Motivating Self-employed Women to Contribute to Social Security in Bolivia

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Abstract

Over 30% of female workers are self-employed across Latin America, often without health insurance and pension benefits. To understand why and explore potential solutions, we conducted a laboratory experiment in Bolivia to assess the efficacy of interventions to influence the behavior of self-employed women. Participants were randomly assigned to one of six groups, receiving either a message on pension benefits, a message on health insurance advantages, or reduced enrollment non-monetary cost for savings or retirement plans. Our findings indicate that informative messages alone were effective in increasing voluntary contributions to experimental pension and health insurance schemes. Reductions in time, physical and cognitive fatigue required for enrollment did not lead to a significant increase of voluntary contributions. Moreover, we found that the effectiveness of these interventions varied depending on the type of worker, with high-effort workers being the most responsive.

Keywords: self-employment; pension system; health insurance; laboratory experiment

JEL Codes: C91, J16, J20, J70

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1 Introduction

In Latin America, self-employment plays a crucial role in women's economic participation, offering flexibility and allowing them to balance work and caregiving responsibilities. However, this flexibility often comes at the cost of economic security. In 2022, self-employment accounted for 28.2% of the total remunerated workforce across

the region, with women disproportionately represented in informal and precarious jobs (CEPALSTAT, 2022). Compared to employees, self-employed workers experience significantly lower job quality (European Commission, 2008), marked by the absence of essential benefits such as health insurance and social security contributions. This lack of coverage exacerbates women's financial vulnerability, particularly during health emergencies and old age (Fachinger & Frankus, 2017; Karjalainen & Crawford, 2020). The COVID-19 pandemic underscored these risks, revealing how self-employed women were particularly susceptible to sharp income losses and unaffordable healthcare costs due to the unstable nature of their work (Putra et al., 2023).

Bolivia presents a particularly relevant case, as 55.2% of the female workforce is self-employed, one of the highest rates in Latin America (CEPALSTAT, 2022). This high prevalence of self-employment among women is closely linked to the country's economic structure, limited formal job opportunities, and gendered caregiving responsibilities that push women toward informal and home-based work. Despite these vulnerabilities, most self-employed women do not voluntarily contribute to pension systems or health insurance, even when they have the financial means to do so. Structural barriers, such as complex bureaucratic procedures, lack of information, and distrust in the system, further discourage participation (Bertranou, 2001).

Expanding social protection coverage for self-employed women is critical for reducing gender inequalities and promoting financial resilience. Evidence from developing countries suggests that increasing access to social security can improve long-term economic stability, reduce poverty in old age, and enhance access to healthcare services (Bosch & Campos-Vazquez, 2014; Packard et al., 2019). When women have access to reliable pension systems, they are better able to plan for the future, reducing reliance on family support and informal safety nets (Rofman et al., 2014). Furthermore, improved healthcare access has significant implications for women's well-being, allowing them to maintain consistent employment and avoid catastrophic health expenditures (Gaspard, 2018).

Behavioral economic strategies to include informal workers into social protection systems have been tested. For instance, focusing on freelance professionals in Europe, Rubaltelli and Lotto (2021) demonstrate that carefully designed nudges can move voluntary contribution margins beyond statutory minima. Similarly, a unique large-scale quasi-experiment in Brazil by Villa et al. (2015) demonstrated that sending postal reminder booklets to self-employed workers increased social security contributions by 15% and compliance by 7 percentage points, albeit temporarily. To be sure, the literature on this important subject is growing, but context-dependence and intricate heterogeneities hinder cross-country comparability (Weller, 2022). There is still a need to know more about how self-employed individuals, particularly women, make voluntary decisions about social protection in Latin America, where high informality often intersects with acute deprivation. Indeed, the regional Federation of Pension Funds Administrators (FIAP) still regularly emphasizes the urgent need for evidence-based approaches to incorporate informal workers into social protection systems, advocating for context-tailored interventions that combine information, delivery channels, and affordability measures (see e.g. FIAP (2024)).

Aiming to fill this gap, we conducted a laboratory experiment in La Paz and Cochabamba with self-employed women to examine barriers to social protection participation and to test interventions designed to increase contributions to social security. Participants engaged in a task simulating income volatility typical of self-employment and were given the option to enroll in a pension plan or health insurance. The experimental design followed a 2×3 factorial structure, combining an informational campaign on social security benefits with a reduction in

procedural barriers to enrollment. To contextualize the interventions, we also carried out focus groups to elicit women's beliefs and constraints regarding social security.

Our findings reveal that self-employed women exhibit limited responses to interventions aimed at reducing time, physical and cognitive fatigue for social security enrollment. However, providing information about the benefits of social protection increased contributions by 5.9% for pensions and 2.8% for health insurance. Notably, the combined intervention (information plus non-monetary cost reduction) did not enhance participation in health insurance, suggesting that the effect of information may be diluted when procedural simplifications are introduced. The effectiveness of these interventions is also shaped by individual heterogeneity, as women who exhibit high effort in their economic activities or display impatience are more responsive to informational treatments.

By shedding light on the structural and behavioral barriers preventing self-employed women from securing social protection, our study also contributes to ongoing discussions on gender, informality, and economic security in the Global South. Given that self-employed women, unlike formal employees, face a status quo in which they receive no health insurance or pension coverage by default. This autonomy makes their decision problem qualitatively different compared to formal employees; informal workers must actively choose whether to participate in social protection at all and, if so, determine the amount to contribute. Our framework isolates behavioral mechanisms by directly comparing informational versus non-monetary cost reduction (i.e., procedural friction and struggles) interventions and measuring both enrollment and contribution-share margins. We thereby clarify when information rather than easier procedures drives voluntary contributions to social security. Indeed, this dual decision margin is more complex and arguably more informative than the choices studied in employer-based systems. Specially, we highlight the central role of perceptions in shaping these choices. How women view the value and reliability of health insurance and pensions strongly influences their willingness to contribute, and shifts in these perceptions can meaningfully change their behavior. Our results underscore the importance of targeted informational interventions in fostering financial resilience among self-employed women and highlight the need for policies that extend social protection to those working outside the formal sector. Additionally, given Bolivia's high rate of informal employment, our study offers insights for policymakers aiming to bridge the gap between self-employed workers and formal social protection systems. The repeated message structure in our study combined with simulated income shocks better mimics the realities of self-employment in the country, improving the relevance of our analysis for policy pilots seeking sustained behavioral change.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on labor market decisions, self-employment, and behavioral interventions related to social protection. Section 3 provides the contextual background on self-employment and social security in Bolivia. Section 4 introduces the theoretical framework underpinning our hypotheses. Section 5 describes the experimental design and implementation, while Section 6 details the data collection process and key variables. Section 7 presents the main empirical findings, and Section 8 concludes with a discussion of the implications of our results for policy and future research.

2 A brief literature overview

This paper contributes to three areas of social science research. First, it examines the literature on labor market decisions and the factors influencing them. While much of the literature focuses on the decision to enter the labor market (Flinn & Heckman, 1982; Goldin, 1989) or choosing between being a dependent worker or self-employed (Bates & Bradford, 1995), less attention has been given to workplace preferences and attitudes, such as effort levels or social security contributions. Our study addresses this gap by focusing on self-employed women, a group whose decisions are fully autonomous, as unlike salaried workers, their status quo does not include social security or health insurance by default. They must actively decide whether to contribute and, if so, how much. This richer decision margin allows us to extend the literature on labor market choices to the domain of voluntary social protection enrollment, where the absence of employer mediation makes individual perceptions and behavioral factors especially salient.

Second, the literature has explored the relationship between certain preferences and behavioral traits, and the likelihood of self-employement. Previous research has consistently highlighted factors such as lower risk aversion, stronger future orientation, and specific personality traits like commitment and self-confidence (Cook & Whittle, 2015; Nobre et al., 2022; Shtudiner, 2018) as being associated with self-employment. For instance, a Danish field experiment conducted by Andersen et al. (2014) found that entrepreneurs are more inclined to endure long waiting periods in pursuit of specific rewards. This finding aligns with the research in Petrakis (2007), which found that countries with populations inclined towards risk-seeking behavior and immediate rewards tend to have higher levels of entrepreneurship. It is true that biases such as lower risk aversion, perseverance, resolution and self-confidence may initially appear to be beneficial as they motivate self-employed individuals to become more productive workers. However, these biases have a detrimental effect on the overall quality of employment, making them work more hours and postpone important personal decisions. Our study builds upon these findings by demonstrating that self-employed women, despite their determination and perseverance, struggle to mitigate the consequences of not having future resources.

Third, our research focuses on analyzing the impact of interventions in mitigating behavioral biases. In recent years, nudges have been used in policies to guide individuals towards more optimal choices and away from less optimal ones (Thaler & Sunstein, 2008). Specifically, research on increasing savings with nudges has yielded significant results, demonstrating the effectiveness of various nudges (Madrian & Shea, 2001; Thaler & Benartzi, 2004). Similarly, in Latin America, there has been a growing trend in utilizing nudges to promote savings (Karlan et al., 2016). Research has also focused on analyzing nudges aimed at increasing participation and contributions in the pension system (Beshears et al., 2015, 2021) and on health insurance (Baicker et al., 2012; Hanoch, 2019).

Effective interventions include establishing default contribution rates and automatic enrollment to reduce cognitive and transactional costs (Madrian & Shea, 2001). These are most effective when combined with commitments to allocate a proportion of future salary towards retirement savings, addressing the lack of self-control to prioritize future consumption over current consumption (Thaler & Benartzi, 2004). Other effective interventions include targeting the inattention bias by focusing on reminders (Domurat et al., 2021) and providing repeated opportunities (Beshears et al., 2013) to the potential contributors. However, most of these interventions primarily target formal employees, often overlooking the behavioral biases displayed by self-employed individuals. Further-

more, due to their characteristics, such interventions may be impractical for implementation among self-employed workers. Therefore, our research aims to shed light on the effectiveness of interventions specifically tailored to our target audience, informing future policies and interventions geared towards addressing the needs and behavioral biases of self-employed individuals.

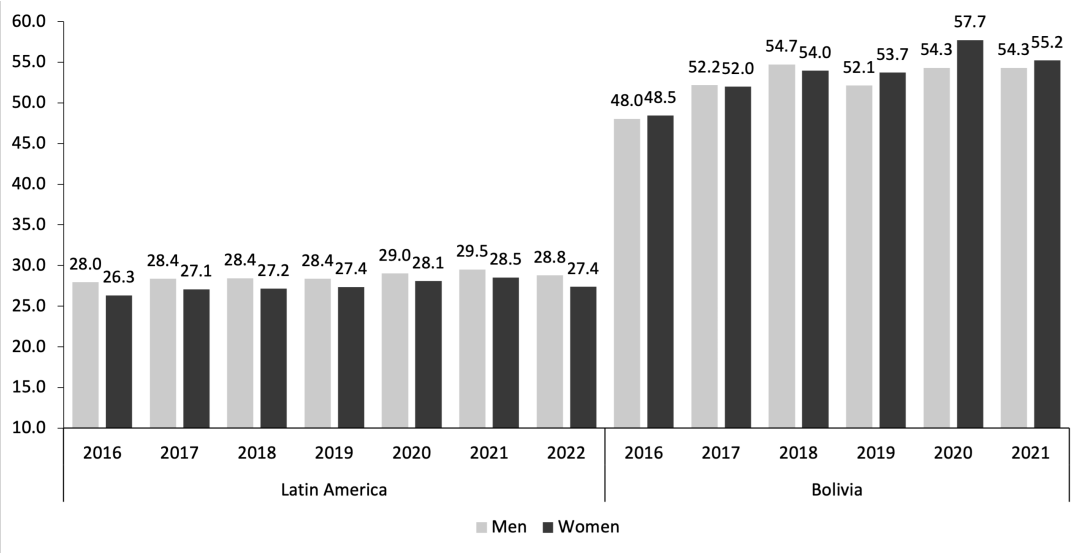
3 Context

3.1 Self-employment and job quality in Bolivia

Bolivia has had one of the most consistently high levels of self-employment over the recent decades in the region, with 55.2% of women engaged in self-employment compared to the Latin American average of 27.4%, according to CEPALSTAT (2022) data. This remarkable difference underscores the unique labor market structure in Bolivia, which is corroborated by World Bank data based on ILO information. Since 2020, COVID-19 policies have reshaped the labor market. Bolivia's strict quarantine increased women's self-employment while dependent employment fell over 4pp from 2019 to 2020 (CEPALSTAT, 2022, see Figure 1).

Figure 1: Self-employment Rate by Gender in Latin America and Bolivia

(In percentage of total paid workers, 2016-2022)



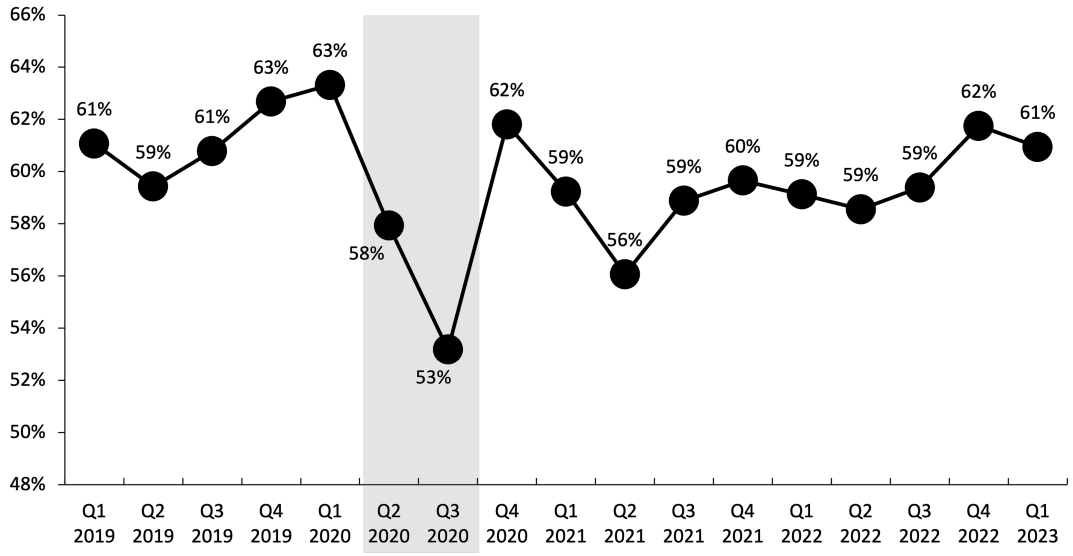
*S*ource: CEPALSTAT (2022)

Bolivian workers face the lowest job quality in Latin America, characterized by low incomes, limited career advancement opportunities, and a lack of social security (International Labor Organization, 2022). While more than 50% of workers in Latin America lack social security, this figure rises to over 76% in Bolivia (Sehnbruch et al., 2020). According to the 2022 Continuous Employment Survey, only 12.4% of female Bolivian workers contribute to the social security system, and just over half (55.9%) of dependent employees have a formal contract. Similarly, only 15.4% of male workers contribute to the Social Security system, and 45% have a formal contract.

Even before the COVID-19 pandemic, self-employed women earned lower incomes compared to their dependent counterparts. This income disparity reached its peak in the third quarter of 2020, with self-employed women's monthly earnings being only 53% that of dependent workers (see Figure 2).

Figure 2: Proportion of self-employed women's monthly income relative to dependent workers

(In percentage, 2019-2023)



*S*ource: Continuous Employment Survey of Bolivia, 2022

Dependent workers typically experience higher job quality compared to the self-employed. Employers have the legal responsibility to ensure that their employees are enrolled in the pension system, and that they receive health insurance coverage. In that sense, it is much easier for dependent workers to access employment benefits. Indeed, self-employed individuals must navigate complex administrative procedures on their own to voluntarily participate in these social benefit programs.

3.2 Pension system and health insurance voluntary enrollment in Bolivia

Bolivian law mandates that every employee must benefit from long-term and short-term insurance (Supreme Decree No. 21637). Short-term insurance covers dependent workers for short-term illnesses, maternity, and professional risks. This insurance is financed by the employer's contribution, set at 10% of the total earnings of insured dependents. Furthermore, Article 5 of Administrative Resolution ASUSS 065/2018, stipulates that all employers must register and affiliate their workers with the managing entity.

Concerning long-term insurance, all firms are required to register with the Pension System and provide coverage for their dependents[1]. This system includes several benefits, such as the pension for old age, the pension for disability due to occupational risk, and the pension for death due to occupational risk, among others. Employers are designated as withholding agents for labor contributions, which amount to 12.71% of workers' income, and are also required to contribute 6.71% of employees' salaries from their own resources. Contributions are due by the last business day of each month, and failure to meet this deadline results in sanction and interest payments for employers.

Even though current regulations focus on dependent workers, and they clearly establish that employers are responsible for registering their employees and making the required monthly contributions, any self-employed

[1]Despite legal mandates, some employers evade requirements using alternative types of contracts that do not require contributions to the pension system.

worker who wishes to contribute voluntarily to either system can do so. To register in the Pension System, voluntary contributors must comply with mandatory paperwork[2] and commit to paying 14.42%[3] of their declared income, which must be at least equivalent to a current monthly national minimum wage (USD 359 in 2024). Voluntary contributors must accumulate a minimum of 180 months (15 years) of contributions, although payments can be non-consecutive for flexibility. Pension amounts depend on total contributions, so underreporting income or contributing less leads to lower retirement payouts.

Similarly, insurance companies and health institutions offer voluntary insurance for self-employed workers. For example, Caja Nacional de Salud (CNS)[4], one of the main health institutions in the country, allows self-employed workers to enroll provided that they have a guarantor affiliated with the CNS[5]. Voluntarily insured workers must report a monthly income of at least 500 USD, from which they must pay 20% every two months. In return, their legal spouse, and children under the age of 19 can also be covered by health insurance.

Clearly, self-employed individuals have the option to contribute to either the pension system or a health insurance plan, yet reality shows that most of them choose not to do so. One reason may be that the enrollment process is complex and time consuming. Insufficient income is another possible cause. Despite some women in our sample exhibiting high income, their average monthly income is Bs 2,181.41 (USD 313.42), indicating that a majority of them fell below the required threshold to become enrolled in these systems. Moreover, for the 28.2% of women who have sufficient earnings, their average disposable monthly income for the months they contribute to the pension system and health insurance would be Bs 1,417.92 (USD 203.72), on average, due to the high premium rates (i.e., 35% when they pay both contributions).

Our experimental setting is based on the fact that even if many self-employed women indeed earn a lower income than the official minimum for enrollment, our pre-experiment focus group revealed that most women may have enough resources to make voluntary contributions after covering their household expenses.

The requirement of a minimum income level is primarily set to define the minimum contribution that individuals must make to enroll in the health insurance plan and the pension system. Yet, for voluntary contributors, the effective amount of their contribution is self-declared in the official forms (after all, they are self-employed). Thus, women can simply contribute the minimum amount that they are capable of affording, even not having the income level required. In these circumstances, we posit that enrollment is chiefly defined by the workers' willingness to pay at least the minimum contribution amount, which is in turn largely shaped by the behavioral biases that we have described, as well as the type/amount of information these women possess. In our experimental setting, we will go on to show that 95% of non-contributors were unaware that self-employed individuals can contribute to health insurance plans.

[2]The process is the same for all pension fund managers: contributors visit the Public Manager's office to complete the Registration and Declaration Form, then make their first payment at an authorized financial entity.

[3]The percentage contributions break into 10% Monthly Quote, 1.71% Common Risk Premium, 1.71% Labor Risk Premium, 0.5% Solidarity Contribution, and 0.5% Commission for the Administrator.

[4]The National Health Fund administers the short-term Social Security program,covering illness, maternity, and professional risks.

[5]Guarantors must submit a signed form, ID, electricity bill, and two recent payment slips. Additionally, contributors must complete over size additional forms.

4 Theoretical Framework

Theoretically, we model the decision of a self-employed woman who chooses the level of effort (e), and the shares of income allocated to health insurance (s_H) and pension contributions (s_P). She maximizes expected lifetime utility from consumption, net of the disutility of work and enrollment costs, while incorporating the future benefits of social security contributions. This framework allows us to highlight three interconnected trade-offs. First, greater effort raises current income but entails a rising marginal disutility (work intensity margin). Second, allocating resources to health insurance or pensions reduces current disposable income but provides future utility by lowering risk exposure and increasing retirement consumption (benefit-consumption trade-off). Third, higher contribution rates reduce disposable income, which may feed back into effort choices through substitution and income effects (interdependence between margins).

Building on the joint labor supply framework of Blundell and MaCurdy (1999) and its extensions to the self-employed (French & Jones, 2011; Holtz-Eakin et al., 1996), the worker solves the following problem:

$$\max_{e,s_H,s_P} U = u(C) - \phi(e) - \kappa(s_H, s_P) + \beta W(s_H, s_P), \tag{1}$$

subject to

$$C = Y(e, \varepsilon) \cdot (1 - s_H - s_P), \tag{2}$$

where the time subscript has been dropped for simplicity. Thus $u(C)$ is the instantaneous utility from consumption (assumed concave). $\phi(e)$ is the disutility of effort (assumed convex) (Blundell & MaCurdy, 1999). $\kappa(s_H, s_P)$ represents the disutility of non-monetary costs of enrollment (i.e time, cognitive, and psychological burdens associated with contributions; see Holtz-Eakin et al. (1996)). $Y(e, \varepsilon) = y_0 + f(e) + \varepsilon$ is stochastic income from self-employment with productivity shocks ε (Parker, 2018) and the possibility of having a non-stochastic minimum income y_0, allowing for generality. Expected future utility from contributions is denoted as $W(s_H, s_P)$, where health contributions reduce the expected desutility from health shocks (French & Jones, 2011; Gruber & Madrian, 2004), and pension contributions increase future retirement consumption (Disney et al., 2001). Finally, β is the discount factor associated to future utility.

Income is produced through effort:

$$f(e) = \theta_e e^{\alpha}, \tag{3}$$

which reflects the flexibility of self-employed workers to adjust effort margins without the rigid contracts of wage employment.

Following French and Jones (2011) and Gruber and Madrian (2004), future utility from health insurance, $W_H(s_H)$, is modeled as the expected reduction in utility losses from health shocks. Let p_H denote the probability of a shock without insurance, L_H the associated consumption loss, and $q_H(s_H)$ the coverage level (increasing in s_H). Then, denoting as C_{t+1} the future consumption level:

$$W_H(s_H) = p_H \cdot [u(C_{t+1} - L_H \cdot (1 - q_H(s_H))) - u(C_{t+1} - L_H)]. \tag{4}$$

For pensions, self-employed workers who contribute s_P today with respect to their average income y_{avg} accumulate entitlements that translate into retirement income later in life (Disney et al., 2001). We assume that each contribution earns a gross return $r_P > 0$ over time, which finances benefits $B_P(s_p)$ once retirement begins at age R. Defining $B_P(s_P) = r_p \cdot (1 - s_P) \cdot Y^{avg}$ as the annual pension benefits, expected future utility is given by

$$W_P(s_P) = \sum_{\tau=R}^{T} \beta^{\tau}\, u(C_\tau(B_P(s_P))), \tag{5}$$

where T denotes lifespan.

The combined future utility is then:

$$W(s_H, s_P) = \Omega_H W_H(s_H) + \Omega_P W_P(s_P), \tag{6}$$

where $W_h(s_H)$ captures the insurance value of health contributions and $W_P(s_P)$ represents the consumption-smoothing value of pension contributions. Following French (2005), this formulation reflects the two central motives for social protection: reducing the risk of health expenditures and ensuring the stability of retirement income. The parameters Ω_H and Ω_P act as salience or weighting factors that capture the perceived importance individuals attach to each type of benefit. Higher Ω_H and Ω_P increases the effective weight of the corresponding component in future utility, allowing the model to account for heterogeneity in perception, attention or trust in the health and pension systems (More details in Appendix A).

From this setup, four testable propositions follow.

Proposition 1 (Information and Perceptions). Information shocks (e.g., providing clear explanations of benefit entitlements) increase the weights of future utility from contributions, which capture the salience and perceived reliability of health and pension benefits, by making benefits more salient and credible. Providing information about the benefits of social protection increases optimal contributions to both health insurance and pensions (denoted as s_H^* and s_P^*, respectively)[6], as higher salience raises the expected utility from future coverage. Formally,

$$\frac{\partial s_H^*}{\partial \Omega_H} > 0 \quad \text{and} \quad \frac{\partial s_P^*}{\partial \Omega_P} > 0.$$

Proposition 2 (Non-Monetary Cost Reduction). Reducing non-monetary costs associated with enrollment and contributions to benefits lowers the effective burden of contributing, without directly altering beliefs about benefits. Reducing the these required costs to contribute increases participation in social protection by lowering the transaction cost of enrollment. Thus,

$$\frac{\partial s_H^*}{\partial \kappa} < 0 \quad \text{and} \quad \frac{\partial s_P^*}{\partial \kappa} < 0,$$

Proposition 3 (Interaction of Information and Non-Monetary Costs). When both interventions are introduced simultaneously, the effects may not be additive. If procedural simplification reduces the salience of the contribution decision, the marginal impact of information may be diluted. The combined effect of information and non-monetary cost reduction is weaker than the sum of their individual effects, as the reduction of this costs

[6]The formal derivation of s_H^* and s_P^* from the worker's optimization problem is provided in Appendix A

may shift attention away from benefit perceptions.

$$\frac{\partial^2 s^*}{\partial \Omega \, \partial \kappa} > 0,$$

implying that

$$\left.\frac{\partial s^*}{\partial \Omega}\right|_{\kappa \text{ low}} < \left.\frac{\partial s^*}{\partial \Omega}\right|_{\kappa \text{ high}}.$$

When both salience and non-monetary costs are altered, the marginal effect of information on contributions is weaker under lower procedural costs than under higher ones.

Proposition 4 (Heterogeneity) Let individuals differ in risk aversion (ρ) and discount factor (β). Then:

$$\frac{\partial^2 s^*}{\partial \Omega_{\cdot} \, \partial \rho} > 0, \quad \frac{\partial^2 s^*}{\partial \Omega_{\cdot} \, \partial \beta} > 0,$$

where $\Omega_{\cdot}$ can be Ω_H or Ω_P, and

$$\frac{\partial^2 s^*}{\partial \kappa \, \partial \rho} < 0, \quad \frac{\partial^2 s^*}{\partial \kappa \, \partial \beta} < 0,$$

indicating that information treatments are more effective among risk-averse and patient individuals, while non-monetary cost reductions are more effective among impatient and risk-seeking individuals.

This framework formalizes the behavioral and economic trade-offs faced by self-employed workers when deciding on social security contributions and guides our experimental design.

5 Experimental Design

We designed a laboratory experiment to evaluate the implementation of interventions that modify the behavior of self-employed women to increase their job quality. The following subsections describe in detail the design and implementation of the experiment.

5.1 Subject recruitment

We implemented a multifaceted recruitment approach with three distinct strategies. First, we leveraged union affiliations to gather participants from various sectors. Bolivia, has over 500 unions in different economic sectors and activities (Lazar, 2008). We collaborated with one of the largest associations of self-employed Bolivian women (Confederación de Mujeres Trabajadoras por Cuenta Propia) to obtain a contact list with phone numbers. Recruiters used this list to invite women to participate in the experiment. This strategy recruited 56% of the participants from 7 unions in La Paz and 3 unions in Cochabamba.

Our second strategy targeted participants at their workplaces. Recruiters visited popular local markets and small businesses to invite self-employed vendors. They collected contact details of interested women in person and made subsequent phone calls to coordinate participation schedules, recruiting 33% of the total sample from 19 different neighborhoods in La Paz, and 8 in Cochabamba. Finally, we recruited entrepreneurs through Facebook Marketplace. Recruiters identified vendors on this platform by their Marketplace publications and contacted them to inquire about their interest in participating. This method resulted in the recruitment of 11% of the

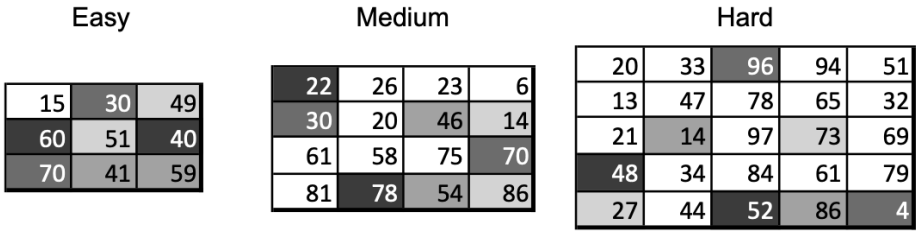
participants. Across all three recruitment channels, recruiters made follow-up phone calls to schedule participants into experimental sessions. In total, we successfully recruited 424 participants forming a diverse sample from both La Paz and Cochabamba.[7]

5.2 Decision-Making Framework and Effort Task

We followed the decision space design in Train and Weeks (2005) and the decision scheme in Douglas and Shepherd (2002), where each participant chose a work scheme. To capture employment decisions, we used an effort-elicitation task, a common method used to assess individual investment and performance in an experimental setting. We used the "Pairs to 100" task, where participants find number pairs summing up to one hundred[8]. Each participant had the option to select their preferred level of difficulty (i.e., easy, medium, and hard), defined by the size of number sets (see Figure 3). Once they chose their desired difficulty level, they were provided with a booklet containing six exercises of the same level, and they had three minutes to complete them. For an exercise to be considered correct, participants needed to identify four pairs of numbers, regardless of the chosen difficulty level.

This experimental design directly responds to our theoretical framework, in which self-employed workers simultaneously choose their level of effort, and contributions. Moreover, higher effort raises income but entails higher disutility.

Figure 3: Example of Effort Task by Difficulty



Note: Each participant selected a preferred difficulty level. An exercise was considered correct if four pairs of numbers summing to one hundred were identified. In the example, shaded squares highlight the correct pairs. The hard level involves greater cognitive effort because it contains more numbers from which to find the pairs.

The monetary reward they could obtain depended on the number of correct exercises and task difficulty. They received a reward of Bs 20 (USD 2.87) per correct exercise at the easiest level, Bs 30 (USD 4.31) at the middle level, and Bs 40 (USD 5.74) at the hardest. Since there are six exercises per book, the maximum possible rewards were Bs 120 (USD 17.24), Bs 180 (USD 25.86), and Bs 240 (USD 34.48) for each level respectively. On average, participants earned Bs 75.72 (USD 10.88).

Allowing participants to self-select the difficulty level mirrors the real-world context of self-employment, where individuals choose the intensity and complexity of their work. In our setup, difficulty maps onto effort, as harder tasks require greater cognitive effort but also generate higher potential income, just as in the theoretical model where higher effort translates into higher output. Unlike formal employees, self-employed workers face this trade-

[7] Online Appendix 3 contains the power calculation. We used a power of 0.8 and a Minimum Detectable Effect (MDE) of 0.4 standard deviation units for our two variables of interest.

[8] In the pilot test, we compared two tasks: "Pairs to 100" and "How many triangles?" and chose the former because participants understood it better. The test also determined the difficulty levels.

off directly, deciding not only whether to work but also how intensively to do so. This decision is not neutral because the difficulty level indirectly determines the income-generating potential of effort and the perceived cost of contributing, thereby shaping the margins of adjustment most relevant for self-employed workers. By incorporating this endogenous choice, the experiment targets a policy-relevant treatment parameter under realistic conditions.

As we have stated in our theoretical framework, self-employment income is often unstable and influenced by external factors. To simulate this unpredictability, our experiment introduced two random states of nature: (1) healthy and (2) unhealthy. In the healthy state, participants received the full reward, while in the unhealthy state, they lost 80% of it. The 80% loss was chosen to simulate a significant financial shock, highlighting the necessity of health insurance. A smaller loss might not have provided a strong enough incentive.

To determine the state of nature, participants threw a dice that had 3 faces that meant good health while the other 3 faces meant bad health, making a 50% chance of having a negative shock. This corresponds to the probability of health shocks ($p_H = 0.5$) in our theoretical model, where expected income is a weighted average of good and bad health outcomes. While informal self-employed female workers face higher health risks compared to other types of workers, we are aware that a 50% probability of experiencing poor health does not accurately reflect the complexities of the real world. We argue that this probability successfully strikes a balance between realism and the constraints of a controlled laboratory experiment with limited observation rounds.

In this context, each participant had the opportunity to mitigate this risk by enrolling in a health insurance plan. In terms of the model, health insurance reduces the effective loss in the unhealthy state L_H: if $q_H \in [0, 1]$ denotes the coverage rate, uninsured participants lose L_H of income, while insured participants only lose $(1 - q_H(s_H)) \cdot L_H$. Thus, insurance shifts the expected utility by increasing consumption in the bad state while reducing it in the good state through contributions s_H. Depending on the chosen plan, participants would either incur a smaller loss or maintain the full reward (as shown in Table 1).

Table 1: Health Insurance Plan Options

Plan	**Contribution (s_H)**	**Coverage (q_H)**
Basic	Bs5 (USD 0.72)	40%
Medium low	Bs10 (USD 1.44)	60%
Medium high	Bs15 (USD 2.16)	80%
Full insurance	Bs20 (USD 2.88)	100%

In each round, when participants selected the level of difficulty for the task and completed the exercises, the facilitators informed them of the amount of the monetary reward they would receive given their performance in the task. Then, we asked participants if they wanted to contribute to the pension system and a health insurance plan (see Table 2). Therefore, the decision for the pension system and health insurance was made without prior knowledge of whether they would experience a health shock. The contribution decision was elicited only after this information was revealed, by design: this structure mirrors the real-world condition of self-employed workers, whose contribution choices are typically made after income is realized and depend on whether earnings are high or low in a given period. This setup allows us to capture the realistic margin that low realizations reduce the likelihood of contributing, while higher realizations increase it.

If they decided to contribute, their final reward in the healthy state would be their initial reward (Y) minus

Table 2: Decision Space

Work effort	Contributions to the pension system	Health insurance
Easy	Contributes	Without plan
		Basic plan
Medium		Medium low plan
	Does not contribute	Medium high plan
Difficult		Full insurance

Note: Each participant made three choices: (1) work effort by selecting a difficulty level, (2) amount of pension contribution, and (3) health insurance enrollment, choosing from four plans or opting out.

the amount contributed to the pension system (s_P) and the health insurance (s_H) contribution due to the plan selected. In the unhealthy state, their final reward would be the coverage level of the health insurance (q_i) if they have opted to contribute minus the contribution they provided; if they did not contribute, they would face a loss (L_H) of 80% of their initial reward (see Table 3).

Table 3: Final reward due to state of nature and contribution to health insurance

State of Nature	**Contribution to health insurance**	**Final reward**
Healthy	Yes	$Y \cdot (1 - s_P - s_H)$
	No	$Y \cdot (1 - s_P)$
Unhealthy	Yes	$Y \cdot (1 - s_P - s_H) - L_H(1 - q_H)$
	No	$Y \cdot (1 - s_P) - L_H$

If participants decided to contribute to either the pension system or health insurance, they were required to stand up from their seats and deposit a form in a savings container outside the room[9]. From our pre-experiment focus groups, participants consistently reported that the main barriers to voluntary enrollment were non-monetary. These procedures were perceived as tedious, time-consuming, and administratively complex. In the theoretical framework, we denote these non-monetary burdens by $\kappa \geq 0$, which represents the disutility of time, physical and cognitive fatigue due to the procedure to enroll and contribute to social security. This includes the time, cognitive, and psychological costs of contributing, beyond the monetary contribution itself.

This design choice aimed to approximate the procedural frictions that many Bolivians face when contributing to social security or health insurance, where payments typically involve waiting, filling out forms and physically making deposits. By incorporating this element, we aimed to capture not only the monetary cost of contributing but also the non-monetary cost of time, cognitive and physical fatigue. Formally, when contributions s_H or s_P are made, the worker's utility is reduced not only by the minor consumption due to the monetary amount given to contribution, but also by $\kappa(s_H, s_P)$ so that higher non-monetary costs reduce the net benefit of participation.

While we recognize that requiring participants to stand up introduced a degree of observability, what was visible to the other participants was limited to the act itself, not the amount or type of contribution, which

[9]The saving container had images to guide participants on placing their health insurance and pension contributions. Images of the containers are provided here. When designing the experiment, we failed to consider the potential negative impact that a hunched man/woman with a cane could have on pension contributions.

remained private. The act of standing up was thus used as a proxy for this non-monetary cost. To further assess whether observability played a role, in the Results section (Table 7) we present a comparison between the decision to contribute in the control, where the act of standing up remained visible, with the non-monetary cost reduction treatment, where contributions were no longer observable. This comparison allows us to isolate the potential effect of visibility on contribution decisions.

We also acknowledge that standing up may not be inherently costly for every participant. However, when the action had to be repeated across several rounds, it became increasingly tedious. Moreover, informal conversations with participants after the experiment revealed that most women perceived the process as tiring and inconvenient. When repeated multiple times, this perceived tedium increased, suggesting that the design successfully captured an important behavioral element of real-world contributions —-the trade-off between convenience and the willingness to make regular payments.

At the end of the game, they received their reward, and four months[10] after the experiment implementation, they collected their social security contribution plus a 50% interest rate earnings. Participants were informed about the collection period and the interest rate before making their first round decision. For the interest rate we drew inspiration from Holmes (2011), who employed a discounted value after 10 years resulting in an estimated interest rate of around 41%. Based on this precedent and motivated by our aim to make the payment structure more appealing, we chose a 50% interest rate for our experiment. Furthermore, our pilot test indicated that the 50% interest rate was not only simple to explain but also easily understood by the participants.

5.3 Treatment design

Treatments were assigned on a session-by-session basis, with a total of 106 sessions. On average, each session had 4 participants who received identical explanations and interventions. This design minimized the Hawthorne effect[11], as participants were unaware of the differing treatments. Each treatment involved an intervention aimed at motivating workers to prioritize enhancing their employment quality. Additionally, we addressed the time-of-day effect by randomizing treatments across morning and afternoon sessions.

Treatments were conducted using a 2*3 factorial design, as outlined in Table 4. The first dimension involved providing participants with one of two types of informative messages: one highlighting the benefits of contributing to a long-term pension system and another emphasizing the advantages of obtaining health insurance. This directly relates to **Proposition 1**, which predicts that information shocks increase the perceived salience and reliability of benefits (Ω_P and Ω_H), thereby raising optimal contributions s_P^* and s_H^*.

The second dimension focused on interventions aimed at reducing the non monetary costs associated with enrolling in a retirement or health insurance plan. This corresponds to **Proposition 2**, where lowering non-monetary costs (κ) increases the net benefit of participation, thus incentivizing higher contribution levels. Following the approach suggested by Thaler and Sunstein (2008), we employed an intervention similar to an active decision nudge[12], but we made modifications specific to our experiment's characteristics. The factorial design allowed us

[10] The reward was transferred via cellphone credit, with a long period to reflect the real pension enrollment decisions.We followed a similar methodology of Fatas et al. (2007) that paid the participants 7 weeks after the experiment; and Bachmann et al. (2023) who paid in different schemes between 1 and 3 months after the experiment.

[11] Effect when subjects change their behavior because they know they are being studied.

[12] It presents both options by removing the default option.

to independently evaluate the effects of each treatment dimension while also examining potential interactions between the informative messages and non-monetary cost-reduction interventions. In line with **Proposition 3**, we test whether combining information with cost-reduction amplifies or dilutes the treatment effect on contributions.

Table 4: Factorial Treatment Design

		Control	**Non Monetary Cost Reduction**
Default option		Baseline (19 sessions, 71 individuals)	T1 (16 sessions, 68 individuals)
Informative Message	**Pension system**	T2 (17 sessions, 69 individuals)	T3 (21 sessions, 73 individuals)
	Health Insurance	T4 (17 sessions, 71 individuals)	T5 (17 sessions,72 individuals)

Both contribution options, pension and health insurance, were presented simultaneously in each round, even though separate informational messages were used for each. This design choice was deliberate to approximate the real-world scenario in which self-employed individuals in Bolivia face both enrollment options at the same time and must allocate resources between them. Presenting both options jointly also allows the study to capture potential trade-offs and substitution effects between the two contributions, as well as to examine whether nudges directed at one domain influence decisions in the other.

If participants were assigned to Treatment 1, they received an intervention that reduced the non-monetary cost in contributing by placing the saving container closer to the participants, eliminating the need to stand up from their seats. Although the intervention did not involve monetary expenses, it aimed to minimize time, cognitive and physical fatigue. While the time allocated for solving the exercises remained unaffected, the overall duration of the experiment could be reduced.

If the session was assigned to Treatment 2, participants received informative messages that aimed to incentivize their contribution to the pension system. Likewise, participants assigned to Treatment 4 received informative messages encouraging them to contribute to health insurance. Participants assigned to Treatments 3 or 5 received a combination of the Informative Messages and the Non-Monetary Cost reduction intervention. Participants received the informative messages as a printed info-graphic and a recorded audio.[13]

5.4 Experiment Procedure

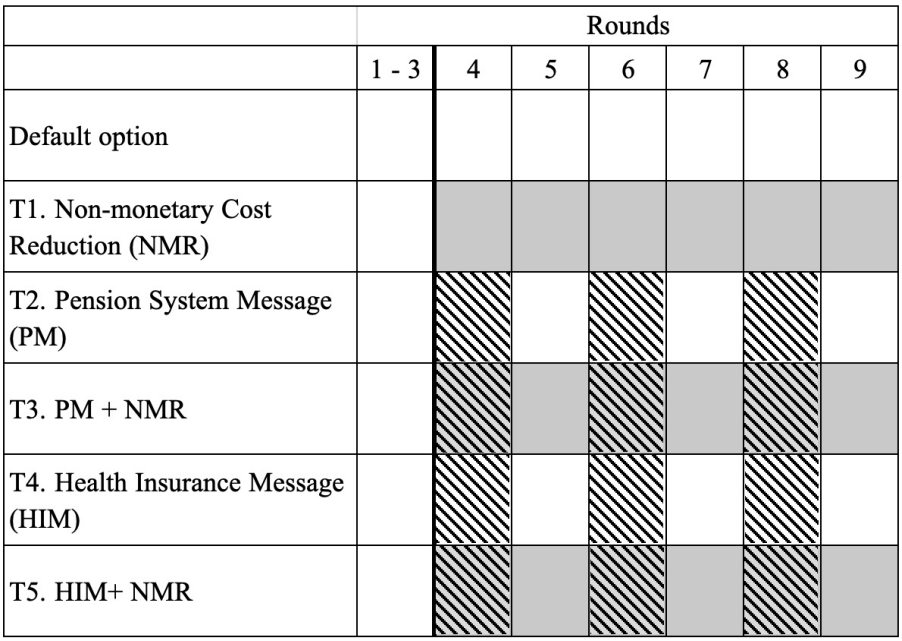
The experiment consisted of 9 rounds as shown in Figure 4. The initial three rounds served as a baseline. We followed a sequential process to improve the quality of the results. Because the experiment used a within-subject design, we could control for individual-level heterogeneity, such as differences in risk aversion, patience, or baseline effort preferences. The first stage of the experiment allowed us to capture the work scheme pattern of the subjects and know the initial preferences of the female self-employed workers. Thus, changes in decisions after treatment are not associated with differences in these preferences. By comparing each participant's post-treatment decisions to their own baseline behavior, we reduced noise from individual differences and strengthened the internal validity of the experiment. In addition, given sample size and budget constraints, splitting participants exclusively across

[13]During the focus groups, participants expressed a greater inclination to pay attention to audio messages compared to written ones, and they believed that the inclusion of images alongside concise messages could generate more interest for them. The findings from the focus groups can be found here.

parallel treatment groups would have significantly reduced statistical power and increased the risk of inconclusive results. By employing a within-subject component, we ensured sufficient observations to detect treatment effects reliably while evaluating multiple interventions.

In round 4, participants were randomly assigned to receive an informative message (represented by diagonal lines in Figure 4) or to the non-monetary cost reduction intervention (represented by a gray shade in Figure 4). It is worth noting that the non-monetary cost reduction remained in place for the subsequent rounds, with the savings containers positioned near the participants until the end of the experiment. On the other hand, the informative messages were provided during three specific rounds (round 4,6 and 8). For treatments 3 and 5, which involved a combination of both treatments, the container was first moved closer, followed by the delivery of the informative message.

Figure 4: Treatments by Rounds



*N*ote: The experiment comprised of 9 rounds. Starting from round 4, participants were given either one or two treatments. The light grey square symbolizes the Non Monetary Cost Reduction intervention, while the striped square represents the Informative Message.

If participants were assigned to receive the informative messages (Treatment 2, 3, 4 or 5) a facilitator handed each participant a leaflet with the printed message and simultaneously asked them to wear headphones to listen to the corresponding audio message. The audio contained the same information as the leaflet.

5.5 Informative messages

To construct messages, we use elements of behavioral economics to guarantee a greater effect. We first carried out a literature review to find out the behavioral determinants that limit women to improve their job quality. Then, we implemented a focus group of self-employed women and individual interviews with unemployed women based on the variables studied in the literature review. In addition to the behavioral determinants of women's decisions, we investigated their knowledge of financial systems and use of technology, variables that allowed us to know the optimal way to implement the interventions. From this process, we obtained a list of attributes that affect

women's decisions when opting for self-employment and factors that do not allow them to acquire employment benefits. With the information collected, we were able to design more effective interventions using elements of behavioral economics[14] focused on loss aversion, emotions, confirmation bias, and availability bias.

The message treatments were deliberately structured across multiple rounds rather than delivered as a single comprehensive message. Our focus groups indicated that long, one-time messages were often ignored or quickly forgotten. Participants emphasized that short, repeated reminders with different emphases were more salient, easier to process, and more likely to influence decisions. This approach aligns with behavioral economics insights regarding rational inattention, present bias, and the inertia of the status quo, whereby individuals may overlook or discount information unless it is delivered repeatedly and in a behaviorally informed way. By using multiple rounds, we aimed to evaluate the effect of an information campaign as a whole, rather than the isolated effect of each message.

The structure for all treatments was followed consistently. In rounds 4, participants received a message addressing rational inattention bias, the tendency to overlook all available options. In this case, self-employed women may not have considered the possibility of enrolling in these benefits. To counter this, we used salience to highlight the opt-in option. By presenting information about the benefits of enrolling and contributing, we aimed to make the enrollment decision more automatic and implicit. This message remained in subsequent rounds.

In rounds 6 and 7, a second message, known as 'status quo information', introduced contextualized data specific to the Bolivian situation regarding the pension system or health insurance enrollment. Since enrollment is not mandatory for self-employed women, the default choice for them is to not be enrolled in any of these benefits. This tool aimed to raise awareness about the non-optimality of the default choice, prompting individuals to reconsider whether they truly prefer not being enrolled or are simply following the status quo.

During rounds 8 and 9, a new message highlighting the negative consequences of not contributing was introduced. By making the future more salient, this tool was useful in combating present bias, the tendency to prioritize immediate gains over future benefits (Thaler & Sunstein, 2008). Present bias discourages contributions since they require sacrificing current consumption for future benefits, such as retirement payouts or health coverage. The message also leveraged loss aversion, when individuals are more averse to anticipated losses than they are motivated by similar gains. Finally, it addressed mental accounting bias, which is when individuals fail to recognize the fungibility of money. By emphasizing how today's money secures future well-being, we encouraged long-term financial security.

5.6 Post-Experiment Questionnaire

We carried out two questionnaires, one before and the other after the experiment was implemented. We asked the respondents to complete both questionnaires to widen our understanding of women's characteristics, preferences, and beliefs[15]. The questionnaire was composed of the six broad sections: Socioeconomic characteristics, Time preferences and risk aversion[16], Employment, Quality of employment, Family income and expenses, and Preferences and beliefs about formalization and its benefits.

[14] The final interventions used in the experiment can be found here.
[15] The questionnaires forms can be seen here.
[16] Measured by monetary incentivized experimental tasks. Explanation of the instruments we used can be found here.

6 Data analysis

We have two main variables of interest, namely the proportion of contribution to a pension system (s_P) and health insurance (s_H) from their total reward. In both cases, we used the monetary reward pre-health shock such that our variables of interest are computed as:

$$s_p = \frac{\text{Contribution to pension system}}{\text{Monetary Reward}} \tag{7}$$

$$s_H = \frac{\text{Contribution to health insurance}}{\text{Monetary Reward}} \tag{8}$$

Since we use data coming from a careful randomized assignment to treatment, we model the outcomes of interest by the following equation:

$$s_{\cdot ir} = \alpha + \beta Post_r + \sum_{j=1}^{5} \gamma^j T_i^j + \sum_{j=1}^{5} \delta^j T_i^j \times Post_r + X_i\lambda + \varepsilon_{ir} \tag{9}$$

where α is a constant; $s_{\cdot ir}$ is either the value of s_P or that of s_H for individual i in round r (r=1...9). $Post_r$ is equal to 1 after round 4 and 0 for the previous rounds. T_i^j is equal to 1 if subject i received treatment j (j=1...5), which are indicated in Figure 4. X_i is the vector of individually varying control variables[17], and ε_{ir} is the error term. If there are average differences between the control and treatment groups, they are captured by the parameter γ, and any time-trend common to control and treatment groups is captured by parameter β. Since membership to each treatment group is exclusive (i.e. each person has been assigned to one group only), parameter δ^j captures the average effect of treatment j (see Figure 4). Empirically, we allowed errors in our model to be clustered at the individual level in order to check for robustness of our results to unobserved individual effects.

Furthermore, we model outcome $s_{\cdot ir}$ by the following equation to identify heterogeneities in treatment effects:

$$\begin{aligned} s_{\cdot ir} = \alpha + \beta_1 Post_r + \beta_2 Z_i + \sum_{j=1}^{5} \beta_3^j T_i^j + \gamma_1 Z_i \times Post_r + \sum_{j=1}^{5} \gamma_2^j T_i^j \times Z_i + \sum_{j=1}^{5} \gamma_3^j T_i^j \times Post_r \\ + \sum_{j=1}^{5} \delta^j T_i^j \times Post_r \times Z_i + X_i\lambda + u_{ir} \end{aligned} \tag{10}$$

where all the variables are defined as above, and Z_i is a binary indicator of membership to one of the following groups of interest: i)workers with high or low tolerance to risk, ii) patient or impatient individuals, and iii) high or low effort workers.

To determine risk tolerance, we adapted the task used by Cardenas and Carpenter (2013), offering participants six lottery options with varying levels of risk and potential payoff. Additionally, we employed a task introduced by Andreoni et al. (2015), which measured time preferences to classified self-employed workers as patient or impatient. Participants selected a budget from five options, with payments divided between present and future. Across 16

[17] Individually varying control variables in vector X_i include: age, marital status, number of under-18-children, highest schooling level, per-capita household income, percentage of savings, commerce activity, years of work experience, job quality index, preference for business formalization, preference for health insurance, preference for pension system enrollment, risk aversion index and patience index.

choices, we varied discount rates and waiting times. A patient individual chose the most delayed payment option at least once, while an impatient individual consistently chose the nearest payment option.[18]

We categorized participants into low-effort workers and high-effort workers based on their initial task difficulty selection before any intervention was applied (round 1-4). Low-effort workers chose the easiest task level, while high-effort workers opted for middle or the most challenging level.

7 Results

This section describes the sample of participants in more detail, showing that randomization was successful as the control and treatment groups are balanced. Then, we present the econometric specifications and the experimental results for all the variables of interest.

7.1 Data Description

Our sample consists of 424 self-employed women with an average age of 35. Almost all of them completed secondary education (97%), but only 43% have pursued university studies. Around 60% of the participants are single. More than 70% of participants are self-employed out of necessity, as they explicitly stated a preference to work as dependents. The average per-capita household monthly income is Bs 1,819 (USD 261.35), with a significant amount of variation. More than 82% of participants have savings – they save an average of 41.9% of their household monthly income. Nearly 41% of participants work in the sales and retail sector, with most of them engaged in the sale of clothing (21.0%), cosmetics (12.8%), and prepared foods (8.3%). However, their activities are highly diverse, including the sale of technology, groceries, handicrafts, and other goods. Despite being a young population, they have an average of more than 12 years of work experience. However, their job instability may explain their high preference for business formalization, health insurance, and pension enrollment. In terms of time and risk preferences, at least 62% of the participants selected the patience option at least once, indicating that most do not have a strict preference for the present. Additionally, 28.3% of participants are risk-averse, while the remaining participants are more tolerant to risk. However, most of those who are risk-tolerant tend to prefer options with limited variation[19].

Almost all sociodemographic characteristics are statistically similar between the control group and each of the treatment groups, the few exceptions are commercial activity, health insurance enrollment preference, and number of participants per session.

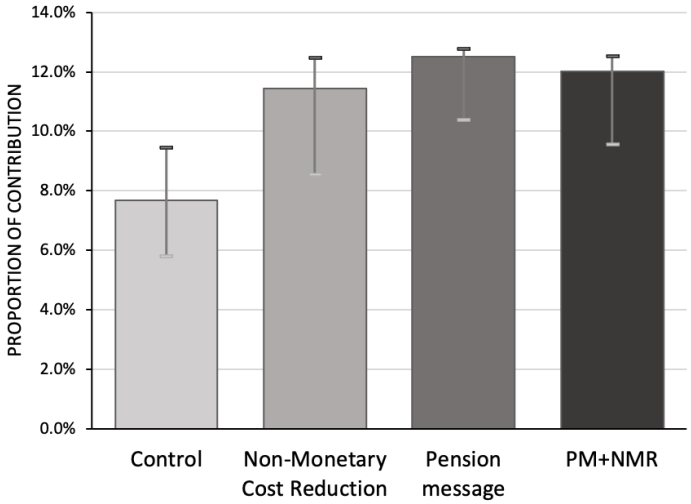
7.2 Treatment effects

Figure 5 illustrates the proportion of contribution to the pension system (s_P^*) across all treatment groups. Notably, women in all groups, including the control group, made non-zero contributions to this system. However, all treatment groups showed higher average contributions compared to the control group. The most salient finding is that the Pension (Informative) Message treatment produced a level of contribution of 12.5%, significantly different from the control. This underscores that informational barriers are a key determinant of pension participation.

[18] For further details on the experimental tasks, please refer here.
[19] See Online Appendix 2 for a detailed overview of the sociodemographic characteristics.

By contrast, the Non-Monetary Cost Reduction treatment on its own did not yield significant changes compared to the control group. This result reinforces the fact that lowering procedural frictions is not enough to induce voluntary contributions unless participants are also informed about the system's value. Moreover, combining both treatments produced an effect that is statistically indistinguishable from the Pension Message alone, indicating that the informational component drives the impact, while Non-Monetary Cost Reduction treatment does not add significantly to it.

Figure 5: Proportion of Contribution to the Pension System by Treatment Group



Note: Whiskers show 90% confidence intervals of the estimates. The bars report the average contribution rate across all rounds for all participants, including those who contribute zero. These values are not directly comparable to the treatment-effect estimates in Table 5, which measure the change between pre-treatment (Rounds 1–3) and post-treatment (Rounds 4–9) behavior.

Table 5 presents the treatment effects on the percentage of contribution to the pension system, s_P^*. As mentioned earlier, only treatments that include the Pension Message produce robust and significant changes, confirming its prominent role in shaping behavior. For participants receiving both treatments (pension message and non-monetary cost reduction), the observed effect can be fully attributed to the message. This remains robust after controlling for sociodemographic characteristics, session fixed effects, and round fixed effects, as well as accounting for censoring in contributions[20]. Also, higher contributions are positively associated with age[21] and with stronger preference for pension enrollment. Risk aversion shows a positive association with pension contributions when session fixed effects are included, while the patience index exhibits a positive association only when session fixed effects are excluded. The rest of the individual control variables have no significant impact on pension contribution.

Figure 6 shows the proportion of contribution to health insurance, s_H^*. Women in the control group exhibit contributions up to 14.9% of their monetary reward. This finding is noteworthy as more than 80% of our sample in the experiment (across all treatment and control groups) chose to contribute to health insurance when the option was explicitly presented to them. This pattern underscores a central insight of our study: self-employed

[20] When controlling for censoring, the non-monetary cost reduction treatment effect increases in magnitude and becomes significant at a 10% level. This means that this treatment can have some positive effect to increase contributions among those that decide to contribute in the first place.

[21] The relationship between age and higher pension system contributions is not robust to the inclusion of sessions fixed effects.

Table 5: Treatment Effect on Pension System Contribution Rate by Treatment Group

	(1)	(2)	(3)	(4)	(5)	(Tobit)
Non-Monetary Cost Reduction (NMR)	0.017	0.017	0.017	0.017	0.017	0.048*
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.026)
Pension Message (PM)	0.059***	0.059***	0.059***	0.059***	0.059***	0.123***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.026)
PM + NMR	0.059***	0.061***	0.061***	0.061***	0.061***	0.121***
	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.026)
Risk Aversion Index		0.002	0.002	0.007*	0.007*	0.007***
		(0.004)	(0.004)	(0.004)	(0.004)	(0.003)
Patience Index		0.024**	0.024**	0.005	0.005	0.012
		(0.010)	(0.010)	(0.010)	(0.010)	(0.009)
Formalization Preference		-0.004	-0.004	0.002	0.002	0.004
		(0.007)	(0.007)	(0.009)	(0.009)	(0.005)
Pension Preference		0.019***	0.019***	0.017***	0.017***	0.036***
		(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Observations	3816	3798	3798	3798	3798	3798
Individuals	424	422	422	422	422	422
Controls	No	Yes	Yes	Yes	Yes	Yes
Rounds FE	No	No	Yes	No	Yes	Yes
Session FE	No	No	No	Yes	Yes	Yes

Note: Estimation of the difference in pension contributions (earnings proportion) between pretreatment rounds (1-3) and treatment rounds (4-9). Control variables included age, marital status, number of under-18-children, highest schooling level, per-capita household income, percentage of savings, commerce activity, years of work experience, job quality index, preference for business formalization, preference for health insurance, preference for pension system enrollment, risk aversion index and patience index.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

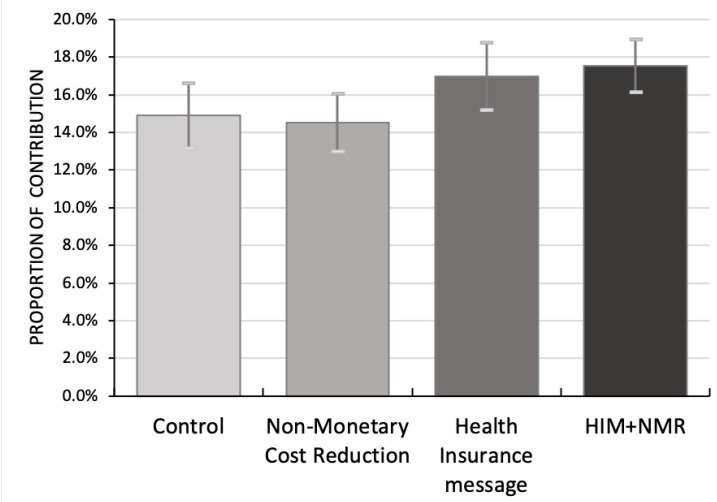
women are willing to contribute once the mechanism is made visible. We thus argue that offering the option to contribute could have a significant impact, as evidenced by the fact that, during the pre-experiment focus groups, 95% of non-contributors reported that they were unaware that self-employed individuals can contribute to health insurance. The average contributions of women assigned to any one of the treatments do not differ significantly from the control group, except for those receiving the Health Insurance Message. This treatment has an Average Treatment Effect (ATE) of 2.8% which rises to 3.5% after controlling for censoring in these contributions (Table 6). The patience index is not related to health insurance contribution, but risk aversion is negatively associated when session fixed effects are excluded. Also, preferences for formalization and health insurance are both positively associated with higher contributions to health insurance.[22] As for the rest of the controls, there is no significant relationship with the contribution share to health insurance.[23]

Let us now discuss the lack of effect of the Non-Monetary Cost Reduction treatment on both pension and health insurance contributions. One plausible explanation is that while reducing procedural frictions lowers the disutility caused by additional time, physical and cognitive fatigue, it also modifies the participant's behavior due to an observability effect in rounds 1-3. Recall that in these initial rounds, women's decisions to contribute were visible to other participants in the same session as they had to stand up if they wanted to have health insurance or receive pensions benefits – the amount of the contribution, however, remained known only by the contributor. However, in the later rounds (4-9), the observability effect is removed as women **in the Non-Monetary Cost Reduction treated groups** no longer needed to stand up to make a non-zero contribution – women in the

[22] In specifications that include session FE, job quality index shows a positive significant relationship with health insurance contribution.

[23] Replications of all the results reported in Table 5 and 6 without controls are provided in Appendix B. The main coefficients and their significance remain unchanged.

Figure 6: Proportion of Contribution to Health Insurance by Treatment Group



*N*ote: Whiskers show 90% confidence intervals of the estimates. The bars report the average contribution rate across all rounds for all participants, including those who contribute zero. These values are not directly comparable to the treatment-effect estimates in Table 5, which measure the change between pre-treatment (Rounds 1–3) and post-treatment (Rounds 4–9) behavior.

control group were required to stand up if they wanted to make contributions throughout the entire session. We exploit this variation to examine the existence of an observability effect.

In the later rounds (4-9), the Non-Monetary Cost Reduction treatment triggers two conflicting mechanisms: on the one hand, reduced procedural costs should raise the likelihood of contributing, but on the other hand, absence of the observability effect may reduce it insofar as contributions were triggered by social desirability in the previous rounds (1-3). Estimating two probit versions of our equation 9, respectively, to explain the probability of contributing to pension or health insurance by treatment group, allows us to determine if these probabilities change in the presence of the observability effect[24]. If the observability effect does not dominate the treatment effect of non-monetary cost reductions on contribution decisions, we would see a positive and significant effect of this treatment on the likelihood to contribute after being exposed to the Non Monetary-Cost Reduction treatment in rounds 4-9 (where there is no observability effect). We corroborate that this is precisely what happens in Table 7. Our estimates show that the effect of non-monetary cost reductions on the likelihood of making non-zero contributions is indeed positive and significant. This suggests that reducing physical fatigue and time by placing the saving container closer to participants during rounds 4-9 increased the probability of initiating a non-zero contribution decision, with no evidence of the observability effect being at play.

Besides demonstrating the absence of observability effects, the results in Table 7 contain useful information on their own about the treatment effects on the likelihood to contribute to pensions and health insurance. Receiving the pension message significantly increases the probability of making a non-zero pension contribution, while reducing non-monetary costs raises the likelihood of making a positive contribution for both pension and health insurance. These effects are important in magnitude and robust to round fixed effects and a wide array of control variables. For instance, after the non-monetary cost reduction, the proportion of women willing to contribute to

[24]The coefficient δ in equation 9 associated with the non-monetary reduction cost treatment captures both the effect of being exposed to this treatment with respect to the control group, and the differential effect of rounds 4-9 (where there is no observability effect) and rounds 1-3 (where there is observability effect). Also, note that these estimates correspond to the first stage of a Heckman sample selection model.

Table 6: Treatment Effect on Health Insurance Rate of Contribution by Treatment Group

	(1)	(2)	(3)	(4)	(5)	(Tobit)
Non-Monetary Cost Reduction (NMR)	0.003	0.003	0.003	0.003	0.003	0.011
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)
Health Insurance Message (HIM)	0.028*	0.028*	0.028*	0.028*	0.028*	0.035**
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.017)
HIM + NMR	0.017	0.016	0.016	0.016	0.016	0.025
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)
Risk Aversion Index		-0.006*	-0.006*	-0.004	-0.004	-0.006***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Patience Index		0.007	0.007	0.004	0.004	0.004
		(0.008)	(0.008)	(0.007)	(0.007)	(0.006)
Formalization Preference		0.006	0.006	0.009**	0.009**	0.011***
		(0.005)	(0.005)	(0.004)	(0.004)	(0.003)
Health Insurance Preference		0.012*	0.012*	0.013**	0.013**	0.017***
		(0.007)	(0.007)	(0.007)	(0.007)	(0.004)
Observations	3816	3798	3798	3798	3798	3798
Individuals	424	422	422	422	422	422
Controls	No	Yes	Yes	Yes	Yes	Yes
Rounds FE	No	No	Yes	No	Yes	Yes
Session FE	No	No	No	Yes	Yes	Yes

Note: Estimation of the difference in health insurance contribution (earning proportion) between pretreatment rounds (1-3) and treatment rounds (4-9). Control variables included age, marital status, number of under-18-children, highest schooling level, per-capita household income, percentage of savings, commerce activity, years of work experience, job quality index, preference for business formalization, preference for health insurance, preference for pension system enrollment, risk aversion index and patience index.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

the pension system increased by 11.5 percentage points (from 48.7% in the control group); after being exposed to the Pension Message (PM), this proportion increased by 16.5 percentage points. We thus compellingly show that lower non-monetary costs of enrollment and relevant information messages can induce people to voluntarily enroll in the social security system in the first place.

7.3 Heterogeneous effects

We now examine the interaction of treatments with specific socio-demographic characteristics to uncover heterogeneities in treatment effects. Figure 7 illustrates the heterogeneous effects of interventions on contributions to the pension system based on participants' preferences for receiving future pension benefits, which we collected in the post-experiment survey.

Women who like the idea of receiving pension benefits show the most significant treatment effects when exposed to either the Non-Monetary Cost Reduction treatment or the Pension Message. However, when these interventions are combined, there is no clear pattern related with the women's preference about receiving pension in the future. However, women who say are upset about the idea of giving up present income to receive pension in the future and were exposed to the Non-Monetary Cost Reduction treatment did not show a significant treatment effect. In the other two treatment groups, we can argue that even for individuals who dislike contributing to the pension system, the intervention creates a desire to contribute.

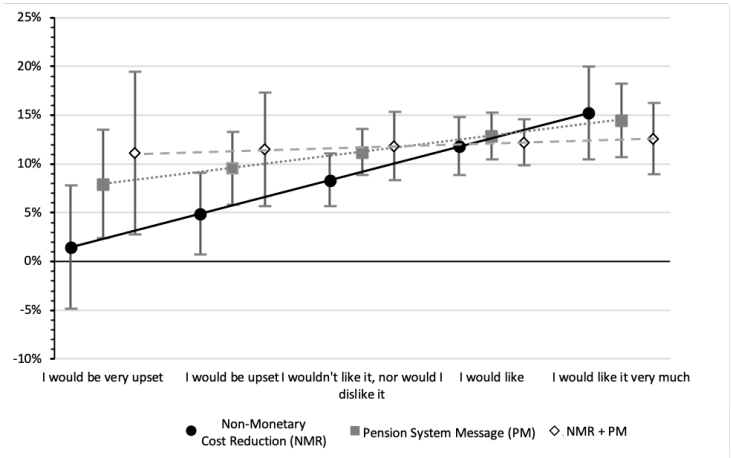
We now assess if the treatment effects on the decision to contribute to the pension system may be linked to the level of impatience, defined as the preference for immediate rewards over long-term benefits. To explore this further, we classified participants into two categories according to their patience levels. Individuals were

Table 7: Treatment Effect on Probability to Contribute by Treatment Group

	(1) Pension Contribution	(2) Health Insurance Contribution
Non-Monetary Cost Reduction (NMR)	0.115***	-0.005
	(0.028)	(0.022)
Pension Message (PM)	0.165***	
	(0.027)	
PM + NMR	0.127***	
	(0.027)	
Health Insurance Message (HIM)		-0.019
		(0.022)
HIM + NMR		0.053***
		(0.020)
Risk Aversion	-0.008	-0.017***
	(0.005)	(0.004)
Patience Index	0.063**	0.000
	(0.016)	(0.012)
Formalization Preference	0.012	0.017**
	(0.010)	(0.040)
Pension Preference	0.063***	
	(0.009)	
Health Insurance Preference		0.028***
		(0.009)
Observations	3,798	3,798
Individuals	422	422
Controls	Yes	Yes
Round FE	Yes	Yes
Session FE	No	No

Note: Treatment effect on contribution probability by treatment group, obtained by the first stage of the Heckman estimation. The dependent variable is 1 if the participant chose to designate a positive amount toward health insurance or the pension system, and 0 if they did not. Controls included age, marital status, number of under-18-children, highest schooling level, per-capita household income, percentage of savings, commerce activity, years of work experience, job quality index, preference for business formalization, preference for health insurance, preference for pension system enrollment, risk aversion index and patience index. Note that session effects cannot be included in the estimation of these effects because the treatment variable does not have any within-session variation (each session has only one treatment. The probability to contribute in the control group is 48.7% for the pension and 81.6% for health insurance.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

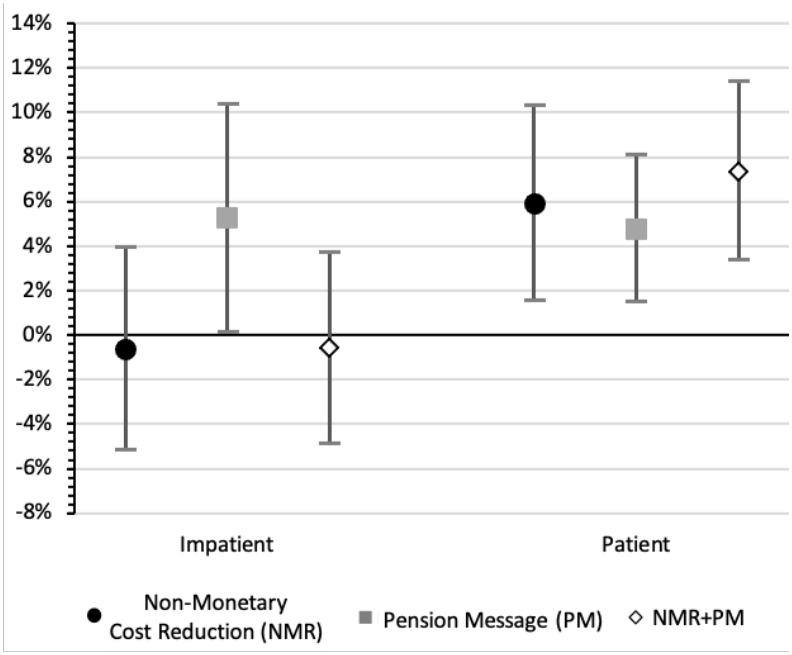
Figure 7: Contribution to the pension system by preference on getting the benefits of a pension system



*N*ote: We asked participants their preference on being affiliated to the pension system (PS), and provided 5 options: (i) I would be very upset to be affiliated to the PS, (ii) I would be upset to be affiliated to the pension system, (iii) I wouldn't like it nor would I dislike it, (iv) I would like to be affiliated to the PS, (v) I would like it very much to be affiliated to the PS. Whiskers show 90% confidence intervals of the estimates.

assigned to the patient category if they chose the most forward-looking option at least once across all rounds of the time-preference task, and to the impatient category if they never did[25] We found that all the treatments had a significant impact on patient individuals, but only the informative messages were able to enhance the contributions made by impatient ones (see Figure 8).

Figure 8: Percentage change in participants' contribution to the pension system by patience level



Note: Dots represent the average difference in the percentage change of the contribution after treatment between the other treatments and control group. Whiskers show 90% confidence intervals of the estimates.

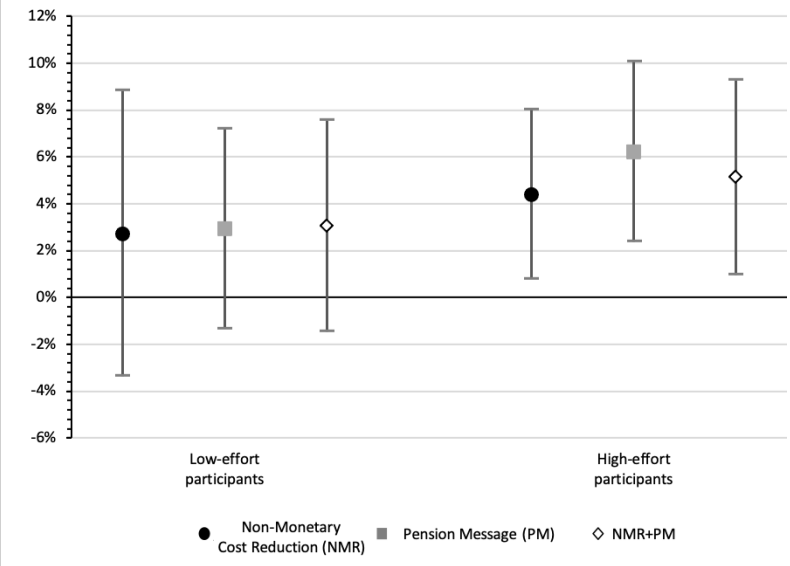
We now assess whether treatment effects vary depending on the type of workers (see Figure 9).We analyze the effects on two distinct types of self-employed women: those who put in low effort and those who put in high effort. We identify the low-effort workers as those who chose the easiest level of the task prior to being exposed to any treatment, while the high-effort workers were those who selected the middle or more challenging levels. Across the sample, 46.2% of women fell into the high-effort category, while 53.7% were classified as low-effort workers. We found that all the treatments had a significant effect only for the high-effort workers.

Let us now turn to heterogeneous treatment effects on health insurance contributions. Figure 10 illustrates the contribution levels to health insurance across treatments, by preference level for health insurance benefits. The combined Non-Monetary Cost Reduction and Health Insurance Message treatments had similar effects compared with the Non-Monetary Cost Reduction tretament alone. For individuals who indicated a high preference for health insurance benefits, both interventions had stronger effects than for those who did not. Individuals with a high preference for these benefits showed similar effects across treatments – around 14-20%. Notably, the Health Insurance Message treatment alone had a stronger effect on participants who were initially reluctant to contribute. This suggests that for these individuals, the message possibly reinforces the perceived benefits associated with these contributions, ultimately driving significant behavioral changes.

Turning now to the decision of enrolling in health insurance, we find considerable impact heterogeneity by

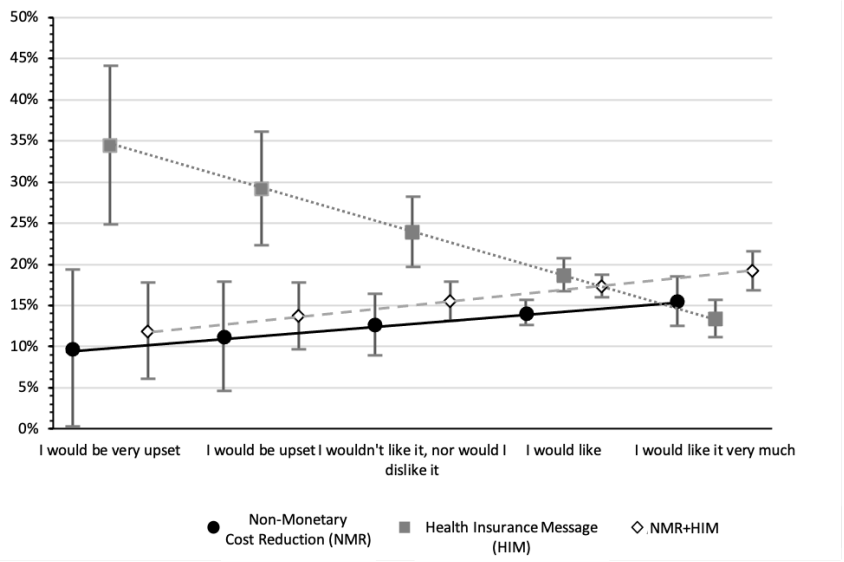
[25]From the total sample, 63.4% of participants were classified as patient and 36.6% as impatient. Explanation of the experimental-task instruments we used for measuring time preferences can be found here.

Figure 9: Percentage change in participants' contribution to the pension system by type of worker



Note: Dots represent the average difference in the percentage change of the contribution after treatment between the other treatments and control group. Whiskers show 90% confidence intervals of the estimates.

Figure 10: Contribution to the health insurance by preference on getting the benefits of a health insurance

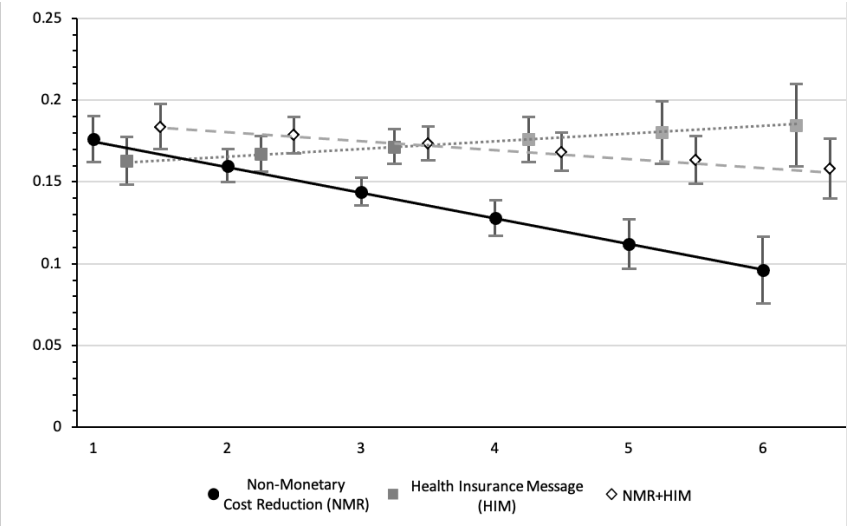


Note: We asked participants about their preference for contributing to a health insurance (HI), using 5 options: (i) very upset, (ii) upset, (iii) neutral, (iv) like, (v) like it very much. Dots represent the average contribution in the treated rounds. Whiskers show 90% confidence intervals of the estimates

level of risk aversion, i.e. individuals' unwillingness to accept drastic income fluctuations. We find that when women are exposed to the Non-Monetary Cost Reduction treatment – either alone or in combination with the health insurance message – the treatment effect diminishes as women display stronger risk-loving preferences. This pattern arises because individuals with greater risk aversion are more inclined to insure themselves against the possibility of negative health shocks, which could otherwise reduce their monetary payoffs. By contrast, under the Health Insurance Message treatment, risk-loving women contribute to health insurance at levels comparable to those of risk-averse women (see Figure 11). This suggests that message is effective even among risk-loving women, who prioritize the possibility of higher payoffs over the risk of receiving lower one in a negative state of

nature.

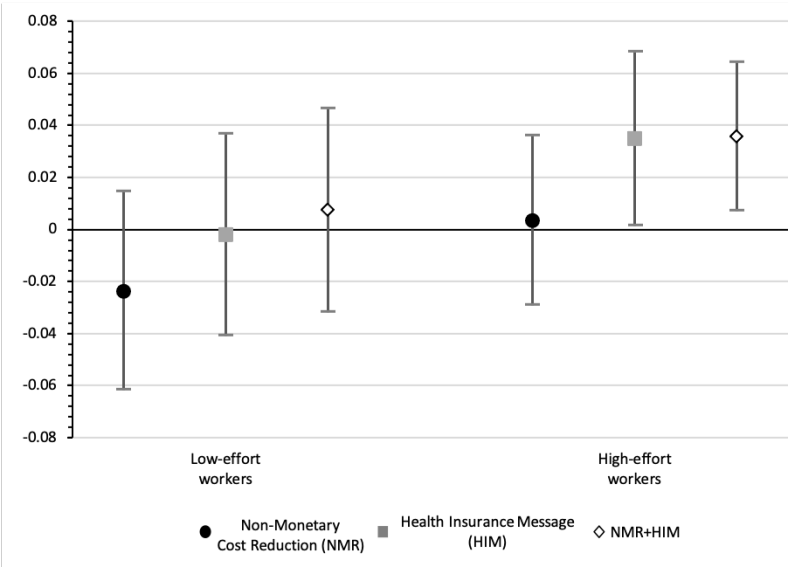
Figure 11: Contribution to the health insurance by risk level



*N*ote: Dots represent the average contribution in the treated rounds. In the horizontal axis 1 represents risk averse individuals while 6 represents risk lovers. Whiskers show 90% confidence intervals of the estimates.

Similarly to the results for pension contributions, the treatments did not have an effect on health insurance contributions among low-effort workers (Figure 12). In contrast, contributions increased by 4 percentage points among high-effort workers when they were exposed to Health Insurance Message treatment. The combination of this message with the Non-Monetary Cost Reduction treatment also produced a positive effect. However, adding the Non-Monetary Cost Reduction treatment to the message did not amplify the impact.

Figure 12: Percentage change in participants' contribution to the health insurance by type of worker



*N*ote: Dots represent the average difference in the percentage change of the contribution after treatment between the other treatments and control group. Whiskers show 90% confidence intervals of the estimates.

We recognize that even if our definition of effort can be quite sensibly linked to the ability to solve the Pair-100 exercises, it may not be a perfect measure of work-related effort outside the experimental setting. Therefore, we analyzed the number of exercises solved correctly and the initial reward received, based on the categorization of

effort. Our analysis revealed a negative relationship, indicating that some participants continued to tackle difficult levels even when making mistakes and receiving lower rewards, compared to those who chose easier levels and solved most of them. Across all 9 attempts, participants selected the easiest level 64.3% of the time, the middle level 31.0% of the time, and the hardest level 4.7% of the time.

8 Concluding Remarks

The results of our laboratory experiment demonstrate the impact of different interventions aimed at increasing the social protection benefits for female self-employed workers. Participants in our experiment were divided into six groups, each receiving a different treatment. One treatment arm involved providing information about the advantages of contributing to a long-term pension system and having health insurance. Another treatment arm focused on encouraging participants to enroll in savings or retirement plans by reducing the associated non-monetary costs.

As in any experimental setting, we do not purport to fully represent the complexity and nuances of the decision-making process around making voluntary contributions to the real-world health insurance plan and pension system in Bolivia. However, we used experimental evidence to compellingly test if behavioral biases and the information available to self-employed women are crucial determining factors of these decisions in real life.

Our pre-experiment focus group showed that self-employed women are willing to acquire health and pension benefits making out-of-pocket voluntary payments. However, it also showed that the currently available options for enrollment in the social protection system in Bolivia are not entirely known to them and entail complex administrative processes. Our findings indicate that simply providing accurate information can significantly increase voluntary contributions to our experimental pension and health insurance plans. Notably, contributions to the health insurance plan were higher than contributions to the pension system. Conversely, reducing non-monetary costs did not result in higher contributions to acquire any of these two benefits. Accordingly, combining the informative message with non-monetary cost reductions did not increase contributions. Therefore, policies should raise awareness and provide information to truly shape behavior.

Additionally, we found that the effect of these treatments varied depending on the type of worker. Women who are low-effort workers – where effort is the primary input for income – do not respond to any of our treatments, while voluntary contributions by high-effort workers are found to be significantly increased by informative messages. Indeed, informative messages are found to be effective interventions even for individuals who do not show willingness to formalize their business and to contribute to the pension system or a health insurance. Lastly, we discovered that raising awareness about the benefits of enrolling pension and health insurance plans through the informative messages can reduce behavioral biases such as excessive risk-taking and present bias (lack of patience). Specifically providing information of the benefits of contributing to pensions system and health insurance were effective even for individuals with a high level of risk tolerance and impatience.

It is important to note that while our design included different informative messages, their individual effects cannot be isolated. The first message delivered in round 4 can be considered a relatively clean treatment, since it represented the initial informational nudge. However, subsequent messages in rounds 6–7 and 8–9 built upon

prior exposure to these nudges, making it impossible to disentangle their marginal impact from the cumulative influence of earlier messages. This was a deliberate feature of the experimental design, as our goal was to assess the effectiveness of an informational campaign in its entirety rather than to test the independent contribution of each message. We see the disaggregation of message types as a valuable avenue for future research, particularly for policymakers interested in sequencing or tailoring information delivery.

In general, our findings show compelling evidence on the central role of information in shaping voluntary contributions to social protection among self-employed women in Bolivia. These results highlight that policy efforts should prioritize clear and accessible informational campaigns to expand social protection coverage sustainably, while complementary reforms to streamline administrative processes may enhance, but not substitute for the impact of information. Future research could further disentangle the effects of message sequencing and explore how context-sensitive designs can foster sustained behavioral change in informal labor markets.

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Digital Appendices

You can find the digital Appendices here.

Appendix A. Theoretical Model and Proofs

A.1 Setup of the Model

Consider a self-employed worker who chooses effort e, and contributions to health insurance s_H and pensions s_P. Income is generated by the production function:

$$Y = f(e) = \theta_e e^{\alpha},$$

where θ_e captures productivity shocks, and $\alpha > 0$. The worker faces disutility from effort given by $\phi(e)$, with $\phi_e > 0$ and $\phi_e^2 > 0$.

Current-period consumption is:

$$C = Y - (s_H - s_P)Y$$

A.2 Utility Function

Per-period utility is:

$$U(C, e) = u(C) - \phi(e) - \kappa(s_H, s_P) + W(s_H, s_P),$$

where $W(s_H, s_P)$ represents the expected future utility from both contributions.

Future utility has two components:

Health insurance. The expected utility of health insurance is modeled as the expected reduction in the utility loss from health shocks:

$$EU_H(s_H) = (1 - p_H) \cdot u(C_{t+1} + p_H \cdot (C_{t+1} - L_H(1 - q_H(s_H))),$$

where p_H is the probability of a negative health shock, L_H is the loss due to the health shock, it would be out of pocket medical expenses plus other possible losses as the income not perceived for not working, etc. q_H is the coverage rate that equals 1 if it has the full coverage and 0 as not having the insurance.

For this purpose the expected utility is related the expected gain of the health contribution. meaning the difference of having any type of insurance from not having.

$$W_H(S_H) = EU_H(S_H) - EU_H(0)$$

$$W_H = (1 - P_H) \cdot U(C_{t+1}) + P_H \cdot U(C_{t+1} - L_H(1 - q_h(s_H))) - (1 - p_H) \cdot U(C_{t+1}) - p_H \cdot U(C_{t+1} - L_H))$$

$$W_H = P_H \cdot U(C_{t+1} - L_H(1 - q_h(s_H))) - p_H \cdot U(C_{t+1} - L_H))$$

Pensions. Pension contributions s_P yield retirement benefits $B_P(s_P) = \rho(s_P) \cdot Y_{\text{avg}}$, with $\rho(s_P)$ a replacement rate. Expected discounted utility is:

$$W_P(s_P) = \sum_{\tau=R}^{T} \delta^\tau \, u(C_\tau(B_P(s_P))).$$

The combined expected utility is:

$$W(s_H, s_P) = \Omega_H W_H(s_H) + \Omega_P W_P(s_P),$$

where Ω_H and Ω_P are salience weights reflecting the perceived importance of each component.

A.4 Optimization Problem

The worker solves:

$$\max_{e, s_H, s_P} \; U(C, e).$$

FOCs yield the optimality conditions:

$$\frac{\partial U}{\partial e} = u'(C) f_e(e) - \phi_e(e) = 0,$$

$$\frac{\partial U}{\partial s_H} = -u'(C) - \kappa'(s_H) + \beta \cdot \Omega_H \frac{\partial W_H}{\partial s_H} = 0,$$
$$\frac{\partial U}{\partial s_P} = -u'(C) - \kappa'(s_P) + \beta \cdot \Omega_P \frac{\partial W_P}{\partial s_P} = 0.$$

A.5 Propositions and Proofs

Information and Perceptions An increase in Ω_H or Ω_P raises optimal contributions s_H^*, s_P^*.

From the FOCs, higher Ω_i increases the marginal benefit of contributions relative to the marginal cost $\kappa'(s_i)$. By the implicit function theorem, $\frac{\partial s_i^*}{\partial \Omega_i} > 0$ for $i \in \{H, P\}$.

Cost Reduction Let κ denote procedural disutility of contributing. Then $\frac{\partial s_i^*}{\partial \kappa} < 0$.

Lower κ decreases the effective marginal disutility of contributing, increasing s_i^*.

Interaction of Information and Costs The marginal effect of information is diluted when procedural costs are reduced:

$$\frac{\partial^2 s^*}{\partial \Omega \, \partial \kappa} > 0,$$

so that $\frac{\partial s^*}{\partial \Omega}|_{\kappa \text{ low}} < \frac{\partial s^*}{\partial \Omega}|_{\kappa \text{ high}}$.

With lower κ, the cost of contributing is already reduced. This makes marginal utility less sensitive to further increases in Ω. Comparative statics follow from the FOC condition.

Heterogeneity The responsiveness to information increases in risk aversion and patience, while responsiveness to cost reductions increases in risk-seeking and impatience.

Risk aversion and discount factor β amplify the weight of future benefits $W(s_H, s_P)$ in the FOC. Conversely, impatience and risk-seeking reduce the perceived gains from contributions, making reductions in κ relatively more impactful.

Appendix B

Table A1: Heckman Estimation of Treatment Effect on Contributions: Second Stage

	(1) Pension Contribution	(2) Health Insurance Contribution
Effort Reduction (ER)	-0.007	-0.004
	(0.023)	(0.016)
Pension Message (PM)	-0.024	
	(0.025)	
PM + ER	0.004	
	(0.025)	
Health Insurance Message (HIM)		0.026
		(0.016)
HIM + ER		0.010
		(0.016)
Observations	2,080	3,202
Individuals	334	361
Controls	Yes	Yes
Round FE	Yes	Yes
Session FE	Yes	Yes

Note: Estimation of the difference in pension contributions (earnings proportion) between pretreatment rounds (1-3) and treatment rounds (4-9). Control variables included age, marital status, number of under-18-children, highest schooling level, per-capita household income, percentage of savings, commerce activity, years of work experience, job quality index, preference for business formalization, preference for health insurance, preference for pension system enrollment, risk aversion index and patience index.

Table A2: Comparison of Observable Characteristics Between Participants and General Population

	H. Survey 2021 (1)	Experiment (2)	Difference (3)
Age	44.445	35.561	-8.883***
	(13.183)	(12.050)	(0.723)
Secondary Education	0.467	0.434	-0.033
	(0.499)	(0.496)	(0.028)
Single	0.429	0.632	0.203***
	(0.495)	(0.483)	(0.028)
Savings Share	0.403	0.406	0.003
	(0.757)	(0.280)	(0.038)
H. Income P/C (Bs/Month)	1,520.842	2,001.040	480.198***
	(1,065.794)	(1,983.593)	(75.784)
Commercial Activity	0.518	0.314	-0.204***
	(0.500)	(0.465)	(0.028)
Experience (years)	8.993	12.448	3.455***
	(9.193)	(10.533)	(0.535)
Observations	1,284	424	1,708

Note: Comparison on covariates between the participants of the experiment and the sample of self-employed women in urban areas of La Paz and Cochabamba from the Household Survey 2021.

Table A3: Treatment Effect on Pension System Contribution Rate by Treatment Group - Without controls

	(1)	(2)	(3)	(4)	(Tobit)
Effort Reduction (ER)	0.017	0.017	0.017	0.017	0.048*
	(0.015)	(0.015)	(0.015)	(0.016)	(0.026)
Pension Message (PM)	0.059***	0.059***	0.059***	0.059***	0.124***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.027)
PM +ER	0.059***	0.059***	0.059***	0.059***	0.120***
	(0.014)	(0.014)	(0.015)	(0.015)	(0.027)
Observations	3816	3816	3816	3816	3816
Individuals	424	424	424	424	424
Controls	No	No	No	No	No
Rounds FE	No	Yes	No	Yes	Yes
Session FE	No	No	Yes	Yes	Yes

Note: Estimation of the difference in pension contributions (earnings proportion) between pretreatment rounds (1-3) and treatment rounds (4-9).

Table A4: Treatment Effect on Health Insurance Contribution Rate by Treatment Group - Without controls

	(1)	(2)	(3)	(4)	(Tobit)
Effort Reduction (ER)	0.003	0.003	0.003	0.003	0.011
	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)
Health Insurance Message (HIM)	0.028*	0.028*	0.028*	0.028*	0.035**
	(0.015)	(0.015)	(0.016)	(0.016)	(0.018)
HIM +ER	0.017	0.017	0.017	0.017	0.025
	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)
Observations	3816	3816	3816	3816	3816
Individuals	424	424	424	424	424
Controls	No	No	No	No	No
Rounds FE	No	Yes	No	Yes	Yes
Session FE	No	No	Yes	Yes	Yes

Note: Estimation of the difference in health insurance contributions (earnings proportion) between pretreatment rounds (1-3) and treatment rounds (4-9).