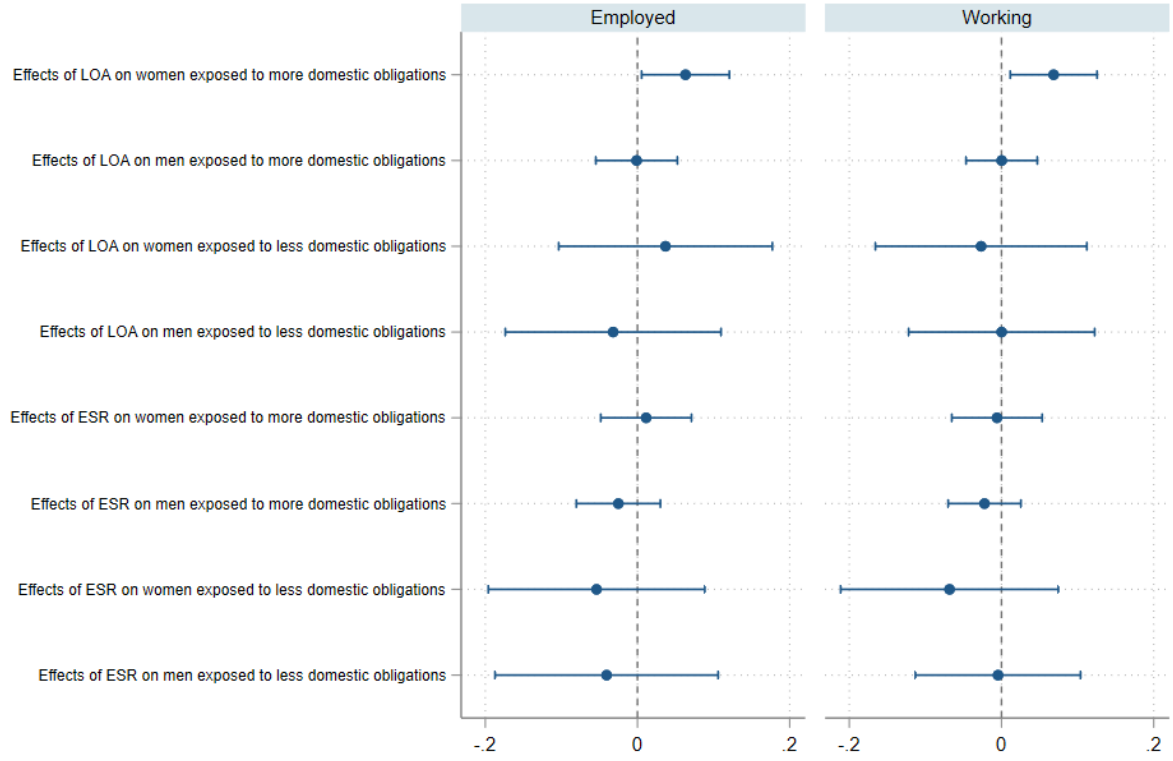
Notes: This figure presents the type of labor module, the type of respondent permitted to report within each experimental group, and the household distributions within each group. The assignments were carried out using stratified randomization at the EA level. LOA=List of Activities module.

Figure 2. Survey Methods' Effects on Employment and Work Status by Prevalence of Informal Employment, Sex and Age



Notes: This figure presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) on the reporting of employment and work status by the prevalence of informal employment. This prevalence measure is estimated as the share of individuals living in the same EA as the respondent and employed in the informal sector. For our estimations, we use informal employment in SD. On average, 1 SD = 11 percentage points of informal employment (see the descriptive statistics and definitions of this indicator in Table A4). We report the total effects of the LOA and ESR for each subsample relative to the group of individuals with similar exposure in the control group. For example, we present the total effect of LOA on women living in communities with a high prevalence of informal employment relative to other women living in communities with a similar prevalence in the control group. These estimated effects were obtained from a model that includes a triple interaction between treatment, sex, and the prevalence measure (including 2,480 observations, see the notes of Table A6 in the Appendix for more details) for Panel A and a triple interaction between treatment, youth, and the prevalence measure (including 1,119 observations, see the notes of Table A7 in the Appendix for more details). Each line represents a 90% confidence interval.

Figure 3. Survey Methods' Effects on Employment and Work Status by Exposure to Social Norms Related to Housework



Notes: This figure presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) on the reporting of employment and work status by exposure to social norms related to housework. This exposure measure is estimated as the average time in hours that other women in the EA (excluding the respondent) devoted to housework the previous day (Columns [1] and [2]). We report the total effects of the LOA and ESR for each subsample relative to the group of individuals with similar exposure in the control group. For example, we present the total effect of the LOA on women exposed to strong norms related to housework relative to other women with similar exposure in the control group. These estimated effects were obtained from a model that includes a triple interaction between the treatment, sex, and the exposure measure (including 2,480 observations, see the notes of Table A8 in the Appendix for more details). Each line represents a 90% confidence interval.

Appendix Tables and Figures

Table A1. List of Activities Module

During the past week, from Monday [DATE] to Sunday [DATE], did [NAME]…											
Agricultural activities		**Production of items for sale**			**Provision of services**						
1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11**	**12**
... do any agricultural work, care for your livestock, or fish for one or more hours?	... help a family member with agricultural work, take care of the family's livestock, or fish for one or more hours?	... sell items such as clothing, cell phones, shoes, jewelry, etc. for an hour or more?	... make items to sell, such as tamales, jelly, food, jewelry, etc. for one or more hours?	... sell homemade items such as tamales, jelly, food, jewelry, etc. for one or more hours?	... provide services such as hairstyling, repairs, or masonry, injecting medicines, or caring for the sick or elderly for one or more hours?	... provide transportation services such as taxi, Uber, Mototaxi, pickup truck, or minibus for one or more hours?	... provide home delivery services for one or more hours?	... cook, launder, or perform other services for people for one or more hours?	... help in a non-agricultural family business for one or more hours?	… engage (or be willing to engage) in activities that generate any type of income?	What other activities not mentioned here did [NAME] engage in to generate income?
YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	YES...1 NO....2	

Notes: This table shows the List of Activities (LOA) module that was included in the survey instrument used to collect data from all randomly selected working-age individuals living in the households assigned to the LOA module.

Table A2. Modules Included in the Survey

#	Module	Level	Respondent	Proxy Permitted?
0	Cover	Household	Main respondent	Yes
1	Household Roster	Individual	Main respondent	Yes
2	Education and Technology	Individual	Individuals 15-64 years old	Yes
3	**List of Activities**	**Individual**	**Individuals 15-64 years old**	**Yes**
4	**Labor**	**Individual**	**Individuals 15-64 years old**	**Yes**
5	Skills and Work Readiness	Individual	Individuals 15-64 years old	No
6	Aspirations	Individual	Individuals 15-64 years old	No
7	Time Use	Individual	Individuals 15-64 years old	No
8	Social Norms	Individual	Individuals 15-64 years old	No
9	Social Desirability	Individual	Individuals 15-64 years old	No
10	Discrete Choice Experiment	Individual	Literate individuals 15-64 years old	No
11	Risk Aversion	Individual	Individuals 15-64 years old	No
12	Housing	Household	Main respondent	
13	Household Enterprises Flap	Household	Main respondent	
14	Household Enterprises	Enterprise	Main respondent	
15	Food Security	Household	Main respondent	
16	Agriculture	Household	Main respondent	
17	Assets	Household	Main respondent	
18	Other Income	Household	Main respondent	
19	Contact	Household	Main respondent	

Notes: This table shows the modules included in the survey, along with the corresponding question level and respondent type. We also report whether proxy respondents were permitted for each of the modules at the individual level. For example, data for module Time Use was collected only if the individual him/herself was available at the time of the survey and self-reported the data directly. If the household was assigned to the LOA or C, then we then collected self-reported data on time use only from those respondents who were available at the time of the survey.

Table A3. LASSO-Selected Control Variables for Each Outcome and Model

# Table	Outcome	Access to Mobile Phone	Sex (=1 if Female)	Education Level: High school or Higher	Marital Status (=1 if never married)	Can Read or Write	Age
Table 3	Employed (Column 1)	√	√	√	√		
	Working (Column 2)	√	√	√	√		
Table 4	Employed (Column 1)	√	√	√	√	√	
	Working (Column 2)	√	√	√	√		
	Employed (Column 3)	√	√	√		√	
	Working (Column 4)	√	√	√		√	
Table 5	Employed (Column 1)			√			
	Working (Column 2)						
	Employed (Column 3)	√				√	
	Working (Column 4)	√			√		
Table 6	Employed (Column 1)						
	Working (Column 2)						
	Employed (Column 3)				√		√
	Working (Column 4)				√		√
Table 7	Employed (Column 1)						
	Working (Column 2)						
	Employed (Column 3)	√			√		
	Working (Column 4)	√			√		
Table A7	Employed (Column 1)	√			√		
	Working (Column 2)	√			√		
	Employed (Column 3)	√				√	√
	Working (Column 4)	√					
Table A8	Employed (Column 1)	√	√	√	√	√	
	Working (Column 2)	√	√	√	√		
Table A9	Employed (Column 1)	√			√	√	
	Working (Column 2)	√			√		
Table A10	Employed (Column 1)	√	√	√	√	√	
	Working (Column 2)	√	√	√	√		

Notes: This table reports the control variables selected using the LASSO approach for each outcome and model (table) used in our estimations.

Table A4. Summary Statistics for Variables Used for the Mechanisms Analysis

	Mean (1)	SD (2)	Median (3)	Min. (4)	Max. (5)	N (6)
PANEL A. ***Non-Standardized***						
Informal employment in the EA (share of women)	0.84	0.11	0.85	0.55	1.00	2480
Informal employment in the EA (share of men)	0.70	0.15	0.71	0.17	1.00	2480
Average time spent on housework (women, hours)	1.14	0.48	1.05	0.22	2.80	2480
PANEL B. ***Standardized***						
Informal employment in the EA (share of women, SD)	0.00	1.00	0.12	-2.75	1.51	2480
Informal employment in the EA (share of men, SD)	0.00	1.00	0.05	-3.54	2.02	2480

Notes: This table reports summary statistics for the variables *average informal employment* and *women's average time (hours) spent on housework*, both measured at the EA-level. The variable *prevalence of employment in the informal sector* is estimated in SD as the share of individuals living in the same EA as the respondent and employed in the informal sector. This variable is estimated using the standard labor module based on the sample of employed individuals. An individual is working in the informal sector if the firm (production unit) or employer meets any of the following criteria: a) does not keep accounts or only keeps accounts for personal use; b) is not registered at the national level; c) is unincorporated (business and owner are not separate legal entities); d) place of work is without a fixed premises; or e) the firm has fewer than five employees. The variable *women's average time spent on housework* is estimated as the average time in hours that other women in the EA (excluding the female respondent) devoted to housework the previous day.

Table A5. Survey Methods' Differential Effects on Employment and Work Status by Prevalence of Peers' Informal Employment

Male Respondents Only

	(1)	(2)	(3)	(4)
	All Men		Adult Men	
	Employed	Working	Employed	Working
LOA	0.009	0.004	0.010	0.014
	(0.031)	(0.027)	(0.034)	(0.028)
	[0.773]	[0.866]	[0.755]	[0.620]
ESR	-0.028	-0.027	-0.044	-0.046
	(0.033)	(0.028)	(0.036)	(0.031)
	[0.379]	[0.332]	[0.220]	[0.120]
LOA x Informal employment in the EA	-0.026	0.026	-0.051	0.008
	(0.032)	(0.030)	(0.036)	(0.034)
	[0.359]	[0.319]	[0.118]	[0.765]
ESR x Informal employment in the EA	-0.007	0.027	-0.046	0.006
	(0.035)	(0.030)	(0.038)	(0.036)
	[0.842]	[0.295]	[0.232]	[0.846]
LOA + LOA x Informal employment in the EA	-0.017	0.031	-0.041	0.022
	(0.043)	(0.040)	(0.049)	(0.044)
	[0.718]	[0.425]	[0.400]	[0.587]
ESR + ESR x Informal employment in the EA	-0.034	0.000	-0.090*	-0.041
	(0.047)	(0.041)	(0.051)	(0.047)
	[0.423]	[0.999]	[0.072]	[0.351]
Observations	1,119	1,119	818	818
Outcome (Control Group) Mean	0.735	0.832	0.773	0.869

Notes: This table presents treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by the prevalence of employment in the informal sector. This prevalence measure is estimated as the share of all men living in the same EA as the respondent and employed in the informal sector. This variable is estimated using the standard labor module (see the descriptive statistics and definitions of this indicator in Table A6). We present ITT estimates from Equation (2), where D_{ihs} is the prevalence of youth employment measure (in SD), and the estimations of each survey method's total effect. The vector X_{ihs} includes the variable D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (see Table A3 in the Appendix for the variables selected). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A6. Survey Methods' Differential Effects on Employment and Work Status by Prevalence of Informal Employment

	(1) Employed	(2) Working
Informal employment in the EA	-0.016	-0.042**
	(0.023)	(0.020)
Female	-0.297***	-0.292***
	(0.031)	(0.030)
LOA	0.002	-0.002
	(0.030)	(0.027)
ESR	-0.024	-0.026
	(0.033)	(0.028)
LOA x Female	0.063	0.082**
	(0.043)	(0.041)
ESR x Female	0.043	0.027
	(0.046)	(0.043)
Informal employment in the EA x Female	0.024	0.058*
	(0.037)	(0.034)
LOA x Informal employment in the EA	-0.008	0.029
	(0.031)	(0.028)
ESR x Informal employment in the EA	0.013	0.029
	(0.034)	(0.029)
LOA x Informal employment in the EA x Female	0.007	-0.031
	(0.048)	(0.046)
ESR x Informal employment in the EA x Female	-0.002	-0.025
	(0.051)	(0.047)
Treatment Effects		
Effects of LOA on men in EAs with low informal employment	0.002	-0.002
Effects of LOA on men in EAs with high informal employment	-0.006	0.027
Effects of LOA on women in EAs with low informal employment	0.065*	0.080**
Effects of LOA on women in EAs with high informal employment	0.064	0.078*
Effects of ESR on men in EAs with low informal employment	-0.024	-0.026
Effects of ESR on men in EAs with high informal employment	-0.010	0.002
Effects of ESR on women in EAs with low informal employment	0.019	0.001
Effects of ESR on women in EAs with high informal employment	0.030	0.004
Observations	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by the prevalence of informal employment. This prevalence measure is estimated as the share of individuals living in the same EA as the respondent and employed in the informal sector (see the descriptive statistics and definitions of this indicator in Table A4). We present estimated coefficients from a model that includes a triple interaction between the treatment, sex, and the exposure measure. We control for a vector of variables (X_{ihs}) that includes sex, the prevalence measure, double interactions, and the list of control variables selected using a double-LASSO procedure for each outcome. Under *Treatment Effects* we report the total effects of the LOA and ESR on subsample relative to the group of individuals with similar exposure in the control group. For example, we present the total effect of LOA on women in EAs with high exposure to informal employment relative to other women with similar exposure in the control group (see Panel A in Figure 2 for a graphic representation of these total effects). The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7. Survey Method's Differential Effects on Employment and Work Status by Prevalence of Informal Employment

Male Respondents Only

	(1) Employed	(2) Working
Informal employment in the EA	0.029	-0.010
	(0.028)	(0.026)
Youth	-0.082	-0.058
	(0.056)	(0.050)
LOA	0.016	0.019
	(0.034)	(0.028)
ESR	-0.050	-0.047
	(0.036)	(0.031)
LOA x Youth	-0.025	-0.050
	(0.073)	(0.067)
ESR x Youth	0.103	0.078
	(0.078)	(0.069)
Informal employment in the EA x Youth	-0.100**	-0.060
	(0.050)	(0.047)
LOA x Informal employment in the EA	-0.045	0.011
	(0.036)	(0.034)
ESR x Informal employment in the EA	-0.049	0.007
	(0.038)	(0.035)
LOA x Informal employment in the EA x Youth	0.087	0.060
	(0.067)	(0.064)
ESR x Informal employment in the EA x Youth	0.182**	0.082
	(0.079)	(0.070)
Treatment Effects		
Effects of LOA on adult men in EAs with low informal employment	0.016	0.019
Effects of LOA on adult men in EAs with high informal employment	-0.029	0.030
Effects of LOA on young men in EAs with low informal employment	-0.009	-0.031
Effects of LOA on young men in EAs with high informal employment	0.033	0.039
Effects of ESR on adult men in EAs with low informal employment	-0.050	-0.047
Effects of ESR on adult men in EAs with high informal employment	-0.099**	-0.040
Effects of ESR on young men in EAs with low informal employment	0.053	0.031
Effects of ESR on young men in EAs with high informal employment	0.186*	0.120
Observations	1,119	1,119
Outcome (Control Group) Mean	0.735	0.832

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by the prevalence of informal employment. This prevalence measure is estimated as the share of all men living in the same EA as the respondent and employed in the informal sector (see the descriptive statistics and definitions of this indicator in Table A4). We present estimated coefficients from a model that includes a triple interaction between the treatment, sex, and the exposure measure. We control for a vector of variables (X_{ihs}) that includes sex, the prevalence measure, double interactions, and the list of control variables selected using a double-LASSO procedure for each outcome. Under *Treatment Effects* we report the total effects of the LOA and ESR for each subsample relative to the group of individuals with similar exposure in the control group (see Panel B in Figure 2 for a graphic representation of these total effects). The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A8. Survey Methods' Differential Effects on Employment and Work Status by Exposure to Social Norms Related to Housework

	(1) Employed	(2) Working
Average time spent on housework (hours)	-0.044	-0.001
	(0.048)	(0.036)
Female	-0.268***	-0.207**
	(0.088)	(0.080)
LOA	-0.032	0.000
	(0.086)	(0.074)
ESR	-0.041	-0.005
	(0.089)	(0.066)
LOA x Female	0.069	-0.027
	(0.123)	(0.114)
ESR x Female	-0.013	-0.064
	(0.124)	(0.110)
Average time spent on housework x Female	-0.026	-0.074
	(0.072)	(0.065)
LOA x Average time spent on housework	0.031	0.000
	(0.069)	(0.060)
ESR x Average time spent on housework	0.015	-0.018
	(0.074)	(0.052)
LOA x Average time spent on housework x Female	-0.005	0.095
	(0.099)	(0.092)
ESR x Average time spent on housework x Female	0.050	0.080
	(0.100)	(0.087)
Treatment Effects		
Effects of LOA on men exposed to less housework	-0.032	0.000
Effects of LOA on men exposed to more housework	-0.001	0.000
Effects of LOA on women exposed to less housework	0.037	-0.027
Effects of LOA on women exposed to more housework	0.063*	0.069*
Effects of ESR on men exposed to less housework	-0.041	-0.005
Effects of ESR on men exposed to more housework	-0.025	-0.022
Effects of ESR on women exposed to less housework	-0.054	-0.068
Effects of ESR on women exposed to more housework	0.011	-0.006
Observations	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by exposure to social norms for housework. This exposure measure is estimated as the average time in hours that other women in the EA devoted to housework the previous day. This variable is estimated using the Time Use module. We present estimated coefficients from a model that includes a triple interaction between the treatment, sex, and the exposure measure. We control for a vector of variables (X_{ihs}) that includes sex, the exposure measure, double interactions, and the list of control variables selected using a double-LASSO procedure for each outcome. Under *Treatment Effects* we report the total effects of the LOA and ESR for each subsample relative to the group of individuals with similar exposure in the control group (see Figure 3 for a graphic representation of these total effects). The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A9. Mean Characteristics of the Study Participants vs. General Population of Salvadorians

Variable	(1) Study Sample	(2) EHPM Usulután and San Salvador	(3) *P*-val. Diff.	(4) Study Sample Usulután	(5) EHPM Usulután	(6) *P*-val. Diff.	(7) Study Sample San Salvador	(8) EHPM San Salvador	(9) *P*-val. Diff.
Age (years)	35.487	35.081	(0.836)	35.658	35.748	(0.976)	35.325	34.457	(0.733)
Female (%)	0.549	0.541	(0.916)	0.556	0.536	(0.850)	0.542	0.547	(0.960)
High school or higher education	0.285	0.281	(0.951)	0.249	0.221	(0.757)	0.319	0.337	(0.843)
Read or write	0.871	0.878	(0.886)	0.846	0.824	(0.791)	0.895	0.928	(0.501)
Never married	0.335	0.295	(0.536)	0.330	0.258	(0.451)	0.340	0.329	(0.902)
Access to mobile phone	0.983	0.986	(0.856)	0.981	0.977	(0.903)	0.984	0.994	(0.518)
Access to internet (Wi-Fi)	0.185	0.156	(0.581)	0.168	0.125	(0.556)	0.202	0.186	(0.828)
Observations	2,480	2,212		1,210	804		1,270	1,408	

Notes: This table compares the average characteristics of the individuals in our sample and individuals in El Salvador. The 2022 Household and Multipurpose Survey (EHPM) provided the data for individuals in El Salvador that we compared to data that we measured similarly in our survey. Columns (1) to (3) compare the two full samples and Columns (4) to (9) compare the samples by the Departments of San Salvador and Usulután. We restricted the EHPM sample to working-age household members (aged 15 to 64 years) in rural areas.

Table A10. Survey Methods' Impacts on the Measurement of Labor Market Outcomes, Excluding Controls

	(1) Employed	(2) Working
LOA	0.037	0.040*
	(0.023)	(0.022)
	[0.148]	[0.086]
ESR	-0.004	-0.014
	(0.025)	(0.023)
	[0.879]	[0.585]
Observations	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670

Notes: This table shows the estimated effects of including the LOA module (LOA) or enforcing self-reporting (ESR) on reporting employment or work status. We present estimated coefficients from Equation (1). Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. All estimations include strata fixed effects only. Standard errors clustered at the household level are presented in parentheses, and the randomization inference *p*-values are shown in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A11. Survey Methods' Heterogeneous Effects by Respondent's Sex and Age, Excluding Controls

	(1)	(2)	(3)	(4)
	D = Female		D = Youth	
	Employed	Working	Employed	Working
LOA	-0.000	-0.008	0.023	0.033
	(0.031)	(0.027)	(0.027)	(0.025)
	[0.983]	[0.774]	[0.380]	[0.165]
ESR	-0.020	-0.020	-0.033	-0.042
	(0.034)	(0.029)	(0.028)	(0.026)
	[0.561]	[0.477]	[0.252]	[0.111]
LOA x D	0.064	0.084**	0.053	0.028
	(0.044)	(0.042)	(0.054)	(0.054)
	[0.185]	[0.055]	[0.314]	[0.593]
ESR x D	0.033	0.016	0.095*	0.089*
	(0.047)	(0.044)	(0.054)	(0.054)
	[0.473]	[0.694]	[0.094]	[0.128]
LOA + LOA x D	0.063*	0.075**	0.076	0.061
	(0.033)	(0.032)	(0.046)	(0.047)
	[0.065]	[0.022]	[0.104]	[0.193]
ESR + ESR x D	0.013	-0.005	0.062	0.047
	(0.034)	(0.034)	(0.048)	(0.048)
	[0.707]	[0.884]	[0.214]	[0.347]
Observations	2,480	2,480	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670	0.571	0.670

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by sex and age for the reporting of employment or work status. We present the ITT estimates of β_1 - β_4 based on the following equation: $Y_{ihs} = \alpha_0 + \beta_1 T1_{hs} + \beta_2 T2_{hs} + \beta_3 T1 \times D_{ihs} + \beta_4 T2 \times D_{ihs} + \Theta D_{ihs} + b_s + \epsilon_{ihs}$. We also include estimations of the total effect of each survey method ($\beta_1 + \beta_3$ for the LOA module, and $\beta_2 + \beta_4$ for proxy-reporting) at the end of each table. The indicator D_{ihs} takes the value of 1 if the respondent is a woman (Columns [1] and [2]) and if the respondent is a youth between the ages of 15 to 24 years (Columns [3] and [4]). All estimations include strata fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level (randomization level) are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A12. Heterogeneity for Employment and Work by Age, Excluding Controls

	(1)	(2)	(3)	(4)
	Women		Men	
	Employed	Working	Employed	Working
LOA	0.045	0.059	0.009	0.014
	(0.039)	(0.038)	(0.035)	(0.029)
	[0.216]	[0.103]	[0.812]	[0.619]
ESR	-0.006	-0.028	-0.053	-0.048
	(0.039)	(0.039)	(0.037)	(0.031)
	[0.897]	[0.453]	[0.175]	[0.131]
LOA x Youth	0.026	0.010	0.012	-0.032
	(0.071)	(0.073)	(0.077)	(0.072)
	[0.719]	[0.881]	[0.881]	[0.636]
ESR x Youth	0.035	0.044	0.155*	0.135*
	(0.068)	(0.070)	(0.083)	(0.074)
	[0.579]	[0.542]	[0.081]	[0.095]
LOA + LOA x Youth	0.071	0.070	0.021	-0.018
	(0.058)	(0.061)	(0.067)	(0.064)
	[0.204]	[0.252]	[0.739]	[0.779]
ESR + ESR x Youth	0.029	0.016	0.102	0.088
	(0.057)	(0.061)	(0.073)	(0.066)
	[0.586]	[0.786]	[0.178]	[0.215]
Observations	1,361	1,361	1,119	1,119
Outcome (Control Group) Mean	0.436	0.537	0.735	0.832

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by age for the reporting of employment or work status. We present the ITT estimates of β_1 - β_4 based on the following equation: $Y_{ihs} = \alpha_0 + \beta_1 T1_{hs} + \beta_2 T2_{hs} + \beta_3 T1 \times D_{ihs} + \beta_4 T2 \times D_{ihs} + \Theta D_{ihs} + b_s + \epsilon_{ihs}$. We also include estimations of the total effect of each survey method ($\beta_1 + \beta_3$ for the LOA module, and $\beta_2 + \beta_4$ for proxy-reporting) at the end of each table. The indicator D_{ihs} takes the value of 1 if the respondent is a youth between the ages of 15 to 24 years (Columns [1] to [4]). All estimations include strata fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level (randomization level) are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A13. Survey Methods' Impacts on the Measurement of Labor Market Outcomes, Addressing the Substitution Protocol's Effects

	(1) Employed	(2) Working
LOA	0.040*	0.044**
	(0.023)	(0.022)
	[0.081]	[0.043]
ESR	-0.001	-0.011
	(0.024)	(0.023)
	[0.966]	[0.620]
Observations	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670

Notes: This table shows the estimated effects of including the LOA module (LOA) or enforcing self-reporting (ESR) on the reporting of employment or work status. We present estimated coefficients from Equation (1). Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. All estimations include strata fixed effects and are controlled by variables selected using a double-LASSO procedure (Table A3 in the Appendix shows the selected variables). Standard errors clustered at the household level are presented in parentheses, and the randomization inference *p*-values are shown in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A14. Survey Methods' Heterogeneous Effects by Respondent's Sex and Age, Addressing the Substitution Protocol's Effects

	(1)	(2)	(3)	(4)
	D = Female		D = Youth	
	Employed	Working	Employed	Working
LOA	0.005	-0.000	0.033	0.044*
	(0.030)	(0.027)	(0.027)	(0.025)
	[0.866]	[0.993]	[0.215]	[0.059]
ESR	-0.023	-0.024	-0.019	-0.028
	(0.033)	(0.028)	(0.028)	(0.025)
	[0.492]	[0.375]	[0.481]	[0.262]
LOA x D	0.063	0.081*	0.016	-0.007
	(0.044)	(0.042)	(0.052)	(0.052)
	[0.174]	[0.059]	[0.753]	[0.879]
ESR x D	0.043	0.024	0.069	0.063
	(0.047)	(0.044)	(0.052)	(0.051)
	[0.339]	[0.568]	[0.195]	[0.241]
LOA + LOA x D	0.068**	0.081**	0.049	0.036
	(0.033)	(0.033)	(0.045)	(0.045)
	[0.051]	[0.014]	[0.256]	[0.405]
ESR + ESR x D	0.020	-0.000	0.050	0.036
	(0.034)	(0.034)	(0.045)	(0.045)
	[0.567]	[0.995]	[0.291]	[0.435]
Observations	2,480	2,480	2,480	2,480
Outcome (Control Group) Mean	0.571	0.670	0.571	0.670

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by sex and age for the reporting of employment or work status. We present the ITT estimates from Equation (2) and the total effect of each survey method. The indicator D_{ihs} takes the value of 1 if the respondent is a woman (Columns [1] and [2]) and if the respondent is a youth between the ages of 15 to 24 years (Columns [3] and [4]). The vector X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (Table A3 in the Appendix shows the variables selected). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A15. Heterogeneity for Employment and Work by Age, Addressing the Substitution Protocol's Effects

	(1)	(2)	(3)	(4)
	Women		Men	
	Employed	Working	Employed	Working
LOA	0.052	0.069*	0.009	0.019
	(0.039)	(0.038)	(0.034)	(0.029)
	[0.154]	[0.058]	[0.806]	[0.501]
ESR	0.001	-0.022	-0.052	-0.052*
	(0.039)	(0.039)	(0.036)	(0.030)
	[0.987]	[0.551]	[0.161]	[0.084]
LOA x Youth	0.018	0.009	0.010	-0.031
	(0.071)	(0.073)	(0.076)	(0.070)
	[0.799]	[0.894]	[0.886]	[0.647]
ESR x Youth	0.031	0.041	0.139*	0.123*
	(0.068)	(0.070)	(0.080)	(0.072)
	[0.621]	[0.578]	[0.107]	[0.104]
LOA + LOA x Youth	0.071	0.077	0.019	-0.012
	(0.059)	(0.062)	(0.066)	(0.063)
	[0.223]	[0.198]	[0.751]	[0.847]
ESR + ESR x Youth	0.032	0.019	0.087	0.072
	(0.057)	(0.060)	(0.072)	(0.064)
	[0.552]	[0.755]	[0.235]	[0.293]
Observations	1,361	1,361	1,119	1,119
Outcome (Control Group) Mean	0.436	0.537	0.735	0.832

Notes: This table presents the treatment heterogeneity of including the LOA module (LOA) or enforcing self-reporting (ESR) by age for the reporting of employment or work status. We separate the samples by sex. We present the ITT estimates from Equation (2), where D_{ihs} takes the value of 1 if the respondent is a youth between the ages of 15 to 24 years, as well as the total effect of each survey method. The vector X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome (see Table A3 in the Appendix for the outcome variables). All estimations include EA (stratification variable) fixed effects. Each column is a separate dependent variable as defined in Section 3. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A16. Participation in Employment and Work by the Proxy Respondent's Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Employed						Working					
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
LOA	0.032	0.002	0.051	0.005	0.034	0.005	0.048	-0.014	0.062	-0.012	0.050	-0.013
	(0.062)	(0.040)	(0.062)	(0.040)	(0.062)	(0.040)	(0.063)	(0.036)	(0.063)	(0.035)	(0.062)	(0.035)
	[0.650]	[0.956]	[0.450]	[0.907]	[0.625]	[0.919]	[0.484]	[0.715]	[0.356]	[0.773]	[0.467]	[0.744]
Proxy is female	-0.090	-0.022					-0.089	-0.019				
	(0.067)	(0.081)					(0.066)	(0.072)				
Proxy has high school education or higher			-0.143*	0.076*					-0.086	0.067*		
			(0.073)	(0.044)					(0.077)	(0.038)		
Proxy is spouse					0.169**	0.120*					0.151**	0.074
					(0.077)	(0.065)					(0.076)	(0.051)
Observations	261	448	261	448	261	448	261	448	261	448	261	448
Outcome (Control Group) Mean	0.476	0.749	0.476	0.749	0.476	0.749	0.524	0.835	0.524	0.835	0.524	0.835

Notes: This table presents the associations between the proxy respondent's characteristics and the probability of the proxy reporting employment and work status. The sample is restricted to participants assigned to the LOA and control group. We present ITT estimates from the following equation: $Y_{ihs} = \alpha_0 + \beta_1 T1_{hs} + \Theta X_{ihs} + b_s + \epsilon_{ihs}$. The vector X_{ihs} includes the list of control variables selected using a double-LASSO procedure for each outcome. All estimations include EA (stratification variable) fixed effects. The control mean refers to the mean of the control group for each outcome. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A17. Survey Methods' Effects on Employment Across Economic Sectors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Agriculture vs. No Working		Agriculture vs. Other Sectors		Agriculture vs. Services		Agriculture vs. Manufacture		Agriculture vs. Commerce	
LOA	0.010	-0.022	0.018	0.036	0.006	0.009	0.021	0.014	0.025	0.075
	(0.028)	(0.056)	(0.022)	(0.033)	(0.036)	(0.047)	(0.043)	(0.050)	(0.040)	(0.054)
	[0.708]	[0.682]	[0.369]	[0.228]	[0.858]	[0.815]	[0.591]	[0.778]	[0.480]	[0.139]
ESR	-0.003	-0.050	0.038+	0.018	0.047	0.002	0.061	0.001	0.048	0.038
	(0.030)	(0.058)	(0.024)	(0.033)	(0.037)	(0.046)	(0.046)	(0.054)	(0.043)	(0.055)
	[0.906]	[0.382]	[0.087]	[0.571]	[0.175]	[0.956]	[0.165]	[0.979]	[0.212]	[0.503]
LOA x Female		0.051		-0.039		-0.008		0.024		-0.110
		(0.063)		(0.043)		(0.069)		(0.094)		(0.068)
		[0.419]		[0.329]		[0.903]		[0.796]		[0.110]
ESR x Female		0.072		0.044		0.129 *		0.153+		0.021
		(0.064)		(0.044)		(0.072)		(0.102)		(0.071)
		[0.272]		[0.317]		[0.069]		[0.103]		[0.775]
LOA + LOA x Female		0.029		-0.004		0.001		0.038		-0.034
		(0.029)		(0.028)		(0.052)		(0.080)		(0.051)
		[0.306]		[0.910]		[0.984]		[0.607]		[0.496]
ESR + ESR x Female		0.022		0.062**		0.131**		0.154**		0.059
		(0.031)		(0.032)		(0.057)		(0.085)		(0.056)
		[0.440]		[0.034]		[0.022]		[0.036]		[0.271]
Observations	1,085	1,085	1,530	1,530	885	885	535	535	696	696
Outcome (Control Group) Mean	0.241	0.241	0.174	0.174	0.314	0.314	0.515	0.515	0.380	0.380

Notes: This table presents the treatment effects of including the LOA module (LOA) or enforcing self-reporting (ESR) by sex for the extensive and intensive margins in the reporting of employment in the agricultural sector. Columns (1) and (2) present the results on an indicator that takes the value of 1 if the individual is working in agriculture and 0 if the individual is not working. Columns (3) and (4) show the results for an indicator equal to 1 if the individual reports being working in agriculture and 0 if the individual is working in other sectors (e.g., manufacture, services, and industry). The outcome in Columns (5) through (10) is measured as an indicator that takes the value of 1 if the individual reports being working in agriculture and 0 if the individual is working in services (Columns [5] and [6]), manufacture (Columns [7] and [8]), or commerce (Columns [9] and [10]). The vector X_{ihs} includes the indicator D_{ihs} and the list of control variables selected using a double-LASSO procedure for each outcome. All estimations include EA (stratification variable) fixed effects. Standard errors clustered at the household level are presented in parentheses, and the randomization inference p-values are shown in brackets. *** p<0.01, ** p<0.05, * p<0.1, +p<0.102

Appendix A. Qualitative Study

This appendix provides further information on the methods used in the qualitative component of this study and their main results.

A1.1. Focus Group Discussions

The main goal of this qualitative study is twofold: (1) to create a list of activities considered work in rural and peri-urban communities in El Salvador, and (2) to understand the barriers that women and young people face in entering the labor market and obtaining formal employment.

We conducted eight focus groups between June 13 and July 8, 2022 in six Salvadoran municipalities located in the Department of San Salvador (Nejapa and Guazapa) and the Department of Usulután (Jiquilisco, Puerto El Triunfo, San Dionisio, and California). The focus groups were stratified by age and gender. Four of the focus groups included youth between the ages of 18 and 29 years (two with men and two with women), and the four other focus groups included adults aged 29 years and older (two with women and two mixed). A total of 58 people attended the focus groups: 40 women and 18 men within their respective municipalities.

Table AP_A1. Focus Group Participants by Gender and Municipality

Municipality	Men	Women	Total
Nejapa (young men)	7	0	7
Nejapa (adults)	2	7	9
Guazapa (young women)	0	8	8
Guazapa (adult women)	0	8	8
Jiquilisco (young men)	6	0	6
Puerto El Triunfo (young women)	0	8	8
San Dionisio (mixed adults)	3	4	7
California (adult women)	0	5	5
Total	**18**	**40**	**58**

A1.2. Approach

The focus groups facilitators were local qualitative experts and trained by the research team using a technical guide that included all of the focus group questions. During the semi-structured focus group meetings, the facilitator asked the participants open-ended questions that could lead to additional questions and responses.

Special care was taken to preserve participant anonymity and freedom to consent. Before starting each of the focus group sessions, a team member talked with the potential participant and read a consent statement that included the objective of the focus group, how participation was voluntary, and how the information shared would be used based on the IRB's approval of the experiment design. A facilitator conducted each of the discussions with the support of two team members who were responsible for listing the main work activities that the participants identified during the discussion on a whiteboard. The discussions lasted up to one and a half hours.

A1.3. Focus Group Questions

The semi-structured technical guide helped the facilitators lead the focus group discussions. The guide included two main components. The first component included questions to elicit a list of general activities in which the community members engage. From there, the group identified which activities are considered work and which employment. The discussions started with the following question, "*Think about a typical day in your life. Which activities do you perform*?", followed by "*Now, I would like us to talk about things that members of the community generally do. Could you describe to the group what some of the most common activities are within your community*?" After identifying all the common activities, the facilitator asked: "*Which of these activities are considered work*?" Using different colored markers, the participants highlighted the activities that could be classified as work. After identifying the work activities, the facilitator asked about the heterogeneity of the activities through the following questions: "*Do both men and women perform these activities*? *Or do the men and women in your community do different things*?", and "*Do young people also perform these activities*?"

The second component of the focus group aimed to identify the participants' main barriers to finding stable employment within the community. In this section of the discussion, the facilitator started by asking whether people in the community have difficulty finding stable jobs. All of the focus groups participants agreed that it was difficult to find stable employment. Afterwards, the facilitator asked: "*What are the main obstacles to fostering stable employment within your community*?" The facilitators also explored heterogeneity in the job barriers by asking the following: "*Do women face different obstacles*? *What job characteristics would entice women to work or*

enable them to work?" and "*Do young people face different barriers than women and men*? *What job characteristics would entice young people to work or enable them to work*?"

A1.4. Main Results

Extensive list of work activities. Participants identified the list of activities, which we summarize in Table AP_A2. We then created the List of Activities (LOA) module based on the different activities mentioned, and this list later helped respondents identify their work activities more accurately.

Heterogeneity of the work activities. Men primarily performed some of the work activities (e.g., transportation services), while mainly women did others (e.g., make items such as tamales, jelly, food, jewelry, etc. to sell). The focus groups reported that youth primarily helped in different activities (e.g. providing services, young females reported to provide hair and beauty services, while young males were more likely to being involved in transportation services).

Main barriers to obtaining stable employment. The focus groups reported that the most relevant barriers to stable employment were: (1) difficulty fulfilling job requirements, (2) lack of childcare services, and (3) insecurity about the commute to work. While adult men reported the first and third barriers, adult women emphasized the second. Young men reported the first barrier, and young women described struggling with all three barriers.

Table AP_A2. List of Activities Identified in the Focus Groups

List of Activities	FG 1 - Nejapa Young Men	FG 2 - Nejapa Adults	FG 3 – Guazapa Young Women	FG 4 - Guazapa Adult Women	FG 5 - Jiquilisco Young Men	FG 6 - Puerto El Triunfo Young Women	FG 7 - San Dionisio Mixed Adults	FG 8 - California Adult Women
Care for farm, livestock, or fishing	4	11	4	8	9	5	6	6
Help a family member with agricultural work, take care of the family's livestock, and/or fishing	0	0	0	0	1	0	0	0
Sell items such as clothing, cell phones, shoes, jewelry	0	1	1	2	1	1	0	0
Make items to sell such as tamales, jelly, food, jewelry	3	2	3	4	3	0	8	2
Sell homemade items such as tamales, jelly, food, jewelry	2	4	1	4	4	4	3	1
Provide hair and beauty services, repairs or masonry; administer medication; care for the sick or elderly	4	3	2	3	2	4	2	1
Provide transportation services via taxi, Uber, Mototaxi, pickup truck, minibus	0	1	1	1	1	0	1	0
Provide home delivery services	1	0	0	0	1	0	1	0
Cook, launder clothing, or perform other services for individuals	5	4	4	6	4	5	4	5
Help in a non-farm family business	1	2	1	1	3	1	0	0

Appendix B. Methodological Activities

Enumerator training and fieldwork. Before commencing data collection, supervisors and interviewers underwent a two-week training session. All of the interviewers and supervisors had previous experience using Survey Solutions and conducting household surveys. Following the training, the interviewers carried out mock interviews in order to become more familiar with the questionnaire and interviewing techniques. After the mock interviews, interviewers participated in a 1-day pilot with non-participating households within the EAs included in the experiment. All pilot interviews were recorded and later audited by two trained monitors who provided each of the interviewers with written feedback. The field coordinators then met with each interviewer and discussed the feedback. After the individual meetings, the team led a debrief session with all of the interviewers to address any remaining questions and concerns.

Six teams comprised of one supervisor and three interviewers each conducted the survey between August and October 2022. The teams operated in a roving manner, interviewing all selected households in each EA before moving on to the next. All of the households in each treatment status were interviewed following the same protocol: upon arriving at a selected household, the interviewer introduced herself to the first working-age person who opened the door, read aloud the consent statement, and, after the working-age adult agreed to continue, began the interview. All households that completed the interview received an in-kind incentive valued at USD$5.00.

Household substitution protocols. We randomly selected 21 additional substitute households for each EA in case participating household members or proxies did not show for the interview. Interviewers were asked to visit all households up to 5 times to obtain personal or parental consent (for youth) from household members to participate in the survey. If enumerators were unable to obtain consent after 5 visits, then they had to inform their supervisors, who would try to obtain consent one additional time. If neither of these approaches worked, then the household was replaced. In total, 22.6% of the households were replaced by substitutes.[21]

[21] The main reasons for substitution were as follows: household members refused to participate (18.6%); households could not be found (1.0%); households were not eligible to participate in the survey because they did not report having at least 2 household members aged 15 to 64 years (2.3%); and the interviewer was unable to interview the designated ESR household member (0.7%).

We included an additional substitution protocol for the ESR group, which enforced self-reporting. Interviewers were asked to visit each ESR household up to 5 times to talk directly with the selected household member. If the interviewer was not able to interview the selected household member after 5 visits, then the supervisor also visited the household and documented the reason why the selected household member was not available. In this case, a randomly selected replacement household within the EA replaced the entire household. Only 2.1% of the households in ESR were replaced due primarily to the fact that selected household members were hospitalized or visiting family in other municipalities.

A possible concern is that replacement households within each EA would differ from the original households that were not replaced. As shown in Table AP_B1, the two groups are very similar with few statistically significant differences between them, however, these differences are nevertheless very small. For example, original households had 0.2 household members more than substitute households (a 6% difference). We estimated similarly small statistically significant differences for the dependency ratio as well as access to a mobile phone and/or Internet. The only large statistically significant difference between original and substitute households occurred for the share of households in rural areas: only 47% of the original households were in a rural area relative to 61% of the substitute households. However, as we explain in Section 4, we stratify the random assignment of households by EA (which are either rural or peri-urban). Thus, this concern should be addressed by including EA fixed effects as we did in our main specification. Overall, as we explain in the main text, we formally address this potential concern by including the variables for which there are differences between the two groups as controls in our main model and test the robustness of our results.

Data quality assurance. We performed extensive monitoring throughout the fieldwork to ensure data quality. Field coordinators and the team supervisors monitored data collection on site. They also visited the field teams at random times. In addition, we activated Survey Solutions audio recording functionality for 25% of the surveys and asked two trained monitors to audit the recordings. The monitors listened to these recordings daily and logged their observations in a structured questionnaire on interviewer performance. Lastly, once the interview was completed and uploaded to the server, project managers reviewed the data to verify that it was complete. Our field coordinators also checked for additional errors and produced an error file, which was

communicated back to the respective field interviewers. These crosschecks were performed daily throughout the duration of the survey.

Table AP_B1. Means of Original and Substitute Household Characteristics

Variable	(1) Original Household	(2) Substitute Household	(3) *P*-val. Difference
PANEL A. Household Characteristics			
Household size (N)	3.756	3.543	0.052
Dependency ratio (%)	0.259	0.287	0.071
Households in rural area (%)	0.470	0.606	0.000
Households with an assets index above the median (%)	0.482	0.434	0.215
Moderate to severe food insecurity (%)	0.372	0.335	0.307
Remittances received (%)	0.366	0.308	0.110
Household has a non-farm enterprise (%)	0.333	0.299	0.337
Household works in agriculture (%)	0.545	0.529	0.679
Observations	787	221	
PANEL B. Individual Characteristics			
Female (%)	0.546	0.559	0.612
Age (years)	35.513	35.387	0.853
High school or higher education (%)	0.284	0.285	0.967
Read or write (%)	0.876	0.854	0.201
Never married (%)	0.332	0.345	0.587
Access to mobile phone (%)	0.887	0.856	0.055
Access to internet (Wi-Fi) (%)	0.177	0.218	0.036
Observations	1,979	501	

Notes: This table compares the mean of the characteristics of the original (Column [1]) and substitute (Column [2]) households included in our sample. Column (3) presents the *p*-values for the test of the differences in means between the two groups.

Appendix C. Definitions of the Variables Included in the Analysis

C1. Household Characteristics

Household size: The number of individuals who normally live and eat their meals together in the household, excluding the domestic servants, other workers such as gardeners, and guests who visit temporarily. Those who normally live at home, but who were absent at the time of the interview because of academic studies, business, visiting friends or relatives, travel for pleasure, hospitalization, etc. are considered household members as long as they have lived in the household for at least 6 of the past 12 months.

Dependency ratio: The percentage of household members who are considered dependents. This ratio is calculated as the sum of dependents aged 0 to 14 years plus individuals over the age of 65 divided by the total number of working-age household members (15 to 64 years).

Households in rural areas: The percentage of households located in rural areas, which includes a binary indicator that takes the value of 1 for households in rural areas, and 0 for those in peri-urban areas. Due to our methodological design, the samples are evenly distributed across rural and peri-urban areas.

Households with an assets index higher than the median: The percentage of households that have an assets index above the median value within the sample. Following Anderson (2008), we construct a standardized index using inverse covariance weighting. We utilize the mean and standard deviation of the control group for the standardization. The items used to measure this assets index are:

Question: Does your household own any of these items in working conditions?	
1. Radio	YES...1 NO....2
2. Sound system	YES...1 NO....2
3. TV	YES...1 NO....2
4. Video cassette or DVD player	YES...1 NO....2
5. Refrigerator	YES...1 NO....2

6. Washing machine	YES...1 NO....2
7. Blender	YES...1 NO....2
8. Fan	YES...1 NO....2
9. Computer	YES...1 NO....2
10. Sewing machine	YES...1 NO....2
11. Vehicle, car, or boat (for household use)	YES...1 NO....2
12. Iron	YES...1 NO....2
13. Microwave oven	YES...1 NO....2
14. Video games (Nintendo)	YES...1 NO....2
15. Air conditioning	YES...1 NO....2
16. Well or cistern	YES...1 NO....2
17. Motorcycle	YES...1 NO....2
18. Tablet	YES...1 NO....2

Households that experienced moderate to severe food insecurity: According to the Food Insecurity Experience Scale (FIES),[22] moderate to severe food insecurity prevalence refers to a range of food security conditions experienced by the households that have difficulty accessing enough safe and nutritious food for their members' normal growth and development and that fail to enjoy an active and healthy life due to a lack of money or other resources. This variable takes the value of 1 if the household falls within the range of moderate to severe food insecurity, and 0 otherwise.

[22] More information on the FIES can be found at FAO (2023).

The questions used to construct the FIES are as follows:

Question: Due to a lack of money or resources, in the past 30 days has	
1. … anyone in your household worried about not having enough food to eat?	YES...1 NO....2
2. … anyone in your household been unable to eat healthy and nutritious foods?	YES...1 NO....2
3. … anyone in your household eaten only a few kinds of foods?	YES...1 NO....2
4. … anyone in your household had to skip a meal?	YES...1 NO....2
5. … anyone in your household eaten less than you thought he/she should?	YES...1 NO....2
6. … your household run out of food?	YES...1 NO....2
7. … anyone in your household been hungry but did not eat?	YES...1 NO....2
8. … anyone in your household gone hungry for the entire day?	YES...1 NO....2

Households that received remittances: The proportion of households that have received international remittances, which include cash transfers or gifts from individuals living abroad, such as relatives and friends, within the last 12 months.

Household with a non-farm enterprise: The proportion of households that operate at least one non-farm enterprise (NFE). An NFE can encompass a wide range of income-generating activities, including small businesses, workshops, retail ventures, services, manufacturing, or any other commercial endeavors that do not primarily involve agricultural production.

Household working on agricultural activities: The percentage of households engaged in agricultural, livestock, or fishing activities. This variable is assigned a value of 1 if the household responds affirmatively to at least one of the following questions:

1. Do any members of your household own or have access to land that is used for crop cultivation during the agricultural season?	YES...1 NO....2
2. Has your household owned any livestock in the past 12 months?	YES...1 NO....2

3. Have you or any other member of your household been involved in fish-related activities (i.e., catching or raising fish) in the last 12 months?	YES...1 NO....2

C2. Individual Characteristics

Female: Denotes the sex of the individual and takes the binary value of 1 if the person is female, or 0 otherwise.

Age: An individual's chronological age measured in years.

High school or higher education: Indicates whether the individual has completed at least a high school education or has received a higher education.

Read or write: Captures literacy status and takes the value of 1 if the respondent can read or write, or 0 if the respondent is illiterate.

Never married: Identifies marital status and more specifically signifies that the person has never entered a legally recognized marriage or civil partnership.

Access to mobile phone: This variable takes the value of 1 if the individual has access to a mobile phone, or 0 otherwise.

Access to Internet (Wi-Fi): This variable takes the value of 1 if the individual has access to the Internet at home, or 0 otherwise.