

05 Working Paper

Building knowledge and awareness of rights

Impact assessment on how access to information and reflection on social security affect the knowledge and rights awareness of construction workers.



Ministerio de
**TRABAJO, EMPLEO
Y SEGURIDAD SOCIAL**



**GOBIERNO
NACIONAL**

*Paraguay
de la gente*

This document has been prepared, designed, laid out and printed within the framework of the Participatory Laboratory for the Formalization of Employment, led by the Ministry of Labor, Employment and Social Security (MTESS) and implemented by the United Nations Development Programme (UNDP). The International Labor Organization (ILO) also contributed to this project. The views expressed in this publication do not necessarily represent those of the United Nations, including UNDP, or any UN Member States. This document is not for profit; therefore, it cannot be commercialized in Paraguay or abroad. Reproduction and dissemination by any means of the contents of this material is authorized, provided that the source is acknowledged.

Recommended citation: Fernando Ovando, Claudia Montanía, Gustavo Setrini, Cristhian Parra, Mónica Ríos, Georgina Hernández, Mónica Recalde, Guillermo Montt. MTESS/UNDP. 2022. Building knowledge and awareness of rights. Impact assessment on how access to information and reflection on social security affect the knowledge and rights awareness of construction workers. Asunción, Paraguay.

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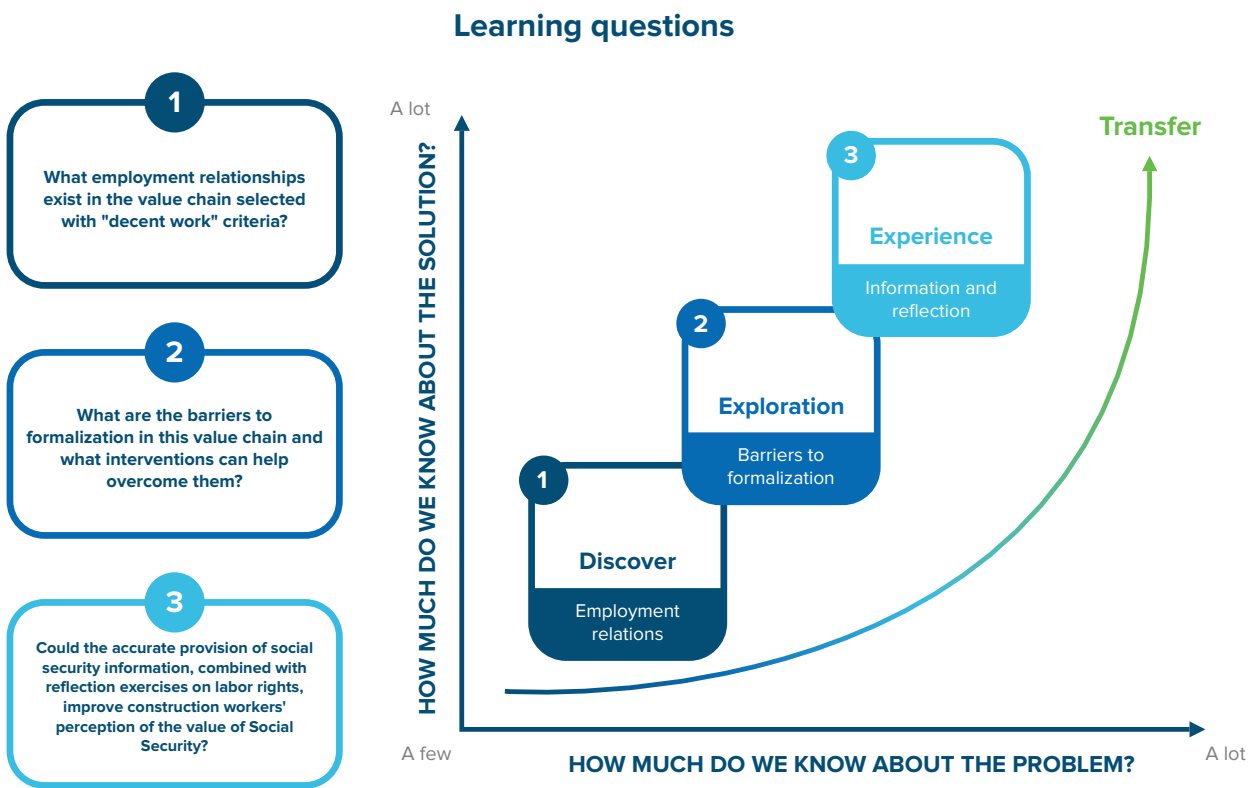
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I. EXECUTIVE SUMMARY

How to overcome barriers to employment formalization in the construction value chain? With this question, the first learning loop of the Ministry of Labor's Participatory Laboratory for Employment Formalization, LabMTESS, was launched. Seeking to identify experimental interventions that generate useful evidence for the design of public policies, LabMTESS undertook a process of discovery and exploration, using mixed methods of participatory action research (Figure 1).

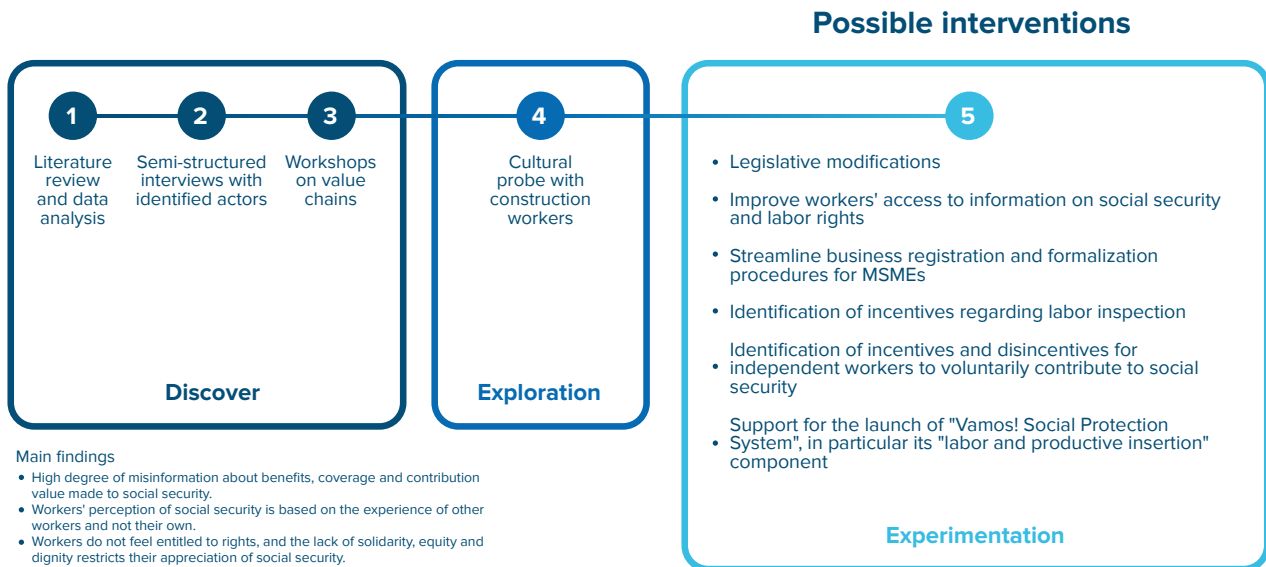
Figure 1: Learning questions that emerged at each stage of the learning loop on formalization of construction employment.



Source: Own elaboration

The persistence of a high degree of misinformation about workers' rights in terms of benefits, coverage and the value of contributions made to social security, i.e., to the Social Security Institute (IPS), as well as the lack of knowledge of employers' obligations, was one of the key lessons that emerged from this process, together with other conclusions and hypotheses that pointed to various possibilities for intervention (**Figure 2**).

Figure 2. Possible interventions that emerged from discovery and exploration



Source: Own elaboration

Based on available resources and time, the team decided to focus on improving access to social security information, experimenting with an information intervention combined with reflection exercises on labor rights. **Figure 3** summarizes the main elements of the intervention, the experimental design and the number of participants each group had. **Table 1**, for its part, summarizes the main elements of the target population, the sampling strategy, the unit of analysis and how the impact is measured.

Figure 3. Main elements of the intervention and the experimental design

Control group: received informative messages via WhatsApp for five consecutive days. The messages contained flyers about different aspects of social security (retirement, savings, contributions, other benefits, etc.)

Informative Seminar Group: they received the messages and participated in an Informative Seminar. The seminar was an adaptation of training courses given by the Ministry of Labor. It contained: principles, rights and obligations, short and long-term benefits, social security institutions and compulsory subjects.

Reflective Group: they received the messages, participated in the informative seminar and then the Reflective Workshop. The workshop focused on providing a rights-based approach to social security. It had three stages: (1) reflection on human and labor rights, (2) reflection on personal security strategies and sources of personal security and insecurity, and (3) reflection on the Paraguayan social security (IPS) as an integrated source of security. social.

| Group | Informative Messages | Informative Seminar | Reflective Workshop | Participants |
|-------------------|----------------------|---------------------|---------------------|--------------|
| Control | X | | | 24 |
| Treatment Group 1 | X | X | | 18 |
| Treatment Group 2 | X | X | X | 28 |

Source: Own elaboration

Table 1. Main elements of the target population, sample, unit of analysis and impact measurement.

| Target population | Sampling |
|--|---|
| <p>Workers in the construction sector identified through a digital socioeconomic questionnaire, disseminated via online social networks.</p> <p>Two inclusion criteria: (1) completion of a construction industry technical training course, and/or (2) having work experience in the construction industry.</p> | <p>Simple random sampling, in which each participant had the same probability of being selected.</p> <p>Three subgroups were randomly selected from the target population, creating three balanced subgroups out of the 281 people who were eligible to be part of the experiment.</p> |
| Unit of analysis | Medición del impacto |
| <p>70 informal construction workers from the Asunción metropolitan area, selected from a registration form that was distributed via the social media accounts of the Ministry of Labor's vocational training programs.</p> <p>The enrollment form included variables such as: place of residence, age work experience, experience with social security, educational level, and income range.</p> | <p>A survey instrument with three sets of questions questions:</p> <ol style="list-style-type: none"> 1. Questions about participants' value assessments of social security (12 questions). 2. Questions about the specifics of social security policies, benefits, and coverage (14 questions) 3. "Moral Dilemmas:" a ranking exercise based on the importance given to different options along 4 dimensions: solidary responsibilities, comprehensiveness/ centrality of social security, rights to social security and equality of access to social security (4 questions). |

Source: Own elaboration

The survey completed by the participants at the end of each intervention made it possible to calculate three indexes that aggregate their responses and reflect the participants' levels of knowledge and perceptions: (1) a **knowledge index**, which measures the participants' knowledge of the economic and health benefits of social security, as well as its institutional rules; (2) a **perceptions index**, which reflects the participants' assessment of the economic and health benefits of social security, as well as their assessment of their labor rights; and finally, (3) a **reflection** response index, which summarizes the participants' responses to moral dilemmas raised in relation to social security.

After calculating these indices, differences between the control and treatment groups were estimated using the Ordinary Least Squares (OLS) estimator, based on a generic functional model adopted to assess the impact of the workshops.

The final results emerging from this analysis indicate that, overall, the information intervention had a significant effect on increasing knowledge and improving perceptions about social security among participants, relative to a control treatment that disseminated informational messages via WhatsApp. In other words, informational workshops conducted by MTESS and other institutions have greater potential to improve knowledge and perceptions than asynchronous communication campaigns via digital media. These effects were seen especially in relation to the valuation of economic and health benefits, rather than the valuation of institutions or institutional rules associated with social security. In some cases, the informative workshop had a greater effect than the reflective one, and vice versa. In general, the difference in effect between the two types of workshops is not very large, so it is concluded that integrating reflective exercises into an informative workshop adds value to this type of training offer. The results show the importance of information dissemination campaigns as a tool to change both the knowledge and the perception that construction workers have about social security. However, since this intervention does not evaluate the role of information in increasing formalization as such, the other obstacles that exist must also be addressed to determine whether this strategy is an effective tool for overcoming barriers to formalization.

II. BACKGROUND

In Paraguay, employment is highly informal; 64% of the population aged 15 years and older who work outside of agriculture work in the informal economy, leaving them without access to social security and other fundamental labor rights. As in many countries, the structure of informality in Paraguay produces groups of workers particularly vulnerable to exclusion from social security systems: women, youth, and the rural population have above-average rates of informality, as well as workers with few years of education, self-employed workers, and employees of micro, small, and medium-sized enterprises (MSMEs). These informal jobs, are concentrated in agriculture, domestic work, construction, commerce, gastronomy, manufacturing, and personal services (Casali et al. 2018).

How can the coverage of the social protection system be extended in the midst of a health and economic crisis? What are the barriers to employment formalization? What kind of interventions and public policies can accelerate the generation of formal employment as part of the economic recovery and the construction of a better economy?

To answer these questions, the Ministry of Labor, Employment and Social Security (MTESS) and UNDP through its Acceleration Lab, with support from the ILO, launched in 2020 one of the first public innovation labs in the country: the Participatory Lab for Employment Formalization of the Ministry of Labor¹, Employment and Social Security (LabMTESS). LabMTESS analyzes the formalization of employment using a value chain approach with a decent work and gender perspective, to promote the full exercise of guaranteed rights. Labor, productive and contractual dynamics are observed within specific value chains, selected based on the strategic priorities for the sustainable development of the Paraguayan economy, identifying barriers and opportunities for the formalization of employment based on the voices of key actors and mainly of male and female workers. The structure of this laboratory and its learning methodology led to the design and execution of the experiment presented in this report. The details of this structure and methodology can be read in the Laboratory's Methodological Guide².

The first LabMTESS focus: the construction sector

The first LabMTESS learning loop focused on the construction sector, given its relevance within the national economic and employment structure (6% of GDP, 8% of employment). In addition, it is one of the activities with the highest degree of labor informality, affecting 90% of those employed in the sector, and is key in the government's recovery plans due to its extensive connection with other activities in the goods and services supply chain. The laboratory conducted a tour of the different phases of the learning loop focused on the construction sector and the actors in its value chain. The main activities and findings of each phase are described below.

¹ <https://labformalizacion.org.py>

² <https://labformalizacion.org.py/>

Discovery phase

In this stage, the LabMTESS team dedicated itself to mapping the structure of production, contracting and employment within the construction sector, identifying the actors in the different linked sectors, analyzing informal employment within the same and the identification of the barriers to the formalization of employment. In all these activities, qualitative methodologies were combined, such as ethnographic observation, semi-structured interviews, and cultural probes, with the analysis of statistical data from official databases, various administrative data and original surveys. The main learning questions that emerged from this phase are the following:

1. What are the labor relations of value chain actors like from a decent work perspective?
2. What are the barriers to formalization of employment and what interventions can help to overcome them?

Exploration phase

This phase took the form of interviews with key actors in the sector's value chain in order to identify their roles and perceptions regarding the formalization of employment. More specifically, we worked with representatives of real estate companies, construction companies and a group of 11 masons, who were involved in a series of participatory workshops to map the value chain of the construction sector. In addition, a cultural probe was used with the 11 workers to facilitate a strategy of self-documentation of the experiences in the context of their respective jobs. Through these activities, some qualitative findings were obtained:

- There is still a high degree of misinformation about the benefits, coverage and value of contributions made to social security, that is, to the Instituto de Previsión Social (IPS).
- Workers' perception of social security is based on the experience of other workers and not on their own experience.
- Workers do not feel that they are subjects of rights. Therefore, the lack of elements such as solidarity, equity and dignity restrict their valuation of social security.

It should be noted that these obstacles represent only a subset of all the barriers to formalization that were identified in the discovery phase of the learning loop³. In addition, these three items capture the obstacles that cultural probe participants most directly and explicitly perceived as problems in formalizing.

These findings inspired initial hypotheses for an experimental intervention to increase the perceived value of social insurance among construction workers:

- The informality of employment implies little institutional incidence in the regulation of work in the construction sector, specifically in the perceptions of risks throughout the career and in the awareness of institutional ways of addressing them.

³. For more information on the barriers encountered in the discovery phase, see: <https://www.py.undp.org/content/paraguay/es/home/library/diagnostico-del-empleo-informal-en-la-cadena-de-la-construccion-.html>

- Absent institutional incidence, risk perceptions and awareness of rights are constructed from the workers' traditional social environment. This is seen in a number of informal concepts of career structure and security, as well as in career aspirations that exclude social insurance (e.g., "floor entitlement" in a marked series of career stages, the aspiration to become a contractor or master builder).
- In particular, working-class masculinity and paternalism are two important values that influence the low valuation of social insurance, because they naturalize and underestimate a degree of risk to which, by right and by law, workers should not be exposed.
- Informal workers consider the IPS as a low-quality health insurance and a pension that they will never receive, without taking into account the economic benefits that cover the risks of accidents, disability, death, etc.
- This reasoning results in valuing private insurance for its "efficiency" and the protection of a "good employer" who lends money or covers the costs of an accident, although in a totally informal way and with less total benefits than social insurance.

On the other hand, at this stage, various options for interventions and formalization strategies were also explored within the literature. In this sense, different types of intervention for labor formalization were identified (Salazar et al., 2018):

- 1. Information intervention:** they tend to inform companies and/or workers about the benefits of formalization or emphasize the legal obligation to register. Studies analyzing this type of intervention mainly arise from experimental evidence.
- 2. Simplification/registration:** simplifies the registration process or supports firms and workers in doing so. Generally, all simplification interventions are political, i.e., implemented at scale.
- 3. Tax incentive:** reduce the tax burden on businesses or workers and thus incentivize them to formalize.
- 4. Financial incentive:** they provide the least expensive business registration or deliver a reward payment explicitly for formalization. The offers are typically time-limited and are introduced in experimental settings.
- 5. Labor inspection:** these are designed with the objective of reducing informality through periodic controls.

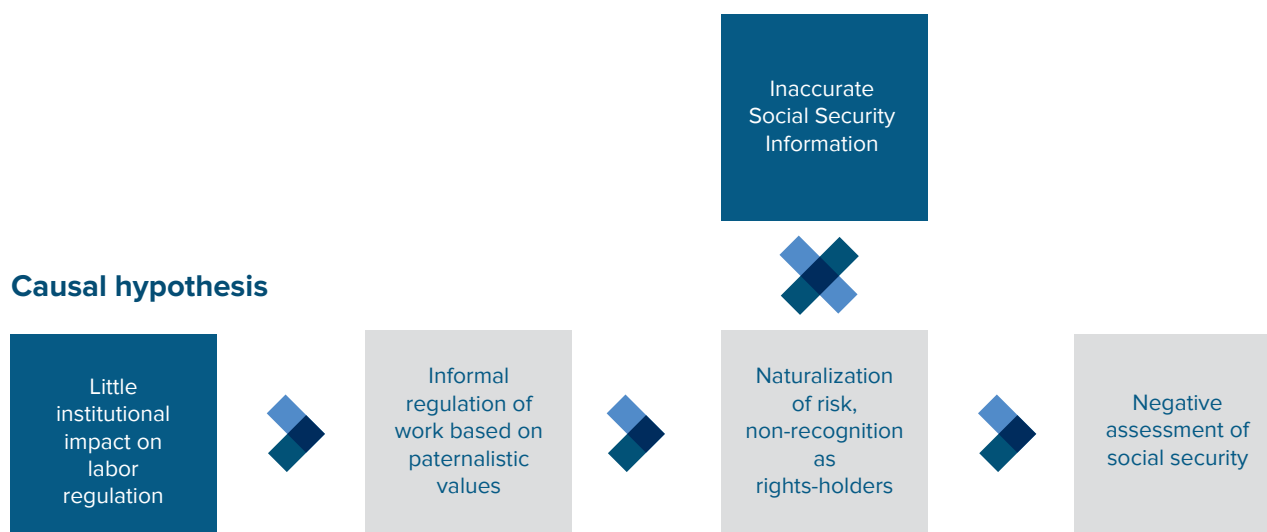
Based on the findings and types of intervention, it was chosen to experiment with the implementation of an **information intervention**. Therefore, the desired impact of these interventions is to increase the willingness of workers to contribute to social security schemes based on the information received through the intervention (Bosh et al., 2019). However, it should be mentioned that the impact of the proposed intervention is limited by a series of structural factors that go beyond what can be addressed by the experiment, such as the ability to finance social insurance contributions in a sustainable way, the bargaining dynamics between workers and employers, and the productivity of economic units. Regarding the latter, it should be mentioned that, although LabMTESS considers access to IPS as an indicator of formalization, this does not imply that the other labor rights of workers formalized under this criterion are respected. Furthermore, following this concept of formalization, the intervention would be aimed at all informal workers who are in an employment relationship of dependence with a formalized employer, i.e., all informal workers who provide services within informal enterprises are excluded.

III. CAUSAL CHAIN

(THEORY OF CHANGE)

The central hypothesis that emerges from the exploration activities of our learning loop is summarized in the causal chain in Figure 4⁴. It is observed that the low institutional incidence in labor regulation is the main cause of the informal regulation of labor, based on paternalistic values. This, in turn, leads to the naturalization of risk at work and the non-recognition of workers as subjects of rights, such as, for example, the right to social security, health and safety at work. To the extent that the information on social security available to workers is imprecise, this naturalization of risks increases the negative valuation of social security.

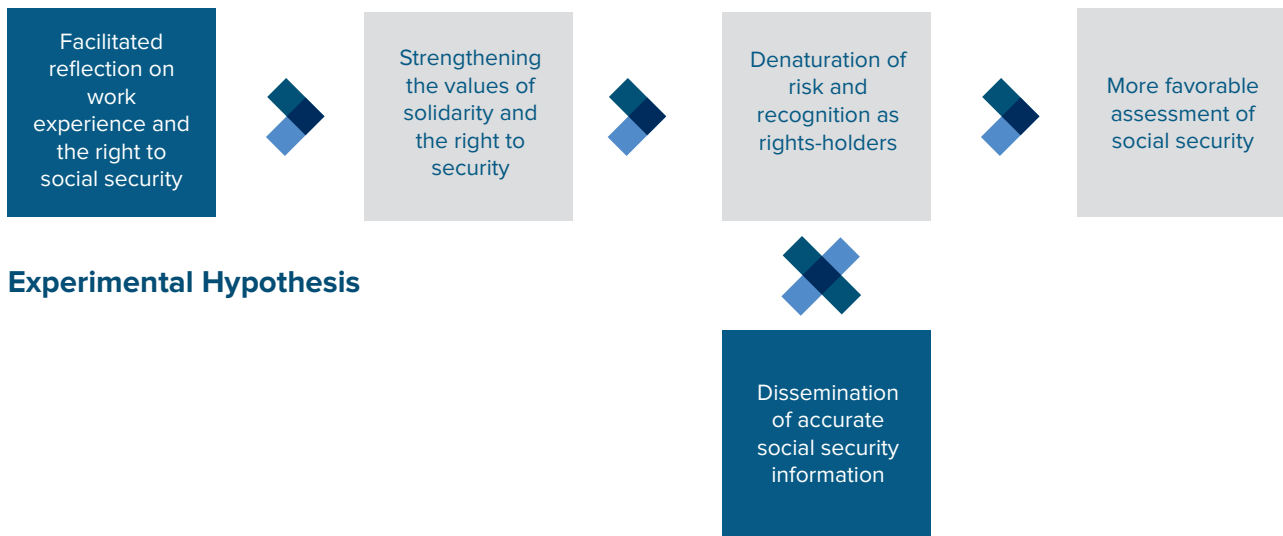
Figure 4. Causal chain that emerged from the exploration of the learning loop



Source: Own elaboration

The experimental design presented in the following sections focuses on the variable associated with the quality of information on social insurance, which, according to the exploration hypothesis, conditions the extent to which the naturalization of risks increases the negative valuation of social insurance. For this reason, an information intervention is proposed that seeks to validate the hypothesis represented in the causal chain in **Figure 5**.

⁴ On the methodology of "arrow diagrams" for the visualization of causal hypotheses, see the UNDP Paraguay Acceleration Lab's hypothesis development guide. <https://www.py.undp.org/content/paraguay/es/home/blog/2020/Construyendo-Hipotesis-para-el-Desarrollo.html> y Van Vera, S., & Álvarez, J. Á. (2002). Guía para estudiantes de ciencia política: métodos y recursos. Gedisa.

Figure 5. Causal chain specific to the experiment

Source: Own elaboration

The experimental hypothesis establishes that, through reflection on the right to social security, the values of labor rights and solidarity can be strengthened, helping to denaturalize risks and generating recognition of workers as subjects of rights. Such reflection, combined with the provision of accurate information on social security, its benefits and institutional rules, would increase the positive valuation of social security by workers.

IV. THE EXPERIMENT

To test the experimental hypothesis, two experimental treatments and a control treatment were developed. The objective was to determine the extent to which information and/or reflection activities promote awareness of rights and the willingness of workers to participate in social security and to value its formalization. The content of each type of treatment is described below:

Control treatment: informational messages.

The informative messages were designed based on didactic materials belonging to the Social Security Directorate of the MTESS. They provide direct information that addresses the frequently asked questions that were collected during the interviews conducted previously. These messages were sent through the instant messaging application WhatsApp. In total, 1 message was sent per day, for a period of 5 days, throughout which the following topics were covered: concept of social security, entitlement to social security for construction workers, contribution percentages for employer and employee, social security coverage and retirement. The period for sending messages was from November 24 to 28, 2020.

Figure 6. Material sent to participants with information on social security



Treatment 1: Informative workshops

The informative workshops provided within the framework of this intervention were adaptations of the social security training courses given by the MTESS. The objective of these workshops was to develop knowledge of rights, obligations and benefits related to social security.

The topics covered in this workshop were:

1. Definition of social security
2. General principles of social security
3. Obligated parties and forms of IPS affiliation.
4. Beneficiaries of social security
5. Short-term benefits
6. Health and access to medical services
7. Retirement and pensions

The workshops were given by MTESS social security specialists. Due to the contingency caused by the pandemic, 3 days of informative workshops were held during the month of December 2020. The workshops had a lecture format, followed by a question and answer session where participants were able to express their concerns and doubts regarding what was presented by the MTESS representatives.

Treatment 2: Reflective workshops

The reflective workshops were exclusively designed for this intervention by the LabMTESS research team. These workshops focused on the analysis and reflection on social security from a rights perspective. The workshops included three methodological and reflective moments:

1. Recognition of construction workers as subjects of rights, which sought to foster in the construction of the identity of each one as a subject of rights taking social security as a reference.
2. Identification of the sources of security and insecurity of construction workers in order to approach the institutional, personal and future vision referents that frame their perception of social security.
3. Reflection on social security (IPS) as an integral approach to social security.

As with the informative workshops, the COVID-19 pandemic also affected the realization of the reflective workshops. Two days of workshops were facilitated by members of the LabMTESS research team. The duration of these was 2.5 hours, where a space was created to reflect on the three points mentioned above. In other words, the methodology of these workshops was based on sharing the thoughts and ideas of the workers rather than on presentations by the facilitators. In this way, knowledge and perceptions about social security were discussed from a legal perspective and emphasizing the opinions of the participants.

The participants

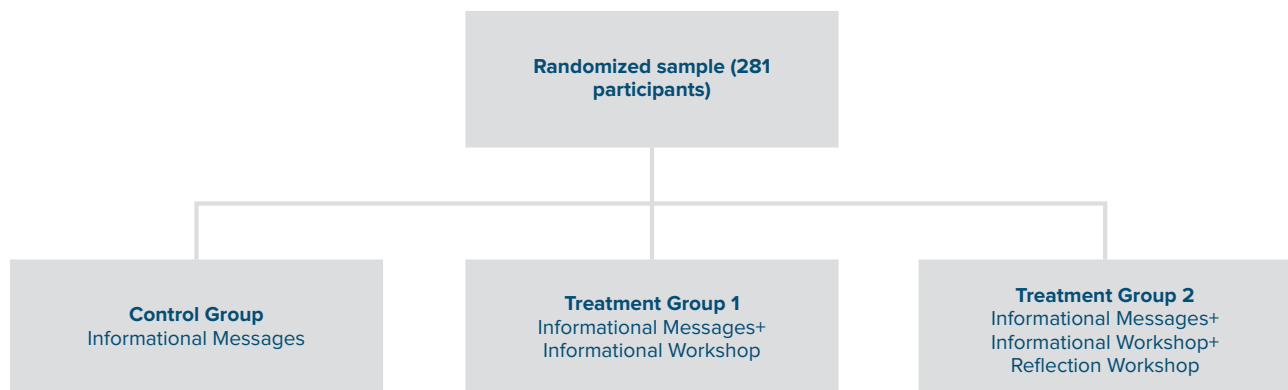
El experimento tuvo lugar durante el mes de diciembre del año 2020. Debido a la contingencia The experiment took place during the month of December 2020. Due to the contingency caused by the COVID-19 pandemic, the number of participants allowed for an activity of this size was restricted. Therefore, the workshops could not be conducted in a single day.

Participants were assigned to the different treatments using a simple randomization protocol. The workers selected for both the treatments and the control group were contacted by telephone to summon them to the places where the workshops were held. All attendees (control and treatment groups) received a monetary incentive equivalent to one minimum daily wage, without exception. Of the 281 workers called to the experiment, 70 participated, resulting in a participation rate of 20%.

As mentioned above, the learnings from the discovery and exploration phases led to the decision to conduct an intervention with construction workers in Asunción and Central. Since LabMTESS did not have direct access to data on informal workers in the construction sector, participants were selected based on an electronic registration form that was distributed through the social networks of the National Labor Training and Education System (SINAFOCAL) and the National Professional Promotion Service (SNPP). This form made it possible to contact workers, but also to capture socioeconomic information such as: residence, age, work experience, experience contributing to social security, educational level, and range of labor income. In total, 281 registration forms were received during the authorized period (see [Annex N° 1](#)).

Evaluation Method

For this loop, a Randomized Control Trial was used to evaluate the impact of the interventions proposed in this experimental design. After completing the enrollment form, individuals were assigned to three groups by simple random sampling: **control group, treatment group 1 and treatment group 2**. The first group corresponds to the **control group**, which received only messages with small relevant information about access to social security by WhatsApp. The second, **treatment group 1**, in addition to receiving the informative messages, participated in an informative workshop on social security. The third, **treatment group 2**, in addition to the informative messages and the informative workshop on social security, also received a reflective workshop on social security with a rights-based approach (see [Figure 7](#)).

Figure 7. Impact assessment design

Source: Own elaboration

The randomization performed ensured that the individuals in the three groups are, on average, similar to each other with respect to all observable and unobservable characteristics prior to the implementation of the intervention. This allows us to compare the results between the groups after the intervention and to ensure that any differences found in the assessment can be attributed to the impact of the intervention. Table 2 shows the sociodemographic characteristics of each group after randomization. In general, it can be seen that the three groups are balanced with respect to sociodemographic characteristics. Furthermore, the differences found between the control and treatment 1, as well as control and treatment 2 groups are not statistically significant. Therefore, it can be guaranteed that the three groups are, on average, similar to each other. In addition to the balance found between the groups, it can also be observed in Table 2 that, although the population of participants is not representative of the general population, the distribution of key socioeconomic variables (sex, education and age) are similar to those of the general population of Asunción and Central, according to the data corresponding to the 2019 Continuous Permanent Household Survey.

Table 2. Sociodemographic characteristics of each group, i.e., after randomization.

| Variable | Control | Treatment 1 | Treatment 2 | Total | Average AMA ^(a) |
|-------------------------------------|---------|-------------|-------------|-------|----------------------------|
| Total | 93 | 94 | 94 | 281 | 110203 |
| Gender | | | | | |
| Male | 81 | 85 | 89 | 255 | 107254 |
| | 87.10 | 90.43 | 94.68 | 90.75 | 97.32 |
| Female | 11 | 9 | 5 | 25 | 2949 |
| | 11.83 | 9.57 | 5.32 | 8.90 | 2.68 |
| DK/NA | 1 | 0 | 0 | 2 | - |
| | 1.08 | 0.00 | 0.00 | 0.36 | - |
| Education | | | | | |
| Primary | 8 | 8 | 5 | 21 | 45397 |
| | 8.6 | 8.51 | 5.32 | 7.47 | 41.19 |
| Secondary | 70 | 73 | 77 | 220 | 50128 |
| | 75.27 | 72.22 | 82.14 | 77.14 | 45.87 |
| Tertiary | 7 | 1 | 2 | 10 | (b) |
| | 8.33 | 0 | 3.57 | 4.29 | (b) |
| University | 8 | 12 | 10 | 30 | (b) |
| | 8.33 | 22.22 | 14.29 | 14.29 | (b) |
| Experience | | | | | |
| None | 12 | 4 | 14 | 30 | - |
| | 12.9 | 4.26 | 14.89 | 10.68 | - |
| Less than 1 year | 10 | 17 | 10 | 37 | (b) |
| | 10.75 | 18.09 | 10.64 | 13.17 | (b) |
| 1 to 3 years | 22 | 16 | 21 | 59 | (b) |
| | 23.66 | 17.02 | 22.34 | 21 | (b) |
| More than 3 years | 49 | 57 | 49 | 155 | 79527 |
| | 52.69 | 60.64 | 52.13 | 55.16 | 72.16 |
| History of IPS Contributions | | | | | |
| Yes | 47 | 48 | 53 | 148 | - |
| | 50.54 | 51.06 | 56.38 | 52.67 | - |
| No | 46 | 46 | 41 | 133 | - |
| | 49.46 | 48.94 | 43.62 | 40 | - |
| Age Range | | | | | |
| 18 to 25 | 15 | 25 | 17 | 57 | 24527 |
| | 16.13 | 26.60 | 18.09 | 20.28 | 22.26 |
| 26 to 35 | 38 | 36 | 32 | 106 | 26109 |
| | 40.86 | 38.30 | 34.04 | 37.72 | 23.69 |
| 36 to 45 | 20 | 19 | 25 | 64 | 21849 |
| | 21.51 | 20.21 | 26.60 | 22.78 | 19.83 |
| 46 and over | 14 | 9 | 15 | 38 | 37718 |
| | 15.05 | 9.57 | 15.96 | 13.52 | 34.23 |
| DK/NA | 6 | 5 | 5 | 16 | - |
| | 6.45 | 5.32 | 5.32 | 5.69 | - |

Source: Own elaboration

Notes: (a) The average for the Asunción Metropolitan Area (AMA) comes from the 2019 Permanent Continuous Household Survey (EPHC), (b) The values are not reported due to insufficient sample.

Finally, it should be noted that the conclusions reached with the impact evaluation refer to the effects on the population participating in the experiment. The characteristics of other people and different contexts do not allow the conclusions to be extended to the population as a whole. The different limitations that an impact evaluation may have in practice are described in greater detail in **Annex No. 2**.

The Impact Assessment Instrument

The evaluation instrument was developed with three sections. Section I asks a series of multiple-choice questions about participants' perceptions of social security in terms of access rights, coverage and the importance they assign to social security. In this way, it is possible to observe how information interventions can affect participants' previous self-reported perceptions.

The second section on "knowledge of social security" consisted of multiple-choice questions, with the objective of capturing the degree of specific knowledge about aspects related to social security benefits (health coverage, economic benefits, retirement).

The last section of the instrument was posed as stories in the form of moral dilemmas to encourage reflective thinking. These stories seek to capture the effect of information with a focus on rights on workers' perception of social security and self-perception as subjects of rights, in the face of stories that characterize labor relations within a sector marked by high labor informality. These stories were designed to cover aspects linked to four central issues in social security: solidarity responsibility, the comprehensiveness of the social security system, the right to access social security, and finally, equality in access to social security.

Table 3 shows, as an example, a question for each of the sections included in the evaluation instrument (**See complete document in Annex N° 3**):

Table 3 Example of questions included in each section of the assessment instrument.

| Section | Example |
|--|---|
| <p>Questions about value assessments (12 questions)</p> | <p>P13. At what point should a salaried worker be insured by IPS?</p> <ul style="list-style-type: none"> a. (.....) Within 30 days of being employed b. (.....) When the employer pays the first month's salary c. (.....) As of the first day on the job d. (.....) When the business undergoes a labor audit e. (.....) At any point during the employment period |
| <p>Direct questions (14 questions)</p> | <p>P5. Which of these options offers the most security in case of a workplace accident?</p> <ul style="list-style-type: none"> a. (.....) IPS coverage b. (.....) Private insurance coverage c. (.....) Medical coverage offered at public hospitals d. (.....) Employer paid compensation e. (.....) None of the above |

Reflection questions (4 questions)t

P27. Marcos just landed his first job with a construction business at 21 years. When he shows up to work, the boss tells him his contract will be for one year, and offers a daily wage as payment. He then asks, **"Do you want to work with or without IPS?"** Marcos reasons: *"I am too young to have social security, I'm healthy, I'm not sick, and I learned construction from my dad, so I don't think I'll have an accident. I don't really want IPS, that way I can have more money in my pocket."* But he also remembers his grandfather, who is still working despite his advanced age, because his contributions didn't amount to enough to cover a retirement pension. Marcos doesn't know what his grandfather thinks, but he knows that he didn't demand to pay into social security when he was younger. What do you think about this scenario? *Rank the following options from 1-6 according to what you believe is most important, where 1 is the most important consideration and 6 is the least important.*

| | |
|--|---|
| | It's okay for Marcos to not contribute right now, because he has other, more important needs for the money. |
| | As a society, we should practice solidarity so that elder retirees can have a pension thanks to our contributions. |
| | Young, healthy people don't need social security because they run few risks on the job. |
| | Social security is important at all life stages, because one never knows what might happen in the future and always needs protection. |
| | Contributing from a young age gives you a greater chance of retiring when you reach 60 to enjoy your old age. |
| | Marcos' grandfather deserves a dignified retirement, like all senior citizens. |

The questionnaire was administered to all intervention participants. Participants in **treatment groups 1 and 2** answered the questions after participating in the workshops according to their assigned treatment. In contrast, members of the **control group** completed the instrument and then received information on social security and informative talks on technical training options.

V. DESCRIPTIVE ANALYSIS AND RESULTS OF THE INTERVENTION

The main variable -information/perception that workers have about social security- is measured through the construction of indexes based on the workers' responses to the instrument applied. Taking into account that the questions in the questionnaire respond to different components or dimensions of social security, three groups of indexes are constructed to represent the different aspects for each section of the instrument: **1) knowledge indexes, 2) perception indexes and 3) indexes of response to reflective stories.** Within these three main groups, additional indices are also located to allow a more detailed analysis of each dimension. A detailed description of the procedure and approach adopted for the creation of these indices is provided in the Annex N° 4 section.

The results of the intervention are described below. Due to the restrictions of COVID-19 and its numerous consequences, the level of attendance of participants in the intervention workshops was affected. Of the 281 workers convened, 70 attended: 24 of the 93 assigned for the control group, 18 of the 93 convened for treatment group 1, and 28 of the 94 convened in treatment group 2. It is important to note that the results described in this section refer to these 70 participants who attended the workshops.

Socioeconomic data of the participants

The random assignment to each treatment group allowed us to obtain balanced groups according to the main socioeconomic variables. **Table 4** shows the distribution of the 70 participants who attended according to socioeconomic characteristics within each random assignment group for the intervention. The balance between groups according to the main variables maintains a similar behavior to those obtained with the total of 281 selected participants (**see Table 4**). In the same way, the differences found between these three groups are not significant, which guarantees the balance of the three selected groups.

In summary, most of the participants are men between 26 and 45 years of age, with high school education and more than three years of work experience. In addition, it is important to note that most of them have had experience contributing to IPS within the three treatment groups.

Table 4. Socioeconomic variables of attendees by treatment group

| Variable | Control | Treatment 1 | Treatment 2 | Total |
|--|----------------|--------------------|--------------------|--------------|
| <i>Total participants who attended</i> | 24 | 18 | 28 | 70 |
| Gender | | | | |
| Male | 20 | 15 | 16 | 61 |
| | 83.33 | 83.33 | 92.86 | 87.14 |
| Female | 4 | 3 | 2 | 9 |
| | 16.67 | 16.67 | 7.14 | 12.86 |
| Education | | | | |
| Primary | 2 | 1 | 0 | 3 |
| | 8.33 | 5.56 | 0.00 | 4.29 |
| Secondary | 18 | 13 | 23 | 54 |
| | 75.00 | 72.22 | 82.14 | 77.14 |
| Tertiary | 2 | 0 | 1 | 3 |
| | 8.33 | 0.00 | 3.57 | 4.29 |
| University | 2 | 4 | 4 | 10 |
| | 8.33 | 22.22 | 14.29 | 14.29 |
| Experience | | | | |
| None | 3 | 0 | 5 | 8 |
| | 12.50 | 0.00 | 17.86 | 11.43 |
| Less than one year | 4 | 9 | 2 | 15 |
| | 16.67 | 50.00 | 7.14 | 21.43 |
| 1 to 3 years | 5 | 2 | 7 | 14 |
| | 20.83 | 11.11 | 25.00 | 20.00 |
| More than 3 years | 12 | 7 | 14 | 33 |
| | 50.00 | 38.89 | 50.00 | 47.14 |
| History of IPS Contributions | | | | |
| Yes | 14 | 11 | 17 | 42 |
| | 58.33 | 61.11 | 60.71 | 60.00 |
| No | 10 | 7 | 11 | 18 |
| | 41.67 | 38.89 | 39.29 | 40.00 |
| Age Range | | | | |
| 18 to 25 | 2 | 5 | 4 | 11 |
| | 8.33 | 27.78 | 14.29 | 15.71 |
| 26 to 35 | 10 | 5 | 9 | 24 |
| | 41.67 | 27.78 | 32.14 | 34.29 |
| 36 to 45 | 8 | 6 | 9 | 23 |
| | 33.33 | 33.33 | 32.14 | 32.86 |
| 46 and over | 4 | 2 | 6 | 12 |
| | 16.67 | 11.11 | 21.43 | 17.14 |

Source: Own elaboration

Descriptive results of the indexes used

The main results obtained after the calculation of each defined index are shown below. For this purpose, **Table 5** offers a summary of all the indexes calculated, their respective concepts and the maximum and minimum values they can take according to their theoretical configuration.

Table 5. Definition of the indexes created for the analysis

| Index | Definition | Max Possible | Min Possible |
|-------------------------------|---|--------------|--------------|
| Knowledge Index | Measure the level of total knowledge about social security, aggregating the various dimensions considered in the study (economic, health, and institutional). | 12.16 | 0.65 |
| Economic Benefits Index | Measures individuals' knowledge of IPS's economic benefits. | 6 | 0 |
| Health Benefits Index | Measures individuals' knowledge of IPS's health benefits. | 1 | 0 |
| Institutionality Index | Measures individuals' knowledge of IPS institutional role. | 12 | 1 |
| Value Assessment Index | Measures individuals value assessment of social security, aggregating the various dimensions considered in the study (economic, healthy, and rights). | 21.29 | 0 |
| Economic Benefits Value Index | Measures the value assessments individuals hold regarding IPS' economic benefits. | 12 | 0 |
| Health Benefits Value Index | Measures the value assessments individuals hold regarding IPS' health benefits. | 12 | 0 |
| Rights Value Index | Measures the value assessments individuals hold regarding their rights to social security. | 12 | 0 |
| Solidarity Index (P27) | Measures the degree to which individuals hold a rights-based focus regarding the social solidarity dimensions of social security. | 29 | 13 |

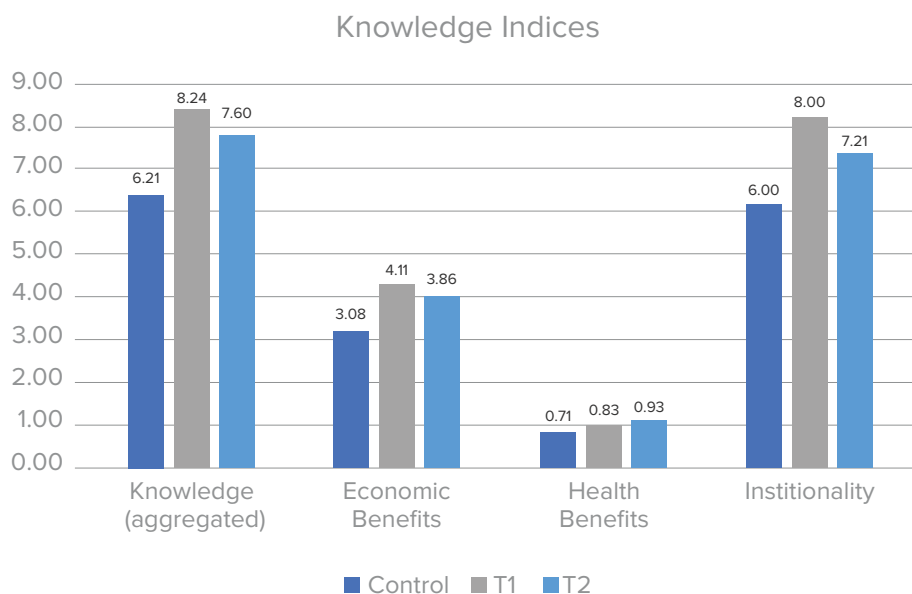
| | | | |
|---|---|----|----|
| Comprehensiveness / Centrality Index (P28) | Measures the degree to which individuals hold a rights-based focus regarding the comprehensiveness / centrality of IPS. | 29 | 13 |
| Right to Access Social Security Index (P29) | Measures the degree to which individuals hold a rights-based focus regarding access to social security. | 29 | 13 |
| Equality of Access to Social Security Index (P30) | Measures the degree to which individuals hold a rights-based focus regarding equality of access to social security. | 29 | 13 |

Source: Own elaboration

Figure 8 shows the results of the knowledge indexes obtained by the participants. In general, average values were obtained in all the indexes. Regarding the aggregate index, it can be observed that there is a significant increase in the knowledge of individuals who received both T 1 and treatment 2, with respect to the control group ($t=-3.12$ and -2.47 , respectively, $p\text{-value}<0.05$ in both cases).

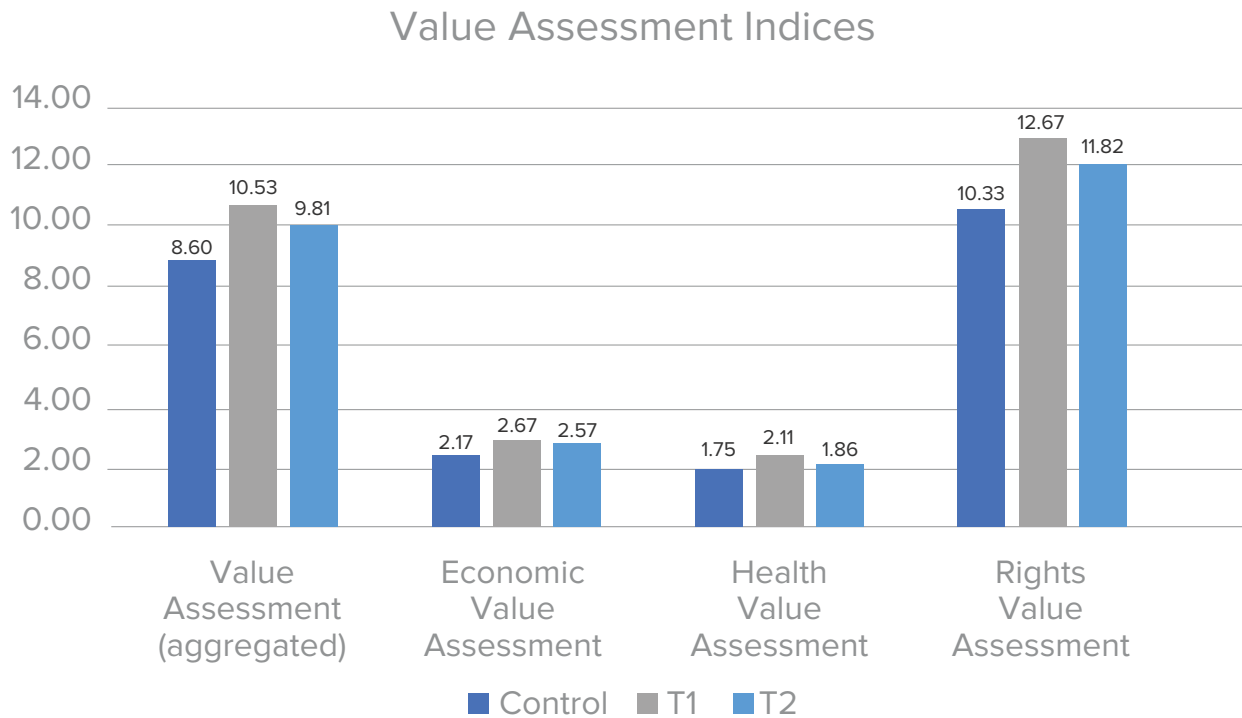
In addition, the T1 group had the highest score on average among the three assigned groups. Similarly, the indices of knowledge of economic benefits and institutionality followed the same behavior. However, although the individuals who participated in treatment 1 and 2 obtained better scores for the health benefits index, in this case, the T2 group obtained a better average score than T1.

Figure 8. Results of the knowledge indexes (averages)



Source: Own elaboration

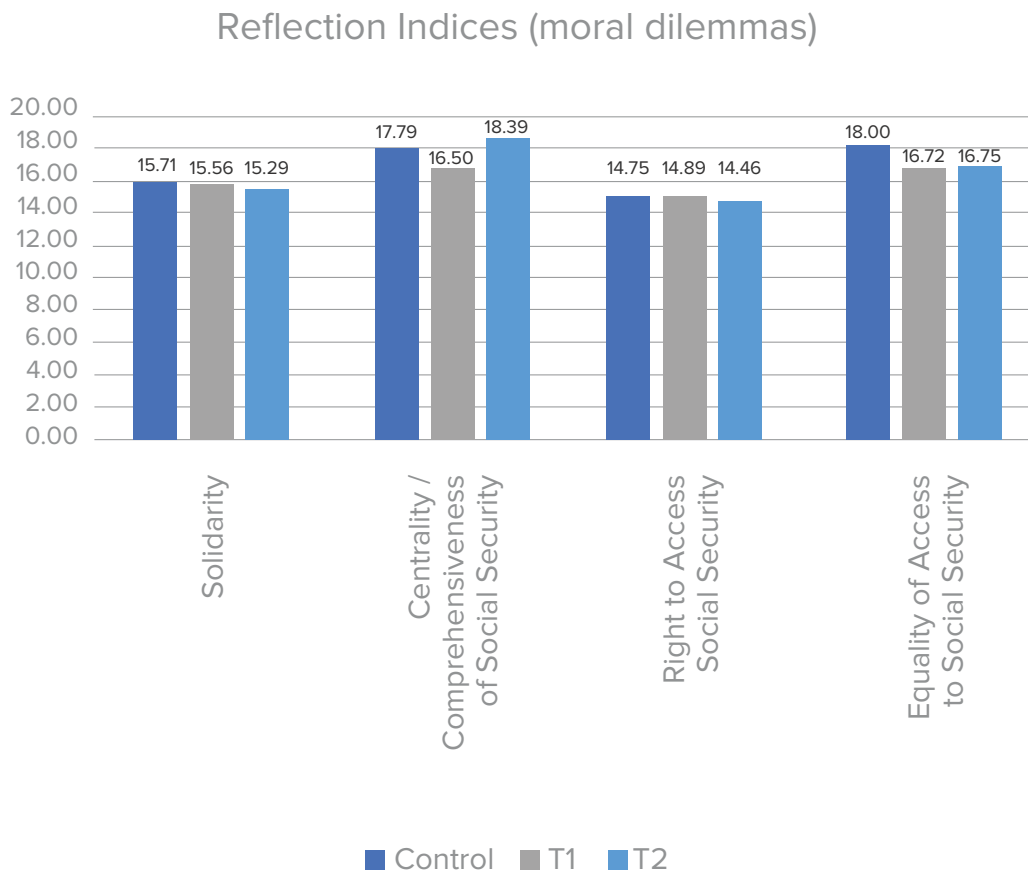
As for the perception indexes, high scores were obtained in all three groups (see Figure 9). In the same way as in the previous indices, a significant difference is detected between the scores of individuals who received some type of treatment ($t=-3.28$ for T1 vs. control, $t=-2.24$ for T2 vs. control, $p\text{-value}<0.05$ in both cases). More specifically, the perception of workers who received T1 towards social security is more favorable than those in the control group and T2.

Figure 9. Results of the perception indexes (averages).

Source: Own elaboration

Finally, **Figure 10** shows the scores obtained by the participants in the reflection indexes. In general, it can be said that workers have a high rights approach in all the dimensions measured: solidarity responsibility, comprehensiveness of the social security system, right to access social security and equality in access to social security. In this case, the small differences between individuals in the control group and those who received treatment are not significant for any of the indices.

Figure 10. Results of the reflection indexes (averages)



Source: Own elaboration

In the following section, we analyze whether the differences found between the three groups assigned for the different indexes measured are the result of the intervention carried out.

The effect of access to information and space for reflection on social security for construction workers

For the measurement of the effects generated by the interventions carried out, the differences between the control group and the treatment 1 and treatment 2 groups are estimated using the Ordinary Least Squares (OLS) estimator. For this purpose, the generic functional model adopted to evaluate this impact is as follows:

$$Y_i = \beta_0 + \beta_1 T_i + \beta_2 edu_i + \beta_3 exp_i + \beta_4 ips_i + \beta_5 edad_i + \epsilon_j$$

Where:

- Y_i is the information/perception/moral dilemma index of each individual i .
- T_i is the treatment received by individual i
- $[[edu]]_i$ is the level of education of individual i
- $[[exp]]_i$ is the years of work experience in construction of individual i
- $[[ips]]_i$ is a binary variable that assumes a value of 0 if individual i did not contribute to IPS, and a value of 1 if the individual contributed to IPS
- $[[age]]_i$ is the age of the individual i
- ϵ_j represents the error term of the model.

Based on the generic model indicated above, the other functional forms are used to estimate the effects on the different indexes selected. The details of these models can be found in **Annex No. 5**.

The following tables show the coefficients that capture the effect of the interventions and the standard error for each case. The covariates used in the models are not reported in these tables, as their coefficients are not statistically significant. In this sense, the randomization of the participants to the different groups ensures that the observable characteristics between groups are not statistically significant.

Table 6 summarizes the effects that the intervention had on the different dimensions linked to social security knowledge. In general, the two treatments show positive and significant effects on the degree of knowledge of the participants. Regarding the economic benefits offered by IPS, significant effects were observed for the participants who were exposed to the treatments, with scores 30% higher than those of the control group. In relation to the degree of knowledge that the participants have about the health benefits offered by IPS, this is not affected by treatment 1, but a positive and significant effect of 15.4% is found as a result of treatment 2 with respect to the participants in the control group.

In terms of institutional knowledge, the effect of treatment 1 is greater than the effect of treatment 2. While in the first case the increase was 32.3%, in the second case it was 21.4%. The combination of the three previously mentioned indexes shows a greater effect of treatment 1 (32.1% vs. 24%) compared to treatment 2. This highlights the relevance of informative workshops as a treatment, due to the ease of implementation, compared to workshops that include the reflection component.

Table 6. Social security knowledge indexes

| Treatment | Knowledge Indices ¹ | | | |
|-----------|--------------------------------|-----------------------------|------------------------------|----------------------------------|
| | Log (economic benefits index) | Log (health benefits index) | Log (institutionality index) | Log (aggregated knowledge index) |
| T1 | 0.317* (0.164) | 0.121 (0.1000) | 0.323** (0.132) | 0.321** (0.124) |
| T2 | 0.295** (0.115) | 0.154** (0.0748) | 0.214* (0.119) | 0.240** (0.106) |

Standard errors are shown in parentheses

*** p<0.01, ** p<0.05, * p<0.1

¹ We calculated the logarithms of each index in order to show the estimated effects produced by the regression analysis as percentage change.

With respect to the indexes linked to the participants' perception of social security, the results show positive and significant effects in general terms (**Table 7**). In this sense, the combined index of perception shows an effect of 21.5% as a result of treatment 1, an effect higher than that found as a result of treatment 2 (13.7%).

In terms of economic valuation and health valuation of perceptions of social insurance, significant effects are found for treatment 1, in the order of 28.3% and 24.7%, respectively. However, in the case of treatment 2 it cannot be affirmed that the effects are significant.

On the other hand, the valuation of rights shows positive and significant effects for both treatments. The estimated effect is 22.8% for treatment 1 and 15% for treatment 2.

Table 7. Social security perception indexes

| Treatment | Value Assessment Indices | | | |
|-----------|-------------------------------------|-----------------------------------|--------------------------|---|
| | Log (economic benefits value index) | Log (health benefits value index) | Log (rights value index) | Log (aggregated value assessment index) |
| T1 | 0.283** (0.127) | 0.247** (0.116) | 0.228*** (0.0701) | 0.215*** (0.0713) |
| T2 | 0.189 (0.116) | 0.105 (0.0910) | 0.150** (0.0613) | 0.137** (0.0674) |

Standard errors are shown in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Of interest is the effect that the intervention may have on specific perceptions related to social security. Table 8 shows the estimated effects based on specific questions in the questionnaire on the following aspects: 1-The importance you attach to social security (Indicate the degree of importance you attach to social security in the face of events that could occur during your lifetime (old age, death, maternity, disability, accidents, unemployment, illness or others)), 2-The way in which you plan to pay for your old age (How do you plan to pay for your old age?), 3-Security against the risk of accidents (Which of these options gives you more security against the risk of an accident at work during your lifetime?), and 4-If you consider the IPS to be expensive (Do you consider social security to be expensive or costly for the benefits it provides?).

The importance they attach to social security does not show significant effects for the first treatment, but it does for the second treatment; this effect is 12% for those who received treatment 2 with respect to the control group.

The way in which they plan to pay for old age indicates two options in this case. Through retirement or through other alternatives such as: own savings, family help, working all their lives. The intervention shows significant results of 20.2% as a result of treatment 1, thus improving the perception that IPS is the best option to pay for old age. In the case of treatment 2, no statistically significant results are observed; however, in both treatments the option of working all one's life to pay for old age is substantially reduced.

The interventions did not affect the perception of which type of coverage is more adequate to provide security. In this case, between the coverage offered by IPS or the coverage offered by private health insurance and public hospitals. However, it should be noted that the perception of IPS as a source of greater security was already selected above 70% for both the control and treatment groups.

Finally, the last column of the following table shows the participants' perception of the cost of social security in relation to the benefits it offers. Thus, the negative coefficient indicates that after the interventions the perception of the IPS as costly social insurance decreases. The effects are significant for both treatments. The perception of cost is reduced by 27% for treatment 1 and 27.2% for treatment 2.

Table 8. Other indices of perception of social security

| Treatment | Other Effects on Social Security Value Assessments | | | |
|-----------|--|-------------------|--------------------|-----------------------|
| | Log (Importance) | Log (Resolve) | Log (Security) | Log (Cost) |
| T1 | 0.0289 (0.0868) | 0.202* (0.106) | 0.0866 (0.0933) | -0.270*** (0.0953) |
| T2 | 0.120* (0.0605) | 0.136 (0.0963) | 0.0536 (0.0848) | -0.272*** (0.0803) |

Standard errors are shown in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Reflection on stories related to social security did not show significant effects as a result of the intervention. The four reflective stories or dilemmas reflected situations where participants make choices on the following topics: Dilemma 1: Solidarity responsibility, Dilemma 2: Comprehensiveness of the social security system, Dilemma 3: Right to access social security, and Dilemma 4: Equality in access to social security. The following table shows the effects for each of the treatments.

Table 9. Reflective stories on social security

| Treatment | Reflection Indices | | | |
|-----------|------------------------|--|---|---|
| | Log (solidarity index) | Log (centrality / comprehensiveness index) | Log (right to access social security index) | Log (equality of access to social security index) |
| T1 | 0.00871 (0.0328) | -0.0227 (0.0520) | -0.00365 (0.0389) | -0.0954 (0.0588) |
| T2 | -0.0204 (0.0294) | 0.0300 (0.0496) | -0.0172 (0.0273) | -0.0697 (0.0523) |

Standard errors are shown in parentheses

*** p<0.01, ** p<0.05, * p<0.1

VI. CONCLUSIONS AND REFLECTIONS

Knowledge about social security

In general terms, both the informative and reflective workshops generate significant effects on the degree of knowledge that participants have about social security, compared to the control treatment that consisted of passive delivery of information to participants. In terms of knowledge about economic benefits and institutional aspects, the effects are slightly greater for those who received the informative workshop. However, it is interesting to note that knowledge about health benefits is only affected in those who receive the reflective workshop. Regarding health benefits, knowledge about the temporary nature of the right to access medical coverage for workers in the event of work-related accidents is evaluated.

Perceptions of social security

Participants' perceptions of social security were positively affected by the informative workshop and the reflective workshop. The effects are heterogeneous according to the dimension considered. When it comes to perceptions linked to the economic and health valuation of the IPS, significant effects are found as a result of the informative workshop and the reflective workshop. Also, in the valuation of the rights of access to the IPS, the effects are significant for both types of intervention, both informative and reflective.

Analyzing the importance that participants assign to social security, positive effects are obtained for the reflective workshop, but not for the informative one. While access to an IPS pension as a way to pay for old age results in better perceptions for those who attended the informative workshop, but not for the participants of the reflective workshop.

With regard to the security offered by having an IPS in the event of work-related accidents, there were no significant increases in perception. This is due to the fact that previously the participants' perception of the relevance of IPS was already highly valued by both control and treatment group participants. This result highlights IPS coverage over the alternative of accessing private health insurance or public hospitals.

Under the approach of the cost of IPS according to the benefits it offers, the perception improves significantly with the informative and reflective workshop. Thus, the participants of both workshops perceive a lower cost in terms of the rights and benefits of social security than those who did not participate in the workshops and only received informative messages.

Space for reflection on social security

Although the section evaluated, in which the section reflecting on stories related to social security does not show significant effects as a result of the interventions, it is extremely important to value the space for reflection on the rights that workers have. The results offered by the reflection spaces could strengthen in the medium and long term the adequate use of knowledge and perceptions on social security in the face of various situations that usually take place within a labor market characterized by informal practices in the hiring of workers.

Final reflections

The evidence produced by the experiment suggests that information and reflection interventions on social security should form a central part of the range of employment formalization policies in Paraguay. While a relatively high valuation of social insurance was observed in the control group, the provision of accurate information on social insurance benefits, policies and procedures in the treatment groups substantially improved that valuation. Informational workshops or seminars appear to be especially effective in improving the valuation of health and financial benefits.

Thus, informational seminars conducted by the MTESS and other institutions represent an effective and efficient strategy to improve workers' interest in accessing social security. In combination with other interventions designed to generate interest in social insurance on the part of employers, these seminars have a high potential to increase the number of insured in the construction industry in Paraguay.

On the other hand, it must be emphasized that they alone are not sufficient. Making access to social security effective, as was seen in the exploratory activities, requires addressing other barriers in combination with the one addressed in this work. These include the need to better clarify the legal liability of contractors and subcontractors, streamline procedures, identify incentives for labor inspection, among others. The experimental approach presented in this paper and throughout the LabMTESS learning loop will allow each of these barriers to be addressed from an evidence-based logic and with the meaningful participation of workers.

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