The Making of a Public Sector Worker: The Causal Effects of Temporary Work Assignments to Poor Areas*

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Abstract

The global shortage of health workers in rural and vulnerable areas remains a critical policy challenge. Over 70 countries have implemented temporary service programs to address geographic imbalances in health worker distribution. This paper examines whether temporary work assignments to poor rural areas affect long-term career choices using Peru's mandatory rural service program. We exploit exogenous variation in the available choice set of facilities generated by a lottery system determining the order in which psychologists choose service locations. Using administrative data and an original survey of 709 psychologists who completed the program, we find that those assigned to poorer locations through later lottery draws are significantly more likely to subsequently work in the public sector (17%) and poorest districts (59%) up to three years after the program. We investigate mechanisms and find evidence that the experience changes worker preferences and beliefs. Psychologists assigned to poorer areas score 0.12 standard deviations higher on a prosociality index, are more willing to accept jobs in poor areas in hypothetical scenarios, and report increased willingness to work for public facilities serving the poor. We rule out inertia, differential skill formation, and network effects. These findings demonstrate that governments can leverage preference endogeneity, not just financial incentives, to attract workers to underserved areas.

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1 Introduction

Ensuring adequate provision of public services in remote areas remains a critical policy challenge. Workers systematically sort away from remote and poor areas despite the higher social returns to working there. Although a common approach is to compensate workers in undesirable locations with higher wages, this approach may be insufficient or costly. This pattern has particularly severe consequences in sectors with positive externalities, such as healthcare. Boniol et al. (2022) projects a shortage of up to 12 million health workers by 2030. This crisis is more acute in developing countries that already suffer from structural inequalities (Banerjee and Iyer, 2005; Dell, 2010): high-income countries have 6.5 times more health workers than low-income countries, with a fifth of the world's population having almost half of the global health workforce (Boniol et al., 2022). The International Labor Organization shows that rural areas bear the brunt of this burden, with twice as high shortages as urban areas in all low- and middle-income countries around the world (Scheil-Adlung, 2015).

Standard policy responses to labor shortages in underserved areas typically rely on monetary incentives. However, recent evidence suggests that exposure to diversity and direct experience may also shape behaviors such as willingness to work in remote regions (Okunogbe, 2024; Rivera, 2025). Temporary service programs have emerged as an alternative policy tool to address geographic imbalances in public service provision worldwide (Frehywot et al., 2010), with the potential to alter workers' preferences about serving disadvantaged populations—yet empirical evidence on this remains limited.

This paper examines whether temporary work assignments to poor and remote areas can induce workers to pursue careers serving low-income communities. For identification, we exploit random variation in the geographic assignment of psychologists participating in a mandatory 12-month rural service program in Peru. Under this program, graduated health professionals are randomly assigned to public primary healthcare facilities in remote areas to deliver essential services. Participation in the program is compulsory for all health professionals seeking future employment in the public sector, providing a unique setting to study the causal impact of early-career exposure to disadvantaged environments on subsequent occupational choices.

Our empirical strategy takes advantage of exogenous variation in psychologists' job choice sets generated by the program's randomized assignment process. Participants selected their 12-month service location in a randomly determined order: those drawn first chose from the full set of available posts, while those drawn later selected from a progressively smaller set of remaining options. As a result, individuals with worse lottery draws faced more limited choices and were more likely to take positions in poorer or otherwise less desirable areas. This random ordering generates plausibly exogenous variation in exposure to disadvantaged locations, which we exploit to estimate the reduced-form impact of early-career assignments on subsequent job choices and to explore the mechanisms that may drive these effects.

Our data comes from administrative data from the Ministry of Health in Peru on health worker placements and an online survey we conducted among psychologists who had completed the rural service program over the last three years. In the survey, we collected information on employment outcomes, the participant's reported rank order during the assignment progress, and potential mechanisms that could mediate results: preferences, beliefs, and the development of skills and networks during the rural service program. We use these preferences and beliefs to create a prosociality index based on stated job preferences, redistributive preferences, and (past, hypothetical, and incentivized) donation decisions. We supplement the surveys with administrative data on public sector employees.

We confirm that psychologists with a worse lottery draw completed the rural service program in poorer locations. We then show that this experience affects their subsequent career outcomes. Compared to psychologists who were given first choice over locations, respondents in the bottom rank tercile are 9.3 percentage points, or 17%, more likely to work for the public sector after their service concludes. These effects are concentrated in facilities that provide healthcare services to poor households. In addition to changes in type of employer, we also observe a change in respondents' later career location. Psychologists in the bottom tercile of lottery ranks are 6.4 percentage points, or 59%, more likely to subsequently work in the poorest districts in the country. We address concerns that differential survey selection could explain our result by showing that we find similar effects for a subsample of psychologists for which we observe lottery rankings through government video recordings and later employment outcomes in administrative data.

We then evaluate a series of explanations for what drives these career effects. We first rule out inertia as an explanation: less than 5% of respondents continue to stay at the facility or district in which they completed the rural service program. A second possible explanation for the effects on employment outcomes could be that it changes the jobs for which these psychologists believe they are competitive. For example, psychologists who complete the mandatory service program in poorer areas might worry that they received worse training, which could make them less attractive to the private sector. Similarly, workers in poorer areas might perceive they have fewer opportunities to develop professional networks that will help them get a job.

We find no evidence that service in these less desirable areas changes a psychologist's perception of either their hireability or of the availability of jobs for which they would be competitive. First, we show that the rank tercile does not affect the perceptions of how the rural service program impacted skill formation. Second, we do not find that respondents with worse lottery draws give different answers about how networks helped them get their current job. Overall, only 20% of respondents say that someone they met through the rural service program helped them to get their current job, emphasizing that network formation is not a core feature of the program. Finally, we show that the lottery rank does not affect the perceived availability of job options in the public and private sectors.

In contrast, we find a series of evidence that service shapes a worker's willingness to work in rural areas and their beliefs and attitudes regarding others. We find that psychologists in the bottom rank tercile are more likely to accept a job in a poor area in hypothetical vignettes and more likely to say that the rural service program increased their willingness to work for public facilities that help the poor. Psychologists in the bottom rank tercile also score 0.12 standard deviations higher on a prosociality index than psychologists in the top tercile. We further find that psychologists in the bottom tercile tend to change their beliefs about how effective the public sector is at achieving its goals, and on the underlying reasons for poverty. Consistent with first-time exposure to poverty being an important channel, we show evidence suggesting that the effects are larger for respondents born in Lima, which is both the capital city and Peru's most prosperous area.

This paper relates to multiple bodies of research. First, our findings supplement existing

work on policies supporting spatial market integration to address imbalances in the geographic distribution of public service delivery. Much previous work focused on the role of financial incentives (Duflo et al., 2011; Glewwe et al., 2010; Muralidharan and Sundararaman, 2011; Ashraf et al., 2014). Our paper is the first to show that governments can attract workers to public sector jobs in remote areas through temporary service programs, a common feature of many developing country policy toolkits.

Second, our paper speaks to existing work on the long-run effects of early career experiences (Oreopoulos et al., 2012; Angrist and Chen, 2011; Fadlon et al., 2022; Dobbie and Fryer Jr, 2015). Our paper is particularly related to Fadlon et al. (2022) who find that female physicians in Denmark who received unfavorable internship positions are more likely to sort into less desirable local labor markets in the long run, partly due to worse professional networks. Our setting differs from theirs since network effects are much less important for rural service programs than for internships during residency. We find a variety of evidence suggesting that increased prosociality is a key driver of the career effects we estimate.

Finally, effects on prosociality add to the literature on the malleability of beliefs and how contact with disadvantaged communities can change the behavior of individuals. Previous work finds exposure to a more diverse social environment can shape individual's attitudes and beliefs related to social justice, inequality, prosociality, and social behaviors (Lowe, 2021; Rao, 2019; Londoño-Vélez, 2022; Mo and Conn, 2018; Mousa, 2020; Kremer et al., 2019; Kosse et al., 2020; Dobbie and Fryer Jr, 2015; Okunogbe, 2023; Rivera, 2025). We build these findings out into an important professional domain, documenting that contact with the poor through temporary work assignments can also affect high-stakes behaviors like career choices. In related work, Dobbie and Fryer Jr (2015) show that participation in the volunteer program "Teach for America" makes participants more likely to work in the education sector after the program. We extend these findings by studying a public policy that is implemented by more than 70 countries around the world Frehywot et al. (2010) and examining a broader range of employment outcomes. We also focus on variation in assignments within such a program instead of studying the extensive margin effect of program participation, allowing us to rule out that the effects are driven by other program components like training content. An important finding from a similar setting that relates

to ours appears in Okunogbe (2023). That paper shows how a mandatory national service scheme promotes national integration by creating exposure to other ethnic groups. Our paper weaves this insight into the public service literature, showing that it is general to other types of interpersonal differences beyond ethnicity.

The rest of the paper is organized as follows. Section 2 describes the institutional setting and the conceptual framework. In Section 3, we describe the study design. Section 4 reports our results. Section 5 contains conclusions.

2 Background

This section provides background on the healthcare sector in Peru and describes the institutional features of the mandatory rural service program.

2.1 The Health Workforce in Peru

Similar to many other countries, Peru faces a geographical imbalance of health workers. The health worker density is almost twice as high in urban than in rural areas (PAHO, 2017). Appendix Figure A4 shows the relationship between the number of psychologists in the public sector per 100,000 people and a district-level poverty index.[1] The index is created by FONCODES, a government agency, based on poverty indicators in the 2007 census.[2] The index ranges from 0 to 1 and indicates the percentile rank of the district relative to the rest of the country. The government uses this ranking to classify districts into poverty quintiles such that each quintile has roughly the same population.[3] We use the poverty index and the poverty quintiles throughout the paper as our preferred measure of location classifications. The blue line in Appendix Figure A4 shows that the richest districts have around 22 psychologists per 100,000 people, whereas the poorest districts only have a psychology density of around 13. At the same time, the need for better access to healthcare services is often larger in poorer areas. For example, the share of people with mental health

[1]Districts are the third-level administrative unit in Peru and have a median population of 4,366 people according to the 2007 census.

[2]The index is based on the following indicators: the share of homes without drinking water, the share of homes without proper sanitation, the share of homes without electricity, the share of households with at least one malnourished member, the illiteracy rate of women aged 15 and over, and the population share of children aged 0-12 years.

[3]Since poorer districts tend to have a smaller population, the poorest quintile consists of more districts.

conditions who seek care is only half as large in the poorest districts as in the richest districts in the country (orange line). We find a similar pattern when looking at a proxy of unfilled vacancies at public facilities. Whereas 51% of public primary facilities that are supposed to provide mental healthcare services do not have a psychologist in districts in the poorest quintile, this share is only 17% in districts in the richest quintile. This is consistent with the unmet demand for psychologists in remote health centers. Evidence from a Regional Health Management Office in Lima (DIRIS) reports that in 2023, a call for 36 psychologists across 27 health centers that received 152 eligible applicants resulted in 5 health centers with unfilled positions at the end of the process. All of the unfilled positions were located in rural and semi-urban areas. Geographic disparities persist despite the existence of bonuses for all primary care facilities.[4]

2.2 The Mandatory Rural Service Program

To address the shortage of healthcare professionals in rural areas, the government launched the *Servicio Rural y Urbano Marginal de Salud* (SERUMS) program in 1981. The law requires that healthcare professionals work for one year in a rural or semi-urban area if they ever want to apply to the public sector.[5] Psychologists can apply to SERUMS after the completion of a 3-year bachelor's program. According to anecdotal evidence, many psychologists still apply to the program even if they do not intend to immediately work in the public sector to maximize future career options. A back-of-the-envelope calculation suggests that roughly 70% of psychology graduates apply to SERUMS.[6]

Assignments are either paid or unpaid. Paid positions are only available in districts that are in the three poorest quintiles. Unpaid positions are usually offered in richer locations and are assigned separately. The tasks of psychologists during the rural service program are the

[4]The delivery of these bonuses is subject to a set of requirements, including completion of specific training courses and a second specialization aligned with primary care.

[5]Some professions, including physicians, are also required to complete SERUMS to apply for residency programs.

[6]The calculation is based on the following statistics: (i) university records document that there were 2,537 psychology graduates in 2015, (ii) there were 1,723 SERUMS positions for 3,505 unique psychology applicants across both lottery rounds in 2019, (iii) the average respondent in our survey applied to SERUMS three times. If we assume that the numbers are roughly constant across years and that psychologists stop applying after five times, we would predict that $\sum_{i=0}^{4} 2537 * 0.51^i = 4998$ psychologists should apply in a given year. Comparing this to the actual number of applicants in 2019 leads to an application rate of 70%.

same nationwide and range from the diagnosis and treatment of mental health conditions, such as depression, anxiety, schizophrenia, and alcoholism, to providing support to victims of domestic violence.

While all positions are located in rural or semi-urban areas, there is a substantial variation in the poverty level of SERUMS locations. Appendix Figure A2 shows the geographical distribution of the poverty level of SERUMS locations. Positions are available across the country and only in the top three poverty quintiles. All positions are paid the same (nominal) salary except for approximately 20% of positions that are located in emergency or border areas and receive around 30% higher salaries. In addition, the government offers bonus points, which can be used for preferential treatment in future applications to government jobs, to health workers applying to jobs in districts with different poverty quintiles (see Appendix Table A1 for details). However, since 87% of positions are located in the two poorest quintiles, the variation in bonus points is relatively small. Most of the psychologists in our pilot activities were not aware that the bonus points applied to them, and only 26% of our survey respondents say that the bonus points were important for them when they chose their SERUMS location.[7]

The assignment process. The assignment of applicants to healthcare facilities differs across professions. For professions with a nationwide exam, such as physicians and nurses, facilities are assigned based on merit ranking. In contrast, professions without a nationwide exam are assigned facilities through a randomized lottery. We focus on psychologists, the largest profession for which assignment was determined by a lottery.[8]

The program is heavily oversubscribed for psychologists: in the first round of 2021, 3,886 applicants competed for 336 paid positions. Overall, only around 10% of applicants to paid positions are selected for employment via the program annually. Assignments occur twice per year. Approximately one month before each lottery, the government publishes a list of available vacancies. This list includes only limited information: the geographic location

[7]Bonus points are very important for other professions like physicians and nurses since they are also relevant for residency program applications.

[8]Until 2024, psychology and nutrition were the only professions assigned by lottery. These professions were not assigned by merit because the associations responsible for developing and administering the exams lacked the resources to implement a standardized nationwide exam. In 2025, the Ministry of Health assumed responsibility for exam creation and administration; since then, all professions have been assigned based on merit.

of the facility, the managing institution or provider, facility size, the poverty quintile of the location, and whether the position is in an emergency or border area. Among these characteristics, the poverty quintile is the most salient, as applicants commonly use it as a proxy for remoteness and safety. Applicants may also supplement this information through personal networks and social media groups.

Applicants are assigned to one of twelve regional lottery sites based on the location of their university. During registration, applicants choose the provider within their assigned lottery site with whom they would like to work.[9] Applicants within each site-provider cell are then assigned positions via a lottery. There are 12 regions that serve as sites and up to 4 participating providers—the Ministry of Health; the local government; the police; and the social contribution based system.[10] In the lottery, participant positions are drawn in random order. When a participant is called, they are asked to select a facility in which to work from the set of remaining vacancies within the region-provider cell.[11] All lottery choices are completed before lottery numbers are assigned, and the random draw takes place. Each lottery is conducted separately by region–provider combination within a given cycle, and applicants cannot enroll in more than one lottery nor find out how many participants enroll in a given lottery before the draw takes place.

Figure A3 illustrates this process using a hypothetical lottery for Amazonas region facilities provided by the Ministry of Health. At the start of each lottery, all applicants face the same set of available facilities within the chosen region and provider. Numbers are drawn, and applicants are called sequentially in random order to select from the remaining positions. As the lottery proceeds, the set of available facilities shrinks, so applicants drawn later face more limited options.

The randomization is conducted digitally by the central government using the website `random.org`. When called, applicants may withdraw or may be absent, in which case the

[9] The application process does not require that applicants state their ordered preferences beforehand, although they may do so independently.

[10] This yields up to 48 separate lotteries on each lottery cycle. However, in practice 87% of SERUMS positions for psychologists are located in Ministry of Health facilities. Regional lottery sites typically offer positions within a single region, whereas the central lottery offers positions across eleven regions. Fifty-two percent of applicants are assigned through the central lottery site.

[11] Exceptions include pregnant women, women with infants, and applicants with disabilities, who are allowed to choose first. These cases are removed from our analysis.

lottery proceeds to the next number. If a participant misses their opportunity to choose because of either withdrawal or absence, they are permanently removed from that period's lottery, though they are still permitted to either enter a separate lottery for unpaid positions held the following week or wait six months for the next lottery cycle. In practice, active withdrawal from paid positions is rare. More commonly, applicants are absent when called (10%) or make procedural errors (5%), such as failing to bring the required documentation or attempting to select a facility that has already been assigned for the third time. As discussed later, we find no significant differences in acceptance rates by lottery position. The process ends once all facilities have been assigned.

Career choices after service in the SERUMS program. After completing their service, psychologists can make job choices without further restrictions. Less than 5% of respondents continue to stay at the facility in which they completed SERUMS. Psychologists have various career options. According to our survey, 68% work in the health sector after SERUMS. Another 18% work in the education sector, while the rest work in a variety of areas, including public administration, marketing, and human resource management. Within the healthcare sector, most psychologists either work for the Ministry of Health, the social contribution based system, or private facilities. The facilities of the Ministry of Health provide healthcare to beneficiaries of the public social protection scheme, *Seguro Integral de Salud* (SIS), consisting of poor households and informal workers. ESSALUD is a public contribution-based social security system for salaried workers with a separate network of facilities. Private facilities consist of individual practices or larger hospitals for which patients either have to pay out-of-pocket or receive coverage through private insurance schemes. As shown in Figure A1, the large majority of poor households receive healthcare from Ministry of Health facilities. Ministry of Health facilities are usually also the only formal healthcare providers in poorer districts (Appendix Figure A5). For psychologists, the salaries across the different institutions are similar. Instead, the main difference between the institutions is that vacancies at the Ministry of Health tend to be located in more remote areas. In our sample, 58% of private sector jobs are located in the two richest district categories, whereas only 24% of public sector jobs are located in the same areas.

Multiple studies have shown that health workers overall have strong preferences to live in

cities (Miranda et al., 2012). Incorrect perceptions about life in rural areas are also likely to contribute to location decisions since health workers tend to come from better socio-economic backgrounds. Relative to the general population, psychologists in our sample come from more urban areas (78% vs 70%), have more educated parents (67% vs 47% have mothers who completed secondary school), and are less likely to speak an indigenous language as their mother tongue (7% vs 21%). Those who still decide to work in poor areas tend to be more prosocial. We find that psychologists who work in the poorest districts score 0.19 standard deviations ($p = 0.003$) higher on a prosociality index than other psychologists.

3 Data

Our primary data source is an online survey that we conducted between 2022 and 2024. Our main sample consists of 1,560 psychologists who have completed a paid SERUMS assignment at a Ministry of Health facility between November 2019 and November 2023. For this sample, we obtained the name, email address, phone number, university, SERUMS placement, and SERUMS lottery details from the Ministry of Health.

All respondents received an initial email with the link to the online survey. They were informed that the survey was conducted by an independent research team to analyze potential improvements to the SERUMS program. After the initial email, we used a call center to make follow-up calls and remind respondents to fill out the survey. Respondents could also request to be sent a WhatsApp message with the survey link. In addition to the follow-up calls, we sent two reminder emails over the course of 1.5 weeks. In the final stage of the data collection, we conducted an abbreviated phone survey with respondents who had not filled out the online survey by that time.[12]

Fifty-five percent of the main sample either completed the online or the phone survey, which is high compared to similar studies (Dobbie and Fryer Jr, 2015; Mo and Conn, 2018; Wu et al., 2022). In our preferred specification, we always pool phone survey responses, partial online survey responses, and completed online survey responses. We show in the appendix that the results also hold when we restrict the sample to respondents who completed the

[12]We further surveyed a subset of respondents who had applied to SERUMS in May 2021 but did not receive a position. We use the data from this survey for descriptive statistics in the paper.

online survey.

Lottery Rank: Unfortunately, the administrative data do not contain information on lottery rank. Consequently, our primary measure of an applicant's position in the lottery is derived from self-reported rank during the lottery assignment in survey responses. We ask respondents about the number of positions that were available, their position in the lottery, and the number of places left when it was their turn to choose. If the answers were internally inconsistent or the reported total number of positions was inconsistent with administrative data, we tried to call back the respondents to clarify their answers. We use the actual rank from the lottery recordings whenever possible.

To assess the validity of this self-reported ranking, we obtained Zoom video recordings of 18 lottery draws conducted between 2020 and 2022, covering a total of 357 applicants. We use this subset to conduct internal validity checks. Reassuringly, we find that the self-reported and observed lottery rank for the video recordings subsample is highly correlated (the Pearson correlation coefficient is equal to 0.77). Overall, 76% of respondents say that they are certain or very certain about their answers regarding the lottery assignment. Comparison of self-reported versus actual lottery rankings indicates that respondents tend to underestimate the number of undesirable options they faced when choosing: specifically, self-reported ranks are negatively biased relative to the true ranks. As a result, estimates that rely on the self-reported measure are likely to attenuate the true relationship between lottery rank and outcomes of interest.

Employment: Our employment module asked whether the respondent worked for pay in the past week and, if they worked, in which sector, institution, and district their current job is located. The survey also asked about secondary jobs at other institutions as well as the respondent's monthly salary for each job (based on six salary categories). We supplement the employment outcomes with administrative data on the universe of Ministry of Health employees in Peru.

Measures of Prosociality: We collect measures of prosociality across three dimensions. First, we ask respondents about how important it is for them to have a job that provides opportunities to help the poor on a scale from 1 to 7. Second, we ask respondents whether they think that the government should increase aid to the poor. Third, we collect four

different measures of donation behavior. We ask respondents whether they donated time or money to an organization that supports those in need in the past 30 days. We also adopt a measure from the Global Preference Survey that asks how much the respondents would donate to a good cause if they were to receive 300 soles ($\approx$ 158 USD PPP) unexpectedly (Falk et al., 2018). Previous research has shown that this is correlated with incentivized decisions in a dictator game (Falk et al., 2016). In addition, we conducted a dictator game in the 2022 survey and a spectator game in the 2023 and 2024 surveys.

Job preferences and beliefs about job attributes: We asked respondents to rate six additional job attributes from 1 to 7 according to their importance. These measures were salary, work-life balance, intellectual satisfaction, compatibility with a partner, work environment, and local infrastructure. We further asked respondents to compare positions at the Ministry of Health and in the private sector according to their salary, their opportunities to help the poor, and their work-life balance on a 5-point scale. Similarly, we also ask them to compare jobs at the Ministry of Health in the poorest and richest districts according to their local infrastructure, their opportunities to help the poor, their safety levels, and their compatibility with a partner. We further collected the respondent's opinions on whether they agree that the SERUMS experience increased their willingness to work for the Ministry of Health and to work in rural areas.

Skills and network formation: We obtained information on how much the respondents believe that the SERUMS experience improved their theoretical knowledge, clinical skills, language abilities, and professional networks. We ask whether these changes in skills directly helped the respondents to get their current jobs. For networks, we included the following question: "did any member of your professional network that you met through SERUMS help you find or get hired at your current job?". We also obtained information on the perceived availability of jobs by asking whether respondents agree that they could get a job at the Ministry of Health, at ESSALUD, and in the private sector if they wanted.

4 Empirical Strategy

Our empirical strategy exploits the randomized order in which psychologists applying region-provider cells, via the SERUMS program, are able to select from the set of available work

facilities. Within each lottery, applicants are randomly ordered and choose sequentially from a common set of available facilities. Applicants drawn early in the lottery can choose from the full set of positions, whereas applicants drawn later face progressively more restricted choice sets, with the final applicant who receives a position choosing only whether or not to work in the last remaining facility. This mechanism generates exogenous variation in applicants' choice sets as a function of their position in the lottery (i.e., lottery rank).

We restrict the analysis to Ministry of Health lotteries with at least six available facilities to ensure sufficient variation in lottery position. We further exclude individuals classified as special cases who were allowed to choose first and therefore did not participate in the randomized assignment mechanism.

We estimate the following specification for psychologist i participating in lottery j:

$$Y_{i(j)} = \alpha + \gamma f(PercentileRank_{i(j)}) + \delta_j + X'_{i(j)}\beta + \varepsilon_{i(j)}. \tag{1}$$

The variable $PercentileRank_{i(j)}$ captures applicant i's position in the lottery, expressed as a percentile within lottery j. The function $f(\cdot)$ is specified flexibly. We present results using both a linear specification and indicators for terciles of the percentile rank distribution, which do not impose a linear relationship. The outcome variable $Y_{i(j)}$ denotes the post-SERUMS outcome of interest for individual i. The term δ_j represents lottery fixed effects, defined at the level of site $\times$ institution type $\times$ lottery year, which absorb all common features of the choice environment faced by applicants within a lottery. The vector $X_{i(j)}$ includes predetermined individual characteristics: age, gender, an indicator for having attended a public university, an indicator for Spanish as a native language, and an indicator for whether the survey was administered by phone. Robust standard errors are reported.

Our identification relies on three main assumptions. First, *random assignment of lottery position*: within each SERUMS lottery, applicants are randomly ordered, implying that percentile rank is independent of applicants' potential outcomes and baseline characteristics. We provide empirical support for this assumption by showing that predetermined characteristics are smooth across the distribution of percentile ranks. Columns 1–2 of Table 1 show that true lottery rank is not significantly correlated with gender or university type. We also

do not observe systematic differences in acceptance rates across lottery ranks (columns 3-6).

Second, *no manipulation of rank*: applicants cannot influence their position in the lottery, and the ordering is determined mechanically by the assignment procedure. The Zoom recordings support this assumption. Figure A10 displays the use of the website `random.org` to draw the random sequence of numbers that defines applicant's order of choice. In addition, before the lotteries were recorded on Zoom, regulations required the presence of a notary to certify the transparency of the process.

Third, *monotonicity of choice sets*: earlier lottery positions weakly expand the set of available facilities relative to later positions, as applicants choose sequentially without replacement, and they only have one time to choose a single facility. Under these assumptions, differences in outcomes across lottery positions can be interpreted as causal effects of facing more favorable choice sets.

Outcomes and lottery rank are measured using survey data, raising the possibility of selective survey response. Selection into the survey would bias our estimates if response probabilities vary systematically with lottery position and are correlated with outcomes and individual characteristics. We address this concern in several ways. First, lottery position is determined prior to both facility choice and survey participation, making it unlikely that rank directly affects survey response except through post-SERUMS outcomes. Second, we show that survey initiation and completion, as well as observable baseline characteristics conditional on survey completion, are balanced across percentile ranks (see tables A2 and A3 in the Appendix). Third, results are robust to restricting the sample to respondents who completed the survey. Together, these findings mitigate concerns that selective survey participation drives our results.

5 Results

The results section proceeds in five parts. First, we characterize participants' program placements as a function of their position in the lottery. Second, we examine how later lottery draws affect labor market outcomes after the program ends. Third, we investigate the mechanisms underlying these effects using a simple conceptual framework that highlights potential supply- and demand-side factors shaping post-program job matches. Fourth, we explore

heterogeneity in the effects by participants' sociodemographic characteristics to assess who is most affected by worse placements resulting from later lottery draws. Finally, we present a series of robustness checks.

5.1 Placement During the Program

As described in Section 4, the SERUMS assignment process follows a one-sided lottery in which psychologists are randomly ordered and select sequentially from a common set of available health centers within the lottery they self-selected into. Applicants drawn earlier face a larger set of available positions, while those drawn later choose from increasingly restricted choice sets. Because net salaries are fixed across the majority of positions, differences in placement characteristics by lottery rank reflect variation in non-wage attributes of the available positions.

We examine whether lottery rank predicts the characteristics of program placements. Table 2 shows that respondents who selected later in the lottery chose positions in poorer locations and in districts with a higher rural population share during the SERUMS program (Panel A). Relative to psychologists whose lottery rank falls in the top tercile, those in the bottom tercile chose districts that rank 7.2 percentile points higher in the government poverty index ($p = 0.001$; Panel B) and that have a rural population share 5.5 percentage points higher ($p = 0.017$).[13] Altogether, these results show that later lottery draws lead participants to select positions in systematically poorer and more rural locations, generating meaningful differences in early-career job environments that have the potential of shaping subsequent labor market outcomes.

5.2 Labor Market Outcomes

We next examine the effects on subsequent career outcomes in Table 3. We find respondents in the bottom rank tercile are 9.3 percentage points more likely to work for the public sector than respondents in the upper rank tercile (column 1). These effects are driven by an

[13] Appendix Table A6 regresses respondents' lottery rank on a range of SERUMS position characteristics for the subsample for which actual lottery rankings are observed. Poverty is the primary attribute significantly correlated with lottery rank. Psychologists who choose later also tend to select smaller facilities. We find no statistically significant relationship between lottery rank and net salaries or whether the district is located in the same region as the respondent's birthplace. While these characteristics are the only ones officially disclosed prior to the lottery, later-chosen positions may differ along additional, unobserved dimensions.

increase of 8.3 percentage points ($p = 0.016$) in Ministry of Health employment (column 2), the institution that provides healthcare services to the poor. Column 3 show that the gains in public sector employment come at the expense of private sector employment (including private sector work at secondary jobs).

After documenting differences in the type of employer, we also examine changes in location choices. Column 4 shows that the share of respondents that work in the poorest districts is 6.4 percentage points, or 59%, higher for psychologists in the bottom rank tercile. Column 5 shows that psychologists rarely stay in the same district in which they did their SERUMS assignment and that this also does not differ by lottery ranks, ruling out inertia as a potential driver for results.

A potential concern is that differential selection into the survey could explain our results. While we find no differences in attrition rates by lottery rank, it is still possible that different types of respondents choose to participate. We address this by replicating column 2 with the subsample of psychologists for which we observe the lottery ranking in the video rankings. We then combine this information with administrative data on the universe of Ministry of Health employees. Reassuringly, we find similar increases in Ministry of Health employment for the bottom-rank tercile group in this subsample (column 6). Taken together, these results document a substantial change in the employment status of respondents up to 33 months after the end of the program, based on their rank in the SERUMS lottery.

5.3 Mechanisms

What is driving these results? We start by examining whether changes in the hireability of respondents due to differential changes in network or skill formation can explain the results. The concern is that psychologists who completed the SERUMS program in poorer areas had fewer opportunities to develop their professional skills. Similarly, psychologists that went to poor areas might be exposed to fewer or less-qualified peers which could make it harder to find a job in the private sector after SERUMS.

We examine these explanations in columns 1-4 in Table 4. We observe no differences in the perceived likelihood of getting a job in the public or private sector. Column 2 further shows that we do not find any evidence for differential skill gains based on the lottery rank.

We also ask respondents whether the SERUMS network helped them to get their current job and do not observe differential effects on this margin either. We note that only 20% of all psychologists say that someone they met through SERUMS helped them to find or get hired at their current job. This emphasizes that a rural service program like SERUMS differs from residency programs for physicians that have been examined in previous work (Fadlon et al., 2022) and that play a much more pivotal role in the network formation of participants.

We next examine supply-side explanations in columns 4 and 5. In the 2022 survey, we directly ask respondents whether the SERUMS experience increased their willingness to work for the Ministry of Health and observe that psychologists in the bottom rank tercile are 10 percentage points more likely to agree with the statement. In the 2023 and 2024 surveys, we instead ask respondents to choose between different hypothetical job offers. Consistent with a supply-side explanation, we observe that psychologists in the bottom tercile are more likely to accept a job in a poor area.

In Table 5, we delve deeper into how the SERUMS experience affected the beliefs and preferences of psychologists. Column 1 shows results for a prosociality index that captures job preferences, redistributional preferences, and donating behavior. Relative to psychologists in the top lottery tercile, respondents in the bottom lottery tercile score 0.12 standard deviations in the prosociality index. Psychologists in the bottom lottery tercile are also more likely to agree that external circumstances and not individual-level decisions are the main reasons why people are poor (column 2). Finally, we asked respondents to rate public and private sector jobs in terms of which one provides more opportunities to help the poor. We observe that respondents in the bottom lottery tercile have a more favorable view of the public sector, suggesting that their experience changed their view of the effectiveness of public facilities (column 3).

A concern with the observed increase in prosociality is that these questions were not incentivized. To address this, we also played a dictator game in the 2022 survey in which respondents had to decide how much to keep to themselves and how much to donate to two separate NGOs. As shown in Appendix Table A9, we do not find any effects along this margin. A potential reason is that more prosocial respondents already donate to other organizations or that increased public sector work in poor areas crowds out alternative ways

of supporting the poor. Consistent with this, we find suggestive evidence that respondents in the bottom rank tercile tend to be more likely to say that they did not donate in the dictator game because they are already supporting other organizations or because they are already helping the poor through their current work. In the 2023 and 2024 survey, we thus played a spectator game instead in which the respondents had to decide to allocate a fixed amount of money between three different NGOs that vary in their activity and location. We find some evidence that respondents with lower lottery ranks are more likely to donate to an NGO that works on domestic violence in rural areas, but the results are very noisy and inconclusive.

Despite this caveat, the broader results still suggest that the location of the SERUMS program affected the beliefs and preferences of respondents. Qualitative evidence adds to how the SERUMS experiences affected the perspective of psychologists. One of our respondents told us that through SERUMS she "learned that it is not only enough to put all your effort to be able to study ([she] also worked and studied since [she] was a child) but the distance from schools, the lack of public services in their villages, the type of upbringing, the training received and the example to follow greatly influence many to reject studying and/or progressing". Similarly, another respondent mentioned that the SERUMS program should be expanded so more people are "able to live that great experience in order to have a better identification with the other realities of our Peru." These quotes emphasize how the SERUMS assignments were a significant experience in respondents' lives and led them to change their perspectives. Since healthcare professionals come from better socio-economic backgrounds (as discussed in Section 2), many of them come in contact with rural poverty through SERUMS for the first time.

5.4 Heterogeneity and Robustness

Consistent with this explanation, we also find suggestive evidence that the effects on our main outcomes are concentrated in respondents with less contact with rural poverty prior to the program, measured as being born in Lima (Appendix Table A10).[14]

We conduct various robustness checks for our main results (Appendix Tables A6-A9). Our

[14]Due to small sample size, we pool the medium and bottom rank tercile in this specification.

findings hold if (i) we exclude controls, (ii) restrict the sample to respondents who at least partially completed the online survey, (iii) restrict the sample to respondents who completed the online survey, (iv) and exclude respondents who are uncertain or very uncertain about their lottery rank. The only exception is the effect on overall public sector employment, for which the size of the coefficients remains similar, but the estimates become insignificant when we restrict the sample size. Another concern is that the Covid-19 pandemic affects the external validity of the findings. We show that we find similar but nosier results if we either restrict the sample to respondents who completed SERUMS before the pandemic but entered the labor market when the first wave of cases in Peru emerged or restrict the sample to respondents who completed SERUMS during the pandemic but entered the labor market when vaccines were already widely available.[15] However, the results are very noisy and we cannot rule out that the effect size is the same. Finally, we also report p-values based on randomization inference by reassigning the lottery rank to each respondent 2,000 times (Appendix Table A11. The adjusted p-value on the coefficient for the bottom rank tercile increases to 0.162 for overall public sector employment but remains below 0.06 for the other main outcomes.

6 Conclusion

This paper uses exogenous variation in choice sets within a mandatory rural service program in Peru to demonstrate that temporary work assignments can influence important policy outcomes like public sector employment and public sector employment in underdeveloped areas. A suggestive mechanism analysis show these changes are mediated by changes in prosociality. This latter finding adds to a nascent literature that shows how contact with disadvantaged communities in a variety of settings can increase prosocial behavior (Rao, 2019), which in turn can also affect high stake outcomes such as career choices. Our findings emphasize the importance of taking into account the endogeneity of preferences and beliefs in economic theory and the design of public policies.

The insights speak to the optimal design of recruitment and posting policies for public

[15] An exception is the likelihood of working in the poorest districts for respondents who entered the labor market during the pandemic.

sector workers. Compensation schemes should take into account that preferences and beliefs might change because of the assignment itself, so it could be efficient to e.g. offer high lump-sum payments upfront to encourage workers to take up work in poor areas for at least some time. The findings further provide justification for a variety of social service programs, including mandatory rural service programs like SERUMS, voluntary schemes like 'Teach for America', and corporate efforts to encourage social work among employees. Taking into account the endogeneity of preferences and beliefs could further resolve a potential trade-off between hiring intrinsically and extrinsically motivated candidates (Ashraf et al., 2020), as the work itself might affect a worker's intrinsic motivation. It must be noted, however, that psychologists do not rely heavily on infrastructure that could shape the work experience obtained from the program through work in remote areas; by contrast, physicians and nurses could become disillusioned about public sector work due to the lack of infrastructure in remote facilities. More evidence will be needed to explore the validity of our results for other professions.

References

Angrist, J. D. and S. H. Chen (2011). Schooling and the vietnam-era gi bill: Evidence from the draft lottery. *American Economic Journal: Applied Economics 3*(2), 96–118.

Ashraf, N., O. Bandiera, E. Davenport, and S. S. Lee (2020). Losing prosociality in the quest for talent? sorting, selection, and productivity in the delivery of public services. *American Economic Review 110*(5), 1355–94.

Ashraf, N., O. Bandiera, and B. K. Jack (2014). No margin, no mission? a field experiment on incentives for public service delivery. *Journal of public economics 120*, 1–17.

Banerjee, A. and L. Iyer (2005). History, institutions, and economic performance: The legacy of colonial land tenure systems in india. *American economic review 95*(4), 1190–1213.

Boniol, M., T. Kunjumen, T. S. Nair, A. Siyam, J. Campbell, and K. Diallo (2022). The global health workforce stock and distribution in 2020 and 2030: a threat to equity and 'universal'health coverage? *BMJ global health 7*(6).

Dell, M. (2010). The persistent effects of peru's mining mita. *Econometrica 78*(6), 1863–1903.

Dobbie, W. and R. G. Fryer Jr (2015). The impact of voluntary youth service on future outcomes: Evidence from teach for america. *The BE Journal of Economic Analysis & Policy 15*(3), 1031–1065.

Duflo, E., P. Dupas, and M. Kremer (2011). Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in kenya. *American economic review 101*(5), 1739–1774.

Fadlon, I., F. P. Lyngse, and T. H. Nielsen (2022). Early career, life-cycle choices, and gender. Technical report, National Bureau of Economic Research.

Falk, A., A. Becker, T. Dohmen, B. Enke, D. Huffman, and U. Sunde (2018). Global evidence on economic preferences. *The Quarterly Journal of Economics 133*(4), 1645–1692.

Falk, A., A. Becker, T. J. Dohmen, D. Huffman, and U. Sunde (2016). The preference survey module: A validated instrument for measuring risk, time, and social preferences.

Frehywot, S., F. Mullan, P. W. Payne, and H. Ross (2010). Compulsory service programmes for recruiting health workers in remote and rural areas: do they work? *Bulletin of the World Health Organization 88*, 364–370.

Glewwe, P., N. Ilias, and M. Kremer (2010). Teacher incentives. *American Economic Journal: Applied Economics 2*(3), 205–227.

Kosse, F., T. Deckers, P. Pinger, H. Schildberg-Hörisch, and A. Falk (2020). The formation of prosociality: causal evidence on the role of social environment. *Journal of Political Economy 128*(2), 434–467.

Kremer, M., G. Rao, and F. Schilbach (2019). Behavioral development economics. In *Handbook of Behavioral Economics: Applications and Foundations 1*, Volume 2, pp. 345–458. Elsevier.

Londoño-Vélez, J. (2022). The impact of diversity on perceptions of income distribution and preferences for redistribution. *Journal of Public Economics 214*, 104732.

Lowe, M. (2021). Types of contact: A field experiment on collaborative and adversarial caste integration. *American Economic Review 111*(6), 1807–44.

Miranda, J. J., F. Diez-Canseco, C. Lema, A. G. Lescano, M. Lagarde, D. Blaauw, and L. Huicho (2012). Stated preferences of doctors for choosing a job in rural areas of peru: a discrete choice experiment. *PloS one 7*(12), e50567.

Mo, C. H. and K. M. Conn (2018). When do the advantaged see the disadvantages of others? a quasi-experimental study of national service. *American Political Science Review 112*(4), 721–741.

Mousa, S. (2020). Building social cohesion between christians and muslims through soccer in post-isis iraq. *Science 369*(6505), 866–870.

Muralidharan, K. and V. Sundararaman (2011). Teacher performance pay: Experimental evidence from india. *Journal of political Economy 119*(1), 39–77.

Okunogbe, O. (2024). Does exposure to other ethnic regions promote national integration? evidence from nigeria. *American Economic Journal: Applied Economics 16*(1), 157–192.

Okunogbe, O. M. (2023). Does Exposure to other ethnic regions promote national integration?: Evidence from Nigeria. Technical report, Working Paper.

Oreopoulos, P., T. Von Wachter, and A. Heisz (2012). The short-and long-term career effects of graduating in a recession. *American Economic Journal: Applied Economics 4*(1), 1–29.

Rao, G. (2019). Familiarity does not breed contempt: Generosity, discrimination, and diversity in delhi schools. *American Economic Review 109*(3), 774–809.

Rivera, R. (2025). Do peers matter in the police academy? *American Economic Journal: Applied Economics 17*(2), 127–164.

Scheil-Adlung, X. (2015). Global evidence on inequities in rural health protection : new data on rural deficits in health coverage for 174 countries. ILO Working Papers 994876213402676, International Labour Organization.

Wu, M.-J., K. Zhao, and F. Fils-Aime (2022). Response rates of online surveys in published research: A meta-analysis. *Computers in human behavior reports 7*, 100206.

Table 1: Internal Validity Checks

	Balance		Assignment Decision			
	Female	Public University	Accepted	Rejected	Mistake	Absent
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear Specification						
Percentile Rank	0.037	-0.019	-0.083	0.028	0.015	0.040
	(0.070)	(0.044)	(0.063)	(0.034)	(0.032)	(0.049)
Panel B: Discrete Specification						
Middle Tercile	0.050	0.070**	0.018	-0.023	-0.003	0.008
	(0.047)	(0.034)	(0.042)	(0.020)	(0.020)	(0.033)
Bottom Tercile	0.015	-0.010	-0.047	0.021	0.013	0.014
	(0.048)	(0.029)	(0.046)	(0.026)	(0.024)	(0.035)
Outcome Mean	0.787	0.065	0.810	0.049	0.031	0.110
Observations	418	418	444	444	444	444

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects.

Table 2: Effect of Lottery Rank on Program Placement

	Village Clinic	Poverty Index	% Rural Population	Vulnerability Index
	(1)	(2)	(3)	(4)
Panel A: Linear Specification				
Percentile Rank	0.045*	0.090***	0.057*	0.207***
	(0.026)	(0.028)	(0.030)	(0.073)
Panel B: Discrete Specification				
Middle Tercile	0.013	0.044**	0.021	0.068
	(0.017)	(0.020)	(0.021)	(0.052)
Bottom Tercile	0.038**	0.064***	0.039*	0.136***
	(0.018)	(0.021)	(0.021)	(0.053)
Outcome Mean	0.035	0.547	0.554	-0.045
Observations	791	791	791	791

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of gender, a dummy for whether the respondent's university was public, and a dummy variable that indicates whether the survey was done over the phone.

Table 3: Effect of Lottery Rank on Employment

	Works in Public Sector	Works in Private Sector	Works for Ministry of Health	Works for Ministry of Health (Admin)
	(1)	(2)	(3)	(4)
Panel A: Linear Specification				
Percentile Rank	0.141**	-0.120**	0.132**	0.131*
	(0.062)	(0.054)	(0.061)	(0.079)
Panel B: Discrete Specification				
Middle Tercile	0.007	-0.077*	0.036	0.116**
	(0.048)	(0.040)	(0.045)	(0.057)
Bottom Tercile	0.093**	-0.081**	0.083*	0.119**
	(0.045)	(0.039)	(0.043)	(0.055)
Outcome Mean	0.537	0.254	0.324	0.538
Observations	709	709	709	357

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of gender, and a dummy for whether the respondent's university was public, and a dummy variable that indicates whether the survey was done over the phone. In column 4, the sample consists of psychologists for which we observe the lottery ranking in the official video recordings, and the outcome comes from administrative data on the university of Ministry of Health employees.

Table 4: Effect of Lottery Rank on Job Attributes

	Works in Poorest Districts	Same District as SERUMS	Salary (PEN)
	(1)	(2)	(3)
Panel A: Linear Specification			
Percentile Rank	0.090**	0.021	250.798
	(0.044)	(0.026)	(214.974)
Panel B: Discrete Specification			
Middle Tercile	0.038	0.012	-197.244
	(0.033)	(0.022)	(157.251)
Bottom Tercile	0.064**	0.013	224.078
	(0.032)	(0.019)	(155.040)
Outcome Mean	0.108	0.043	1927.835
Observations	688	688	486

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of gender, and a dummy for whether the respondent's university was public, and a dummy variable that indicates whether the survey was done over the phone.

Table 5: Effect on Demand-Side Perceptions

	Job Availability Index	Gained Skills Index	SERUMS Network Helped to Get Job
	(1)	(2)	(3)
Panel A: Linear Specification			
Percentile Rank	-0.013	-0.131	-0.021
	(0.126)	(0.115)	(0.076)
Panel B: Discrete Specification			
Middle Tercile	0.027	0.049	0.007
	(0.090)	(0.082)	(0.058)
Bottom Tercile	0.039	-0.064	0.007
	(0.087)	(0.082)	(0.054)
Outcome Mean	0.003	0.009	0.203
Observations	478	486	353

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects. Columns 1-3 were also asked as part of the phone survey and include further a dummy variable for whether the survey was done by phone.

Table 6: Effect on Supply-Side Beliefs and Preferences

	Program Increased Will. to Work for MoH (1)	Program Increased Will. to Work for Poor (2)	Job Vignette: Rural > Urban (3)
Panel A: Linear Specification			
Percentile Rank	0.174***	-0.055	0.237*
	(0.065)	(0.071)	(0.130)
Panel B: Discrete Specification			
Middle Tercile	0.102**	0.073	-0.100
	(0.050)	(0.055)	(0.119)
Bottom Tercile	0.101**	-0.049	0.163*
	(0.047)	(0.049)	(0.095)
Outcome Mean	0.222	0.234	0.646
Observations	549	482	149

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects. Columns 1-3 were also asked as part of the phone survey and include further a dummy variable for whether the survey was done by phone.

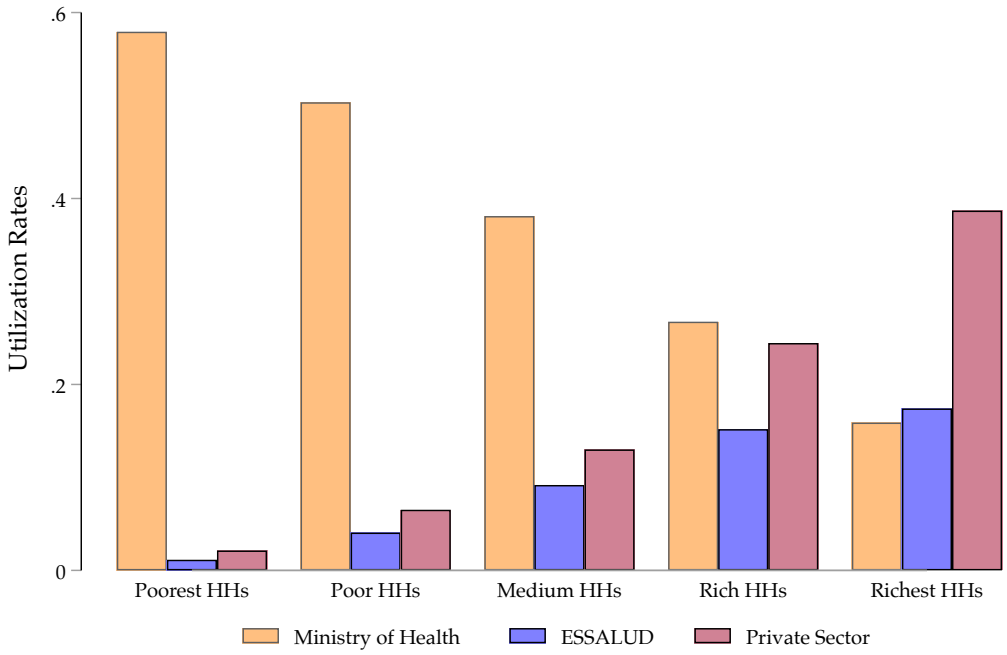
Table 7: Effect of Lottery Rank on Prosociality

	Prosociality Index	External Circumstances Are Reason for Poverty	Public > Private: Opportunities to Help the Poor
	(1)	(2)	(3)
Panel A: Linear Specification			
Percentile Rank	0.129*	0.091	0.378**
	(0.077)	(0.065)	(0.165)
Panel B: Discrete Specification			
Medium Rank Tercile	-0.014	0.021	-0.015
	(0.057)	(0.051)	(0.051)
Bottom Rank Tercile	0.117**	0.080*	0.084*
	(0.053)	(0.047)	(0.048)
pval: Medium Tercile = Bottom Tercile	0.027	0.255	0.059
Outcome Mean	-0.003	0.571	0.645
Observations	705	697	621

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, birth region fixed effects, and a dummy variable that indicates whether the survey was done over the phone. The sample in columns 1-4 consists of psychologists who completed SERUMS at the point of the survey. The sample in columns 5-8 consists of psychologists who were currently doing SERUMS or who completed the program three months prior.

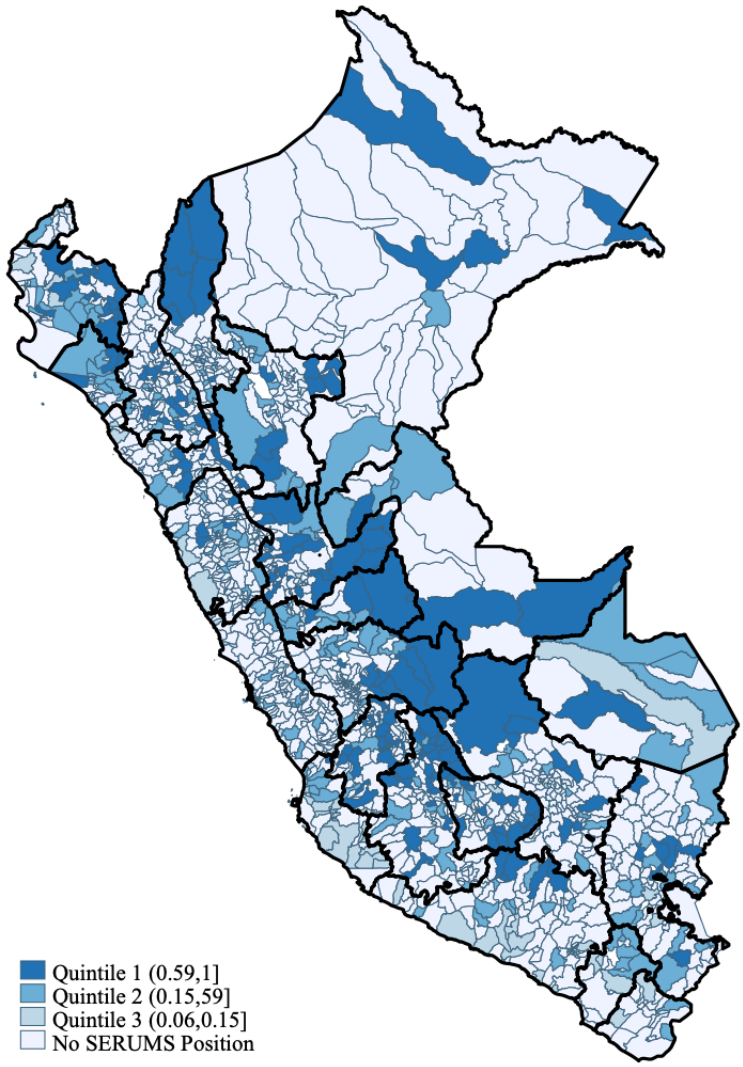
A. Appendix Tables and Figures

Figure A1: Healthcare Utilization by Household Wealth



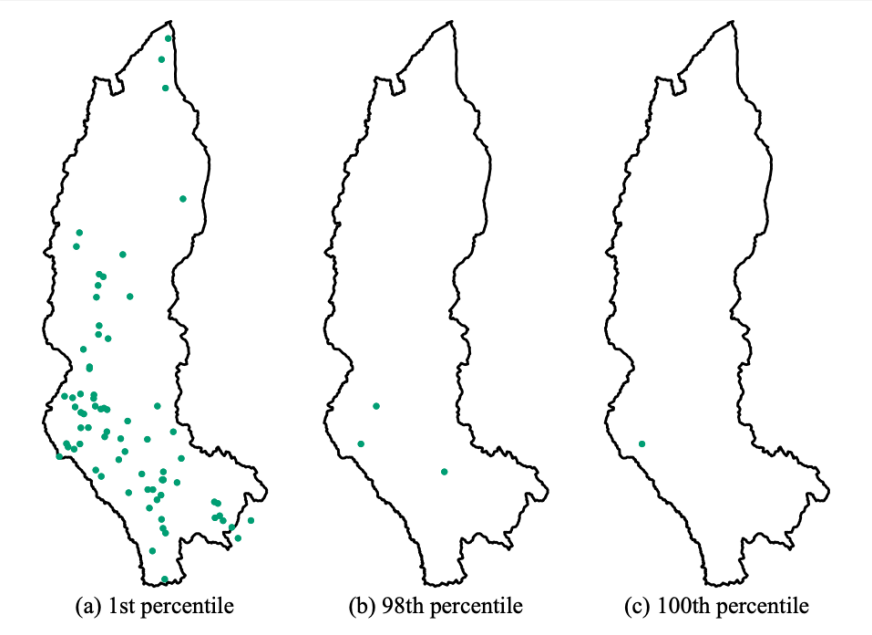
Notes: The data consists of the Peru Demographic Health Surveys from 2003 until 2017. The x-axis shows DHS wealth quintiles. The y-axis shows healthcare utilization rates for under 5-year old children who suffered from fever in the past two weeks. Omitted outcomes include visits to private pharmacies, healthcare from friends and family, and no treatment at all.

Figure A2: Geographical Distribution of SERUMS Positions by District Poverty Quintile



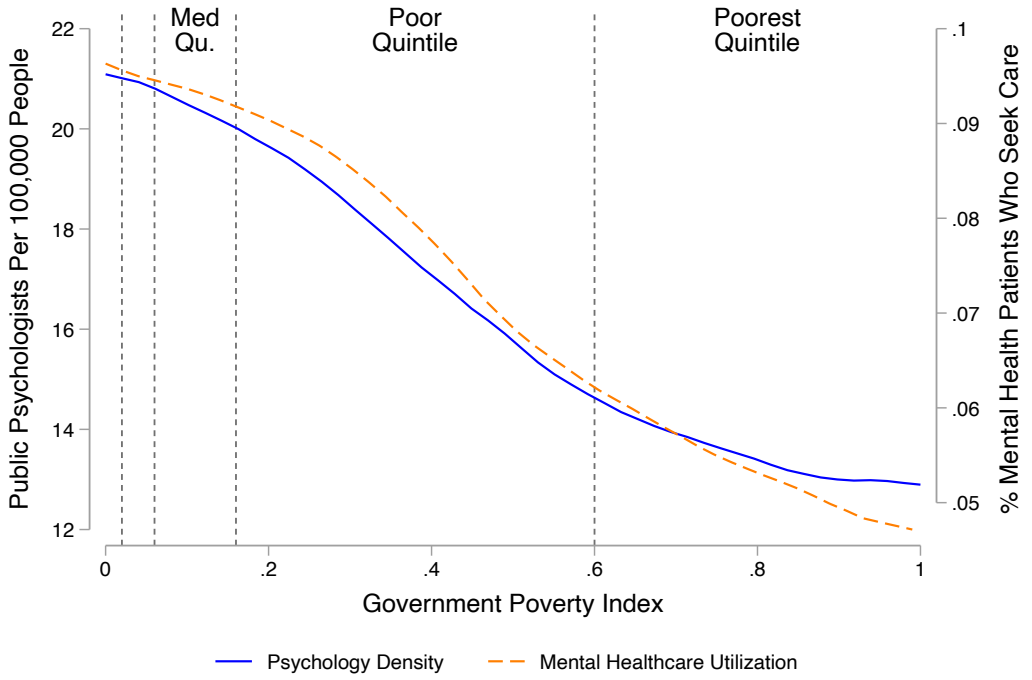
Notes: Each polygon represents a district in Peru, with dark black lines indicating regional boundaries. The figure displays the geographical distribution of SERUMS positions across the country. Districts are shaded according to poverty quintiles based on the government's poverty index. The legend reports the range of the poverty index for each quintile in parentheses. SERUMS positions were available only in districts within the top three poverty quintiles.

Figure A3: SERUMS lottery design example for the Amazonas region



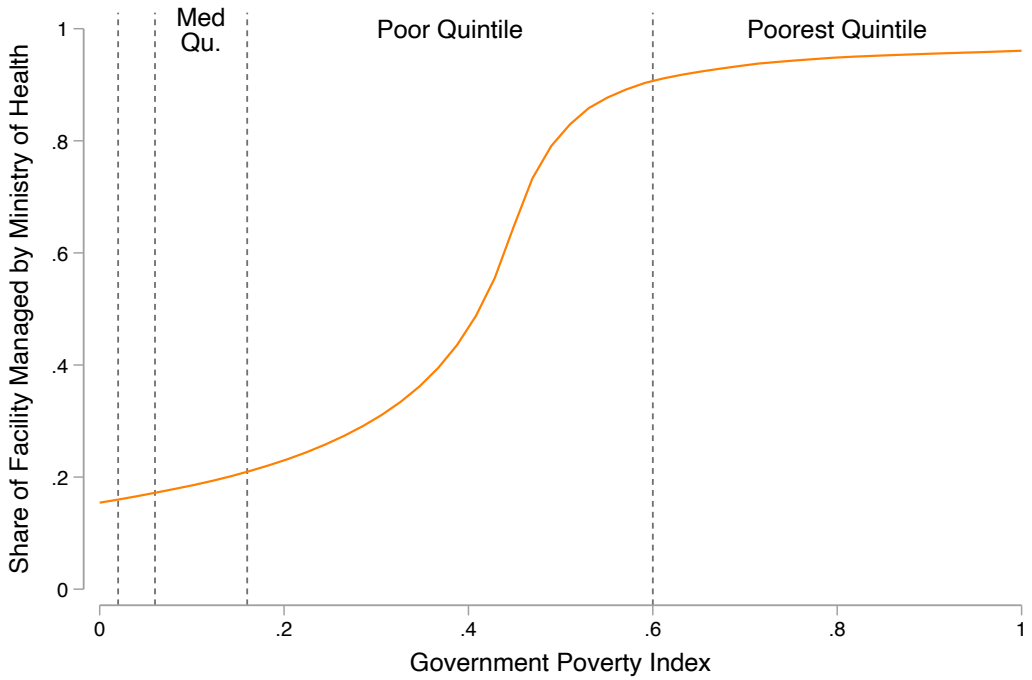
Notes: The figure presents a hypothetical lottery in the Amazonas region of Peru, illustrating the exogenous reduction in applicants' choice sets as a function of lottery rank. Panel (a) shows the full set of positions offered in lottery j by the Ministry of Health in the Amazonas region. An applicant drawn first in the lottery (i.e., at the 1st percentile of the lottery rank, excluding applicants who do not receive a position) can choose from the complete set of available positions. Panel (b) displays the positions remaining for an applicant drawn at the 98th percentile of the lottery. Panel (c) shows the positions remaining for the applicant drawn last in the lottery, for whom only one position remains available.

Figure A4: Psychologist Density and Mental Healthcare Utilization by District Poverty



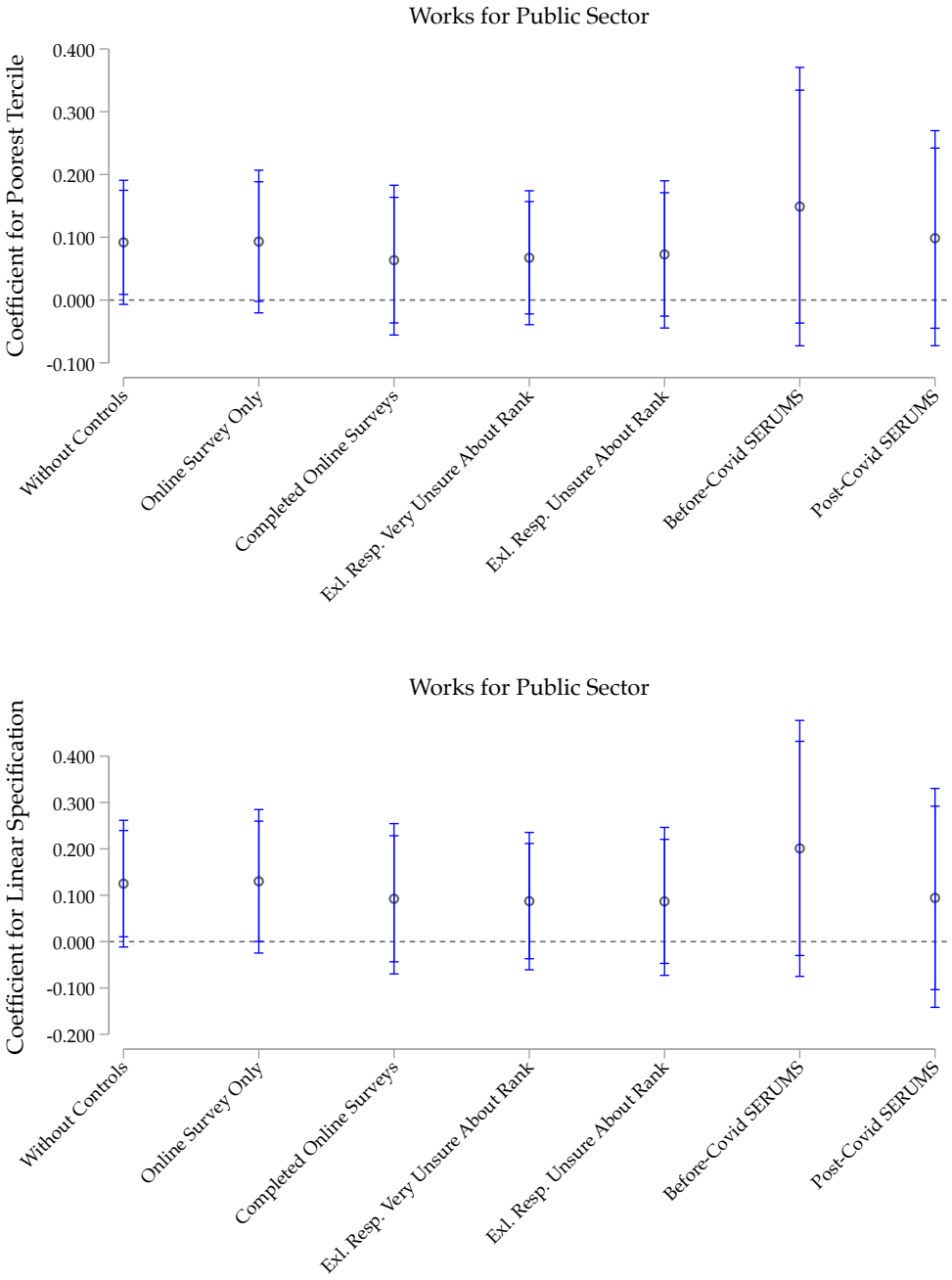
Notes: The blue line shows psychology density and corresponds to the left y-axis. The orange line shows mental healthcare utilization and corresponds to the right y-axis. Psychology density is based on administrative data from the Ministry of Health and mental healthcare utilization is based on the National Household Survey (ENAHO). The x-axis shows the district-level government poverty index from FONCODES. The vertical lines indicate the poverty quintile cutoffs from FONCODES.

Figure A5: Share of Health Facilities Managed by Ministry of Health by District Poverty



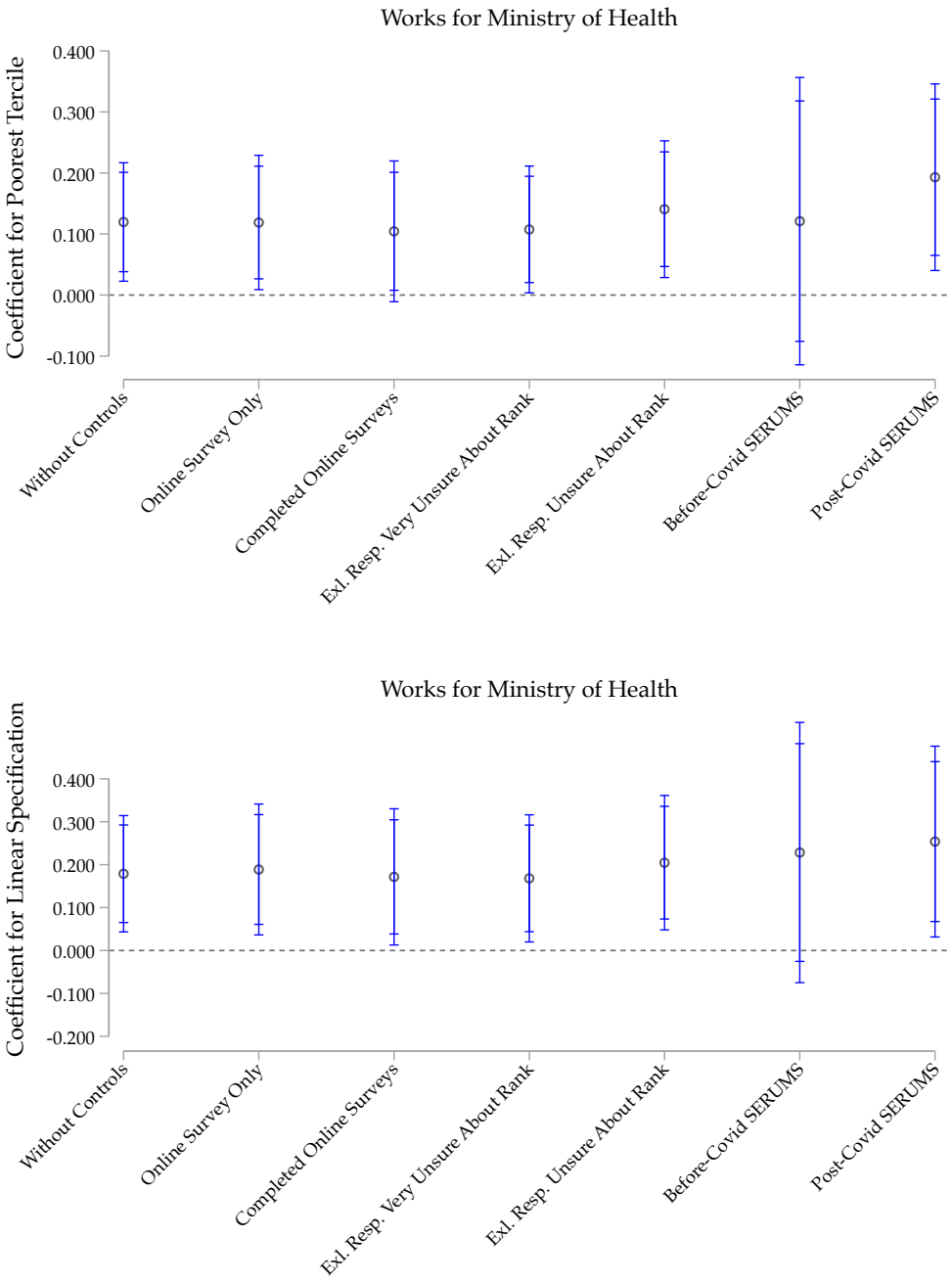
Notes: The y-axis shows the district-level share of facilities managed by the Ministry of Health according to the National Registry of Health Establishments. The x-axis shows the district-level government poverty index from FONCODES. The vertical lines indicate the poverty quintile cutoffs from FONCODES.

Figure A6: Robustness Checks: Public Sector Employment



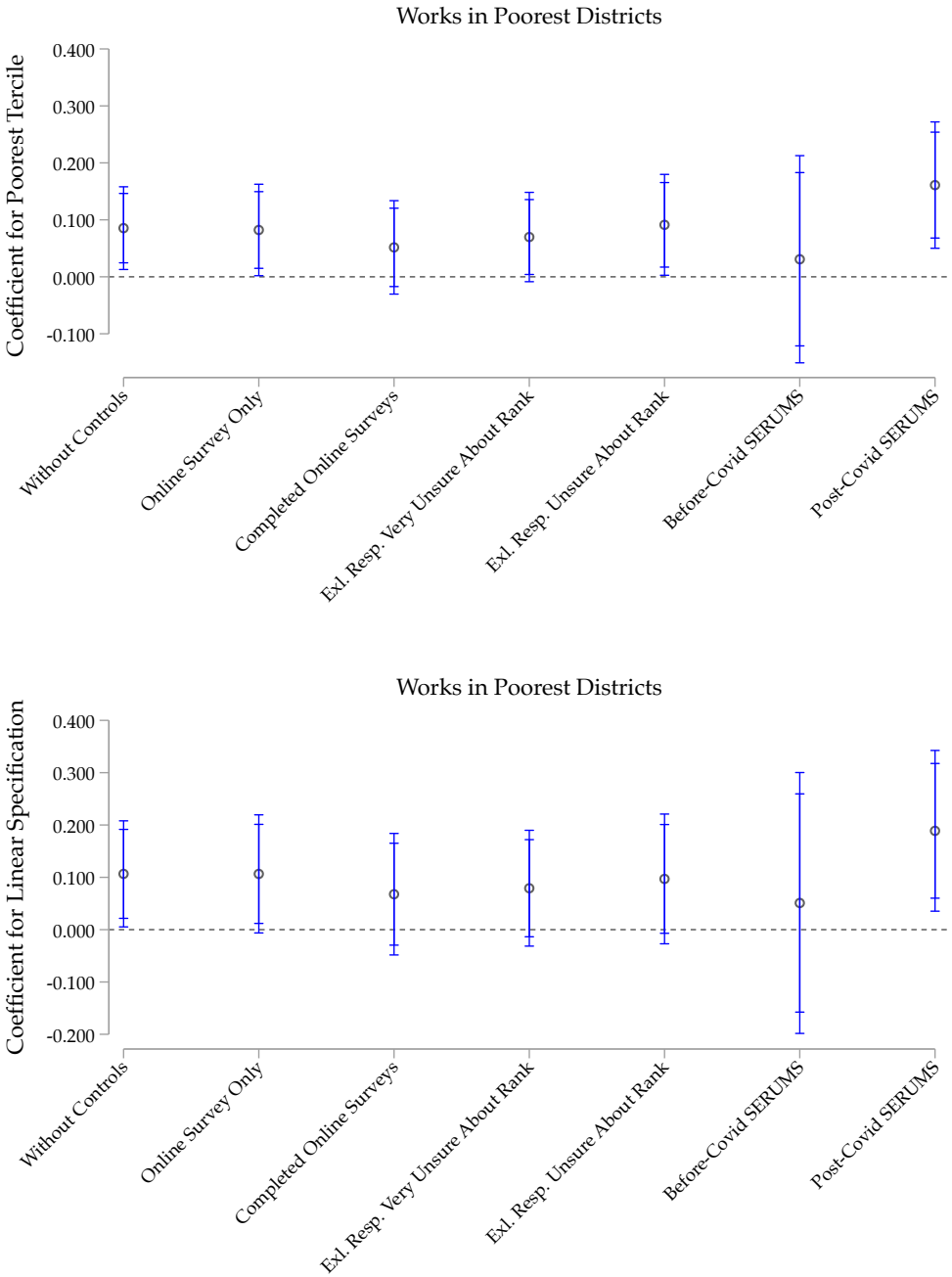
Notes: The first figure plots the regression coefficients for the poorest poverty tercile dummy and the second figure plots the regression coefficient for the linear poverty score variable. The figures show 90 and 95 percent confidence intervals.

Figure A7: Robustness Checks: Ministry of Health Employment



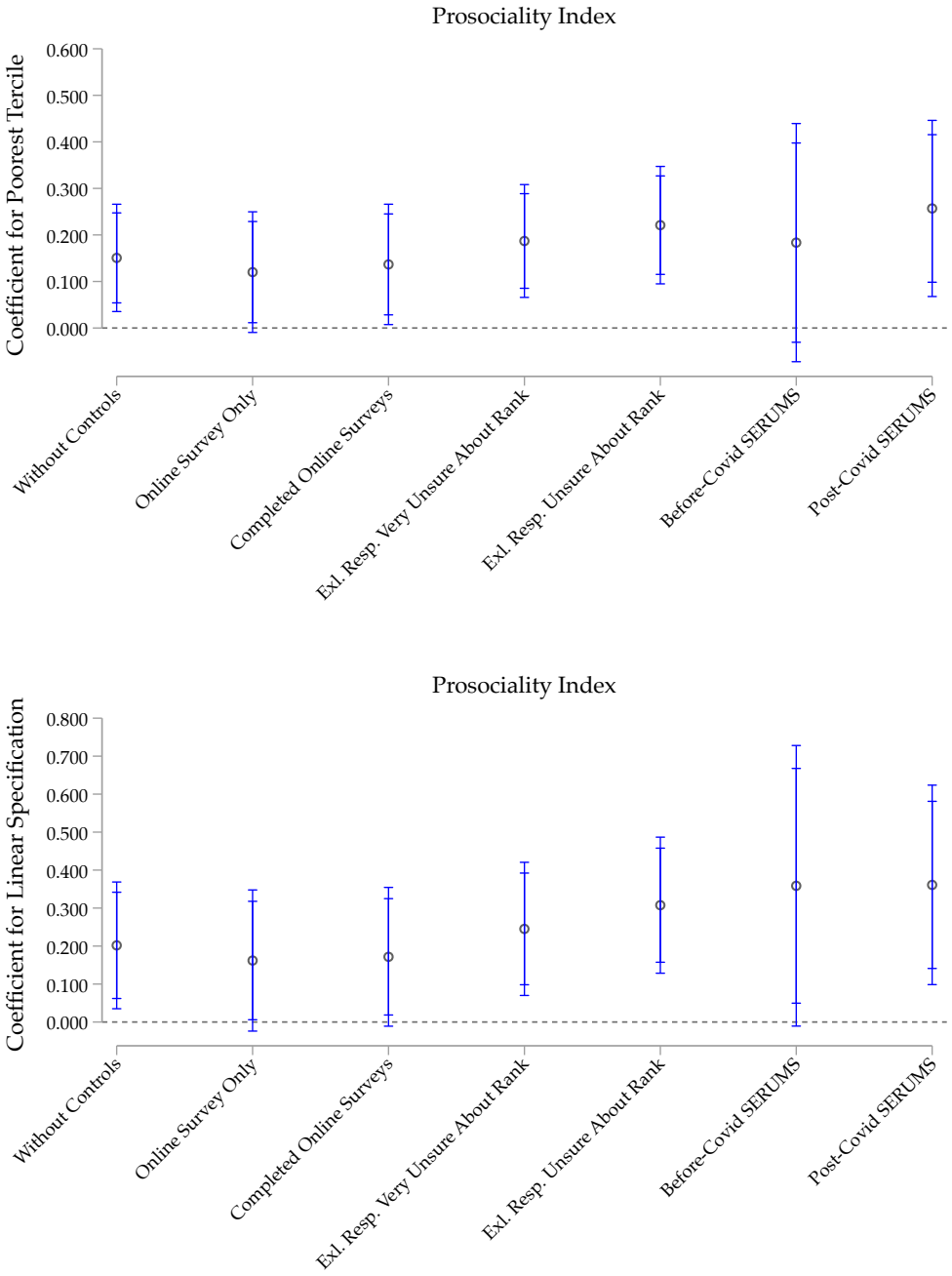
Notes: The first figure plots the regression coefficients for the poorest poverty tercile dummy and the second figure plots the regression coefficient for the linear poverty score variable. The figures show 90 and 95 percent confidence intervals.

Figure A8: Robustness Checks: Employment in Poorest Districts



*Notes:*The first figure plots the regression coefficients for the poorest poverty tercile dummy and the second figure plots the regression coefficient for the linear poverty score variable. The figures show 90 and 95 percent confidence intervals.

Figure A9: Robustness Checks: Prosociality Index



Notes: The first figure plots the regression coefficients for the poorest poverty tercile dummy and the second figure plots the regression coefficient for the linear poverty score variable. The figures show 90 and 95 percent confidence intervals.

Table A1: Bonus Point Structure

	Poverty Index	Public Sector
Poverty Q1	$0.6 - 1.0$	15%
Poverty Q2	$0.15 - 0.59$	10%
Poverty Q3	$0.06 - 0.14$	5%
Poverty Q4	$0.03 - 0.05$	2%
Poverty Q5	$0 - 0.02$	0%

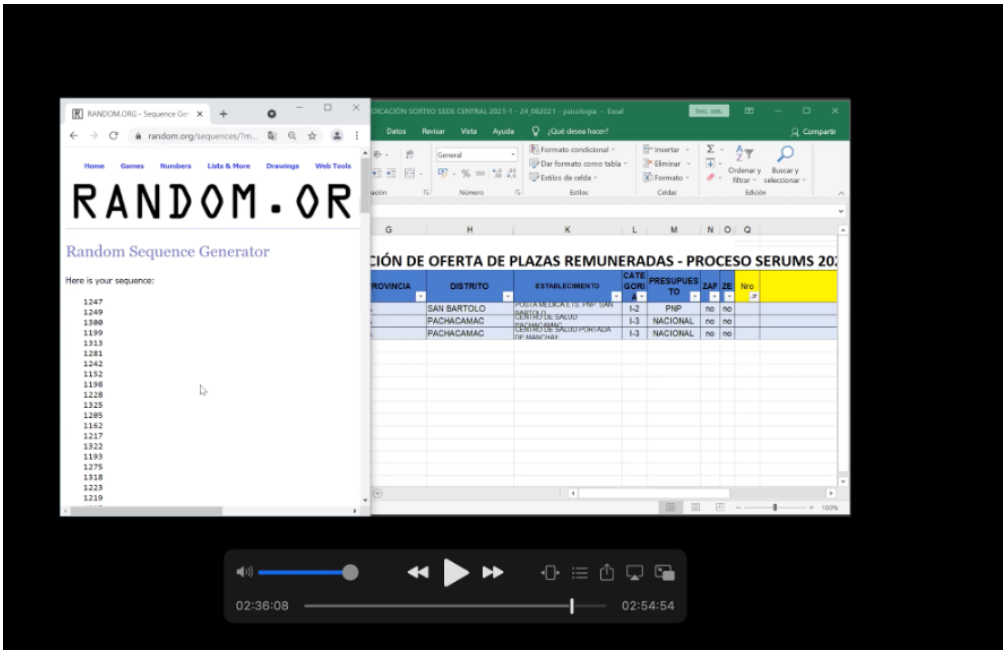
Notes: The second column shows the cutoff points for the poverty quintile definitions. The third column shows the bonus points that are given to psychologists for public sector application based on the poverty quintile of the SERUMS location.

Table A2: Attrition Check

	Started Survey (1)	Finished Survey (2)
Panel A: Linear Specification		
Percentile Rank	0.039	0.033
	(0.129)	(0.132)
Panel B: Discrete Specification		
Medium Rank Tercile	0.019	-0.033
	(0.100)	(0.102)
Bottom Rank Tercile	0.045	0.040
	(0.098)	(0.099)
pval: Medium Tercile = Bottom Tercile	0.741	0.387
Outcome Mean	0.604	0.583
Observations	192	192

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects.

Figure A10: Screenshot of Zoom Lottery



Notes: The figure presents a screenshot from an actual lottery for psychology applicants to the SERUMS program. On the left is the `random.org` platform, which is used to generate a randomized sequence of applicant numbers. On the right is the remaining choice set available at a given lottery stage.

Table A3: Balance Check Conditional on Survey Completion

	Public University	Age at SERUMS Start	Born in Lima	Native Language is Spanish	Female	Wanted to Work for Public Sector	Wanted to Work for Ministry of Health
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Linear Specification							
Percentile Rank	-0.014	-0.451	-0.071	-0.025	-0.008	0.014	-0.112
	(0.034)	(1.303)	(0.055)	(0.047)	(0.066)	(0.063)	(0.082)
Panel B: Discrete Specification							
Medium Rank Tercile	0.000	-0.591	-0.029	-0.022	-0.004	0.098**	-0.002
	(0.021)	(0.957)	(0.039)	(0.034)	(0.047)	(0.042)	(0.060)
Bottom Rank Tercile	-0.007	-0.173	-0.041	-0.009	-0.007	-0.000	-0.103*
	(0.023)	(0.918)	(0.040)	(0.034)	(0.048)	(0.046)	(0.059)
pval: Medium Tercile = Worst Tercile	0.750	0.687	0.773	0.733	0.959	0.029	0.114
Outcome Mean	0.173	27.069	0.201	0.883	0.706	0.828	0.478
Included in Phone Survey	Yes	Yes	Yes	Yes	Yes	No	No
Observations	611	611	557	611	611	475	475

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects. The sample consists of survey respondents. Column 1 comes from administrative data. Columns 2-8 come from survey data.

Table A4: Effect of Lottery Rank on Skill and Network Formation

	Sample: Current Workers							
	SERUMS Helped to Improve				Improvements in ... Helped with Getting Job			
	Knowledge	Clinical Skills	Language Skills	Networks	Knowledge	Clinical Skills	Language Skills	Networks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Linear Specification								
Percentile Rank	-0.128	-0.042	-0.244	-0.210	-0.031	0.152	0.079	0.015
	(0.171)	(0.142)	(0.205)	(0.195)	(0.098)	(0.095)	(0.099)	(0.084)
Panel B: Discrete Specification								
Medium Rank Tercile	0.219*	0.038	0.206	0.020	0.099	0.191***	0.093	0.015
	(0.126)	(0.105)	(0.156)	(0.129)	(0.072)	(0.069)	(0.070)	(0.067)
Bottom Rank Tercile	-0.014	-0.022	-0.125	-0.102	-0.002	0.102	0.029	0.033
	(0.123)	(0.102)	(0.150)	(0.139)	(0.069)	(0.067)	(0.069)	(0.057)
pval: Medium Tercile = Bottom Tercile	0.072	0.607	0.058	0.361	0.185	0.199	0.394	0.800
Outcome Mean	3.301	3.549	2.294	3.157	0.644	0.676	0.203	0.201
Included in Phone Survey	No	No	No	No	No	No	No	No
Observations	361	360	360	360	354	350	347	353

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects. The sample is restricted to respondents who were currently working for pay at the point of the survey.

Table A5: Effect of Lottery Rank on Job Availability

	Respondent Could Get a Job at Ministry of Health		Respondent Could Get a Job at ESSALUD		Respondent Could Get a Job in Private Sector	
	Agree	Strongly Agree	Agree	Strongly Agree	Agree	Strongly Agree
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear Specification						
Percentile Rank	-0.035	0.043	-0.052	0.015	-0.011	0.013
	(0.082)	(0.070)	(0.084)	(0.058)	(0.073)	(0.060)
Panel B: Discrete Specification						
Medium Rank Tercile	0.017	0.039	0.012	0.010	-0.021	0.009
	(0.058)	(0.049)	(0.062)	(0.041)	(0.055)	(0.043)
Bottom Rank Tercile	0.015	0.048	0.003	0.010	-0.001	0.005
	(0.058)	(0.052)	(0.060)	(0.041)	(0.051)	(0.043)
pval: Medium Tercile = Bottom Tercile	0.971	0.863	0.886	0.995	0.717	0.922
Outcome Mean	0.681	0.186	0.511	0.128	0.777	0.160
Included in Phone Survey	No	No	No	No	No	No
Observations	478	478	478	478	478	478

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects.

Table A6: Relationship Between Lottery Rank and SERUMS Location Attributes

	Bottom Rank Tercile
	(1)
Government Poverty Index	0.307**
	(0.149)
Mid-sized Primary Healthcare Facility	-0.256*
	(0.153)
Large Primary Healthcare Facility	-0.140
	(0.160)
Hospital	-0.426**
	(0.192)
Same Department as Birthplace	-0.119
	(0.117)
Monthly Salary (in 1,000 Soles)	0.013
	(0.073)
Outcome Mean	0.445
Observations	384

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects.

Table A7: Effect of Lottery Rank on Additional Job Preferences

	... Is Very Important for Choosing a Job						
	Salary	Work-Life Balance	Safety	Compability with Spouse	Intellectual Satisfaction	Work Environment	Local Infrastructure
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Linear Specification							
Percentile Rank	-0.018	0.290	-0.088	-0.111	0.169	0.153	0.057
	(0.187)	(0.177)	(0.207)	(0.275)	(0.174)	(0.230)	(0.251)
Panel B: Discrete Specification							
Middle Tercile	-0.008	0.059	-0.033	-0.043	0.044	0.038	-0.027
	(0.056)	(0.058)	(0.059)	(0.045)	(0.058)	(0.059)	(0.048)
Bottom Tercile	0.005	0.088	0.004	0.017	0.095*	0.088	0.033
	(0.052)	(0.054)	(0.054)	(0.041)	(0.056)	(0.055)	(0.047)
pval: Medium Tercile = Bottom Tercile	0.818	0.618	0.531	0.198	0.399	0.402	0.227
Outcome Mean	0.384	0.434	0.397	0.206	0.410	0.483	0.249
Included in Phone Survey	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	551	553	550	535	552	547	549

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, birth region fixed effects, and a dummy variable that indicates whether the survey was done over the phone.

Table A8: Effect of Lottery Rank on Prosociality Index Components

	Prosociality Index Components			Donation Subindex Components		
	Opportunities to Help the Poor are Very Important	Government Should Increase Aid to the Poor	Donation Subindex	Donated Time	Donated Money	Hypothetical Scenario
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear Specification						
Percentile Rank	0.090	0.074	0.032	0.078	-0.070	0.004
	(0.068)	(0.058)	(0.040)	(0.068)	(0.065)	(0.047)
Panel B: Discrete Specification						
Medium Rank Tercile	0.028	-0.010	-0.012	-0.005	-0.111**	-0.006
	(0.050)	(0.043)	(0.029)	(0.052)	(0.049)	(0.034)
Bottom Rank Tercile	0.073	0.057	0.030	0.063	-0.020	0.024
	(0.048)	(0.040)	(0.028)	(0.048)	(0.047)	(0.034)
pval: Medium Tercile = Bottom Tercile	0.390	0.130	0.168	0.203	0.086	0.405
Outcome Mean	0.433	0.754	0.328	0.557	0.476	0.140
Observations	691	687	532	672	671	673

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects. Columns 1-3 and 5-7 were also asked as part of the phone survey and include further a dummy variable for whether the survey was done by phone. The sample in columns 1-4 consists of psychologists who completed SERUMS at the point of the survey. The sample in columns 5-7 consists of psychologists who were currently doing SERUMS or who completed the program three months prior.

Table A9: Effect of Lottery Rank on Decisions in Dictator and Spectator Games

	Donations in Dictator Game		Donations in Spectator Game		
	Vitamin A NGO	Urban Culture NGO	Urban Domestic Violence NGO	Rural Domestic Violence NGO	Urban Culture NGO
	(1)	(2)	(3)	(4)	(5)
Panel A: Linear Specification					
Percentile Rank	0.893	-0.973	-0.550	0.459	0.091
	(0.708)	(0.869)	(0.393)	(0.473)	(0.376)
Panel B: Discrete Specification					
Medium Rank Tercile	-0.474	0.579	-0.422	0.721*	-0.299
	(0.551)	(0.497)	(0.356)	(0.422)	(0.300)
Bottom Rank Tercile	-0.645	0.353	-0.392	0.295	0.097
	(0.596)	(0.495)	(0.281)	(0.348)	(0.274)
pval: Medium Tercile = Bottom Tercile	0.767	0.698	0.934	0.375	0.197
Outcome Mean	2.503	1.562	1.726	2.169	1.105
Observations	457	457	135	135	135

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, a dummy for whether Spanish is the respondent's native language, and birth region fixed effects. The sample consists of psychologists who completed SERUMS at the point of the survey.

Table A10: Effect of Lottery Rank on Main Outcomes by Birthplace

		Index Components			
	Outcome Index	Works for Ministry of Health	Prosociality Index	More Willing to Work for MoH	More Willing to Work in Poor Areas
	(1)	(2)	(3)	(4)	(5)
Medium or Bottom Rank Tercile × Born in Lima	0.234*	0.096	0.078	0.131	0.171
	(0.124)	(0.105)	(0.058)	(0.094)	(0.115)
Medium or Bottom Rank Tercile	0.076	0.069	0.028	0.081*	-0.028
	(0.058)	(0.048)	(0.027)	(0.048)	(0.050)
Born in Lima	-0.200**	-0.114	-0.074	-0.083	-0.118
	(0.097)	(0.086)	(0.048)	(0.078)	(0.089)
Outcome Mean	-0.043	0.332	0.503	0.215	0.230
Observations	557	557	553	550	481

Notes: Robust standard errors appear in parentheses. All regressions include lottery stratification fixed effects and a vector of controls that consists of age, gender, a dummy for whether the respondent's university was public, and a dummy for whether Spanish is the respondent's native language.

Table A11: Randomization Inference

Variable	p-value (Bottom Rank Tercile)	p-value (Percentile Rank)
Works For Public Sector	0.162	0.186
Works for Ministry of Health	0.035	0.024
Works in Poorest Districts	0.053	0.092
Prosociality Index	0.023	0.027

Notes: The exercise randomly re-assigns the lottery rank to each respondent 2,000 times. For each iteration, we then repeat our analysis. The p-value is calculated as the share of the placebo coefficients that are larger in magnitude than the actual coefficient (in absolute terms).