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Does Formalization Improve Welfare?

Evidence from Social Insurance in Algeria

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Abstract

This paper examines the impact of social security affiliation on workers' welfare in Algeria, focusing on health, income, and savings. Using data from the CREAD survey (2014) and the MICS 6 survey (2019), the study applies the Propensity Score Matching (PSM) method to address selection bias and to estimate the causal effects of social security coverage.

The findings indicate that social security affiliation has a significant positive impact on both health and income. Specifically, affiliated individuals are less likely to report chronic illnesses and tend to be diagnosed at a later age compared to non-affiliated individuals, reflecting improved long-term health outcomes. In terms of income, social security coverage is associated with higher average earnings, suggesting that affiliation provides financial stability and economic security. However, the results regarding savings are less conclusive, as no statistically significant impact is observed, possibly due to reduced disposable income resulting from social security contributions. These mixed findings underscore the importance of tailoring social security systems to better address the needs of informal workers, including flexible contribution schemes and targeted financial incentives. The results provide critical insights for policymakers seeking to expand social security coverage in Algeria, emphasizing the need for enhanced communication strategies to increase awareness of the social security benefits and reduce coverage gaps, thereby promoting formalization and improving overall population well-being.

Key words: informal employment, social security, impact, propensity score matching, health, income savings.

JEL codes: C21, D31, I13, J46.

Résumé

Cet article examine l'impact de l'affiliation à la sécurité sociale sur le bien-être des ménages en Algérie, particulièrement leur état de santé, le revenu et l'épargne. En utilisant les données de l'enquête CREAD (2014) et de l'enquête MICS 6 (2019), cet article applique la méthode d'appareillement des scores de proportions pour corriger les biais de sélection et estimer les effets causals de la couverture de la sécurité sociale. Les résultats montrent que l'affiliation à la sécurité sociale a un impact positif significatif sur la santé et le revenu. Plus précisément, les personnes affiliées sont moins susceptibles de déclarer des maladies chroniques et tendent à être diagnostiquées plus tardivement que les non-affiliés, ce qui reflète de meilleurs résultats de santé à long terme. En termes de revenu, l'affiliation est associée à des revenus moyens plus élevés, suggérant que la couverture sociale procure une stabilité financière et une sécurité économique. Cependant, les résultats pour l'épargne sont moins concluants, sans impact

statistiquement significatif observé, probablement en raison d'une diminution du revenu disponible liée aux cotisations sociales. Ces résultats mitigés soulignent l'importance d'adapter les systèmes de sécurité sociale pour mieux répondre aux besoins des travailleurs informels, en introduisant des régimes de cotisation plus flexibles et des incitations financières ciblées. L'étude met également en évidence la nécessité de recherches supplémentaires pour comprendre les facteurs influençant les faibles taux d'affiliation, malgré les avantages économiques et sanitaires identifiés. Ces résultats fournissent des informations essentielles pour les décideurs cherchant à élargir la couverture de la sécurité sociale en Algérie, en mettant l'accent sur l'amélioration des stratégies de communication pour accroître la sensibilisation et réduire les lacunes de couverture, favorisant ainsi la formalisation et le bien-être de la population.

Mots clés : emploi informel, sécurité sociale, impact, méthode d'appareillement, santé, revenu, épargne.
Code JEL : C21, D31, I13, J46.

1. Introduction

The extension of social security coverage in Algeria is crucial. According to the latest labor force survey (2024), 38.9% of workers are not affiliated with social security, which amounts to nearly four out ten individuals. The literature (Merouani et al 2016; Maloney 2004; Günther & Launov 2016, Charmes & Adair, 2022) has shown that the labor market is segmented, dividing workers into two groups: those working informally without social security[1] coverage due to a lack of formal job opportunities, and those who, after a cost-benefit analysis, choose not to affiliate with social security, believing that the contributions paid do not worth the benefits. Indeed, the SAHWA[2] survey (2016) reveals that 35% of employed respondents assert that they are not interested in social security affiliation, while 9% preferred to keep their gross salary rather than pay contributions (Merouani et al 2021).

Social insurance is indeed a merit good (Caire 2002), whose utility is often difficult for individuals to understand. It is easier to perceive the benefit of consuming chocolate than to understand the value of enrolling in a social insurance. It is therefore essential to communicate and demonstrate the utility of social security and clarify it for workers in order to encourage enrollment. In this paper, we use data from the CREAD survey and the MICS 6[3] to examine the impact of social security affiliation on household welfare, by testing its effects on health, savings, and income. While Health data are available in both surveys, information on savings and income are only found in the CREAD survey. This latter survey covers a sample of 655 workers in the wilaya of Algiers and includes all sectors of activity. The sample was selected using a quota sampling method based on the structure of the 2014 labor force survey, ensuring that it reflects that structure of the labor market. However, since the sample was not randomly drawn, we cannot guarantee its statistical representativeness, and the results therefore apply only to this specific sample (Merouani 2015; Merouani et al 2016). Notably, the originality of these two surveys lies in their inclusion of the outcomes of interest (health, saving and income) unlike labor force surveys in Algeria, which do not collect such variables.

To estimate the impact of social security affiliation, we apply the Propensity Score Matching (PSM) method. This quasi-experimental technique constructs an artificial control group matching each treated unit (affiliated with social security) with a non-treated unit sharing

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[1] In this paper, the terms social security and social insurance will be used interchangeably, referring specifically to occupational, contributory social insurance schemes.

[2] Survey conducted among young people aged 15 to 29 in five countries: Algeria, Egypt, Lebanon, Morocco, and Tunisia.

[3] For more details about the MICS survey please see : https://www.unicef.org/algeria/media/1441/file/Enqu%C3%AAte%20par%20Grappes%20%C3%A0%20Indicateurs%20Multiples%20(MICS6)%202019.pdf

similar observable characteristics. Indeed, PSM is a robust method for estimating causal effects (in our case, analyzing the causal relationship between social security affiliation and household health) by mitigating selection bias and ensuring comparability between treatment and control groups.

Using cross-sectional data, individuals were not randomly assigned to treatment (affiliated) and control (non-affiliated) groups. Consequently, systematic differences may exist between those who receive treatment (are affiliated with social security) and those who are not. To address this potential selection bias, we applied the Propensity Score Matching (PSM) method. This approach involves pairing each affiliated individual with a non-affiliated counterpart who shares similar observable characteristics, and then comparing their outcomes. PSM represents an improvement over the classical regression model in several ways (Rosenbaum and Rubin, 1983; Morgan & Winship 2015), and remains one the most widely used method in observational studies (Pearl 2010).

The social policy implications of this research aim to contribute to more informed decision-making for improving the socio-economic well-being of the population and ensuring sustainability of social security funds. The findings will provide a better understanding of the extent to which social security helps improve household living conditions. If the impact proves positive, social security institutions could build on these results to enhance their attractiveness to informal workers and raise awareness among these workers about the concrete benefits of social security, promoting an extension of coverage and increased formalization of the labor market. Conversely, if the results are mixed or negative, the study would provide valuable insights for rethinking and adapting the system to better align with the specific needs and expectations of households.

2. Literature review

According to the social security (Minimum Standards) Convention, 1952 (No.102), the traditional components of social insurance, include the nine branches of social security: medical care; sickness benefits; unemployment benefits; old-age benefits; employment injury benefits; family benefits; maternity benefits; invalidity benefits; and survivors' benefits. The role of social insurance is to smooth consumption over the life cycle, resulting from shocks such as income loss or increased expenses following health problems or an inability to work. While the consumption-smoothing role of social insurance is well established (Chetty & Looney, 2006; Hamermesh, 1980; Modigliani, 1986), social insurance also has other impacts on individuals' well-being and health, which remain debated in the literature (Fisher, 2003; Simpson et al., 2020).

The relationship between social security and health is difficult to establish, as it requires demonstrating a causal link between cash and in-kind social security benefits and the health status of the insured individuals. According to (Ziebarth 2018) it requires establishing the impact of financial resources on health outcomes. Yet, there is little empirical evidence supporting this effect (Cesarini et al 2016; Thomson et al 2022). This challenge is further complicated by the complexity of the concept of health itself, which involves multiple dimensions, including physical condition, mental health, and individual overall well-being. At the International Health Conference held in New York in June-July 1946, the World Health Organization (WHO) defined health as "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*". Since, the conceptualization of health as a multi-dimensional concept is well established in the literature (Andrea 2018; Kronenfeld 2006; Schlenger 1976).

Given the complexity of establishing a direct causal relationship between social security and health, a growing number of quantitative methods have been developed to isolate the specific impact of social security on health outcomes (Ziebarth 2018). In their review of the effects of health insurance on health outcomes , Levy & Meltzer (2008) qualifies health insurance as an endogenous variable and classify studies on this topic into three types. The first category includes observational studies that do not addresses the endogeneity problem and may uses multivariate regression and propensity score matching based on observable variables (Mensah et al 2010; Nshakira-Rukundo et al 2021; Thuong 2020). The second category consists of quasi-experiments or natural experiments studies, which attempt to overcome endogeneity through methods such as difference-in-differences, regression discontinuity designs, or instrumental variables approaches (Pan et al 2016; Qin & Wang 2024; Yaylali, 2023). While these studies addressed the endogeneity problems, their findings may be specific to the population studied and may not be easily generalizable. Finally, experimental studies, that rooted in game theory (Smith 1992), offer the most rigorous evidence. A notable example is the RAND Health Insurance Experiment, that is a true social experiment that targeted over 5,800 individuals from about 2,000 households in six different locations across the United States (Aron-Dine et al 2013; Gooch et al 1989).

Beyond endogeneity issues, the existing literature highlights that social health insurance has a significant positive impact on individuals and population well-being. Social insurances not only contributes to better health outcomes but also reduces economic uncertainty related to health shocks, and addressing health inequalities through equitable access to healthcare services (Keng & Wu 2014). An analysis based on the 2014 China Family Panel Studies (CFPS) shows

a positive correlation between basic social health insurance and the well-being of elderly individuals (Han et al 2022). Similarly, research using data from the 2013 China General Social Survey (CGSS) confirms that basic health insurance improves the well-being of low-income groups (Gu et al 2017). Other studies reveal that individuals benefiting from unemployment insurance, work accident insurance, health insurance, and pension insurance report higher levels of well-being (Chen et al 2022). Overall, a wide coverage of social insurance significantly improves populations' life satisfaction and well-being (Han et al 2022). In addition, individuals with private health insurance experience significantly better health outcomes (Hullegie & Klein 2010). In the Chinese context, studies also demonstrate that property and life insurance positively affect residents' well-being (Hu & Su 2014), while private pension insurance acts as a catalyst for improving well-being (Zhang et al 2018).

In light of these positive effects on health and well-being on populations, the issue of extending social coverage to uncovered populations—particularly informal workers—emerges as a critical policy priority. This evidence should substantially inform ongoing debates concerning the extension of social protection mechanisms especially, for low-income and vulnerable groups.

3. Methodology

To assess the impact of social security affiliation on health, income, and savings, we applied the Propensity Score Matching (PSM) method. This technique estimate the causal effects by controlling for observable variables that influence the likelihood of receiving the treatment, thereby reducing the selection bias inherent in observational studies.

3.1 Definition of the propensity score

The propensity score represents the conditional probability that an individual receives the treatment, given their observable characteristics. Formally, for an individual i with a vector of covariates X_i, the propensity score $e(X_i)$ is defined as:

$$e(X_i) = P(T_i = 1 \mid X_i)$$

where T_i is a binary variable indicating social security affiliation (1 if affiliated, 0 otherwise).

3.2 Estimation of the propensity score

We estimated $e(X_i)$ using a logistic regression model, with social security affiliation as the dependent variable. The explanatory variables include age, education level, marital status, number of children under 18 in the household, sector of activity, and employment status. The model is specified as follows:

$\text{logit}(e(X_i)) = \beta_0 + \beta_1 \times \text{Age} + \beta_2 \times \text{Education} + \beta_3 \times \text{MaritalStatus} + \beta_4 \times \text{Children} + \beta_5 \times \text{Sector} + \beta_6 \times \text{EmploymentStatus}$.

Where, $logit\ e(X_i) = \ln\left(\frac{e(X_i)}{1-e(X_i)}\right)$

3.3 Matching

After estimating the propensity scores, each individual affiliated with social security was matched to one or more non-affiliated individuals with similar propensity scores. We used the nearest neighbor matching method with a caliper of 0.2, in line with methodological recommendations, to limit acceptable differences between matched scores.

3.4 Evaluation of balance

To evaluate the effectiveness of the matching, we compared the distributions of variables between the treated and untreated groups after matching. Balance was assessed by calculating standardized mean differences (SMD) for each variable, aiming for SMDs below 0.1 to indicate good balance.

3.5 Treatment and matching variables

The treatment variable is social security affiliation. The variables used for matching in the CREAD survey are: age, education level, marital status, number of children under 18 in the household, sector of activity, and professional situation. For the MICS survey, the variables include: age, marital status, education level, individual status, occupational status, and legal sector (public vs. private).

3.6 Outcome variables

The outcome variables analyzed in this study are Health, income and savings. Health is measured through self-reported health status[4], prevalence of chronic diseases, and age at diagnosis. Income corresponds to the individual's reported income level. Savings is dummy variable equal to 1 if the individual reports having savings, and 0 otherwise.

This methodology allows for robust estimation of the causal impact of social security affiliation on the studied outcomes (health, income and savings), while minimizing potential biases due to observed confounding variables.

4. Empirical results

[4] How do you assess your health status compared to population of the same age: 1-Very bad, 2- bad, -3-Medium, 4- good, 5-Excellent.

As previously mentioned, this analysis explores the differential effect of exposure to social security on the outcome variables. In particular, we estimate the Average Treatment Effect (ATE), which measures the average causal effect of the treatment (AFF) on outcomes for the entire population, including both treated and untreated individuals. We also estimate the Average Treatment Effect on the Treated (ATET), which measures the average causal effect of the treatment specifically for individuals who actually received it (affiliated). The ATE answers the question: 'What would be the average change in the outcome variable if the entire population were affiliated with social security compared to a situation where no one was?'. Furthermore, the ATET answers the question: 'What is the average change in the outcome variable for individuals who are affiliated, compared to the hypothetical situation in which they were not?'. This latter estimate focuses solely on the treated group, thus allowing for an assessment of the benefits of social security affiliation for participants.

This distinction is important for policy makers. While the ATET helps assess the benefits of social security for current affiliates, the ATE provides valuable insights into the potential impacts of expanding coverage on the entire population.

4.1 The impact of social security on health

The results of the impact analysis of social security affiliation on health status are presented in Table 1

Table 1. The impact of social security on subjective health status

	propensity-score matching		nearest-neighbor matching	
	(1)	(2)	(3)	(4)
Variables	ATE	ATET	ATE	ATET
r1vs0.AFF	0.181***	0.0859	0.142*	0.102
	(0.0664)	(0.0906)	(0.0756)	(0.0927)
Observations	321	321	321	321

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Source: author's using CREAD's survey.

The propensity score matching (PSM) analysis aimed to estimate the Average Treatment Effect on the Treated (ATET) regarding social security affiliation, controlling for variables such as gender, education, sector of activity, and marital status.

The estimated Average Treatment Effect (ATE) is 0.181 (p=0.007), indicating a positive and statistically significant impact of social security affiliation on health outcomes if coverage were extended to the entire population. However, the Average Treatment Effect (ATET) is not statistically significant, suggesting that the effect of social security affiliation on health outcomes for those already affiliated is inconclusive. While the point estimates (0.0859 and 0.102) suggest that among individuals already affiliated with social security, the effect of this

affiliation may be positive, but the evidence is not strong enough to claim statistical significance. This could mean that, within the treated group, the effect of social security on health is weaker or more heterogeneous, and that further investigation might be necessary to better understand these dynamics. These results may indicate that the benefits of social security affiliation are more evident for those who are not yet covered, and that the coverage for individuals already affiliated might be sufficient, or that other factors are at play in their health status. These findings underscore the need for further and in-depth analysis to identify which subgroups benefit most from social security and to better understand the mechanisms underlying these effects.

To enhance the robustness of our findings, we conducted a complementary analysis using data from the 2019 MICS survey. This analysis assesses the impact of social security affiliation on two health related outcomes: the likelihood of having a chronic disease and the age at which the disease is diagnosed. The treatment variable is defined as whether the individual has a "Chifa card", the outcome variable is whether the individual reports having a chronic disease (a dichotomous variable equal to 1 if the individual reports having a chronic diseases). To control for observable differences between individuals, we include a set of covariates such as age, marital status, individual status (employed, unemployed, out of labor market), sector of activity, and employment status (salaried or self-employed). The table below presents the results of this evaluation using the propensity score matching method.

Table 2. The impact of social security on the probability of having a chronic disease

	propensity-score matching		nearest-neighbor matching	
Variables	ATE	ATET	ATE	ATET
r1vs0.AFF	-0.0505***	-0.0478***	-0.0522***	-0.0504***
	(0.00629)	(0.00855)	(0.00592)	(0.00780)
Observations	28,394	28,394	28,394	28,394

Source: author's using MICS 2019.

Table 2 reports the estimated impact of social security affiliation on the likelihood of having a chronic disease, measured using a binary variable (equal to 1 if the respondent reports a chronic illness, and 0 otherwise). The results show that affiliation to social security is significantly associated with a reduced probability of having a chronic illness. Specifically, the coefficients are negative and statistically significant at the 1% level. Using the propensity score matching method, the average treatment effect (ATE) shows a reduction of 5.05 percentage points, while the average treatment effect on the treated (ATET) indicates a reduction of 4.78 percentage points. These results are consistent across both matching methods used (propensity

score and nearest neighbor), with minimal variations between the ATE and ATET, underscoring the robustness of the results. The consistency of the results and the large number of observations (28,394) enhance their reliability.

These effects can be attributed to the role of social security in improving access to preventive and curative care, thereby reducing the likelihood of developing or reporting a chronic disease. From a policy perspective, these results highlight the importance of expanding social security coverage, particularly to marginalized groups and informal workers, in order to improve public health and reduce the prevalence of chronic diseases.

In addition to lowering the likelihood of chronic illness, social security coverage may also delay the age at which chronic diseases are diagnosed. The MICS survey enables us to test this hypothesis. The table below presents the estimated effect of social security affiliation on the age at which chronic diseases are diagnosed, measured as a continuous outcome variable.

Table 3. The Impact on the Age of Diagnosis of the First Chronic Disease

	propensity-score matching		nearest-neighbor matching	
Variables	ATE	ATET	ATE	ATET
r1vs0.AFF	3.089*	3.938*	1.428	2.096
	(1.866)	(2.282)	(2.109)	(2.586)
Observations	2,423	2,423	2,423	2,423

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1The question on the age at diagnosis of chronic disease was asked only to the subsample of individuals who reported having a chronic disease, which reduced the sample size in both the control and treatment groups.
Source: authors' using MICS 2019.

The results presented in Table 3 show that affiliation with social security seems to have an effect on the age of which chronic diseases are diagnosed, with a delay in this diagnosis observed among affiliated individuals. The ATE estimate, using the propensity score method indicates an average delay of 3.089 years in diagnosis across the entire population, while the ATET estimate for affiliated individuals shows that affiliation could delay the onset of the first chronic disease by 3.938 years. The results obtained using the nearest neighbor matching method are similar, although the measured effect is less statistically significant. These results suggest that affiliation with social security could delay the diagnosis and apparition of chronic diseases, possibly by facilitating access to preventive or follow-up healthcare services.

4.2 Impact of social security on savings

Using the same methodology as previously, the table below presents the results of the evaluation of the impact of social security on savings, both for the entire population and specifically for individuals who are affiliated with social security.

Table 4. Impact of social security on savings

	propensity-score matching		nearest-neighbor matching	
	(1)	(2)	(3)	(4)
Variables	ATE	ATET	ATE	ATET
r1vs0.AFF	-0.139	-0.260	-0.0817	-0.154
	(0.154)	(0.183)	(0.181)	(0.232)
Observations	104	104	104	104

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Source: authors' using CREAD's survey 2014.

Table 4 presents the estimated impact of social security affiliation on the probability of having savings, measured as a binary variable equal to 1 if the individual reports having savings in either local currency (dinars) or foreign currency. The results show negative coefficients for both the ATE and ATET across all specifications, suggesting a potential association between social security affiliation and a lower probability of having savings. However, these effects are not statistically significant, as indicated by the high standard errors, implying that the observed results could be due to random variation. While these results do not allow for definitive conclusions, they highlight a potential negative effect that could be further investigated. One possible explanation could be that affiliation with social security, by providing a financial safety net, may reduce individual's perceived need to save. Another hypothesis is that social security contributions reduce their disposable income, thereby limiting their ability to save. Additional data and analyses are needed to confirm these trends.

4.3 The impact of social security on income

Let's now move on to the analysis of the impact of social security affiliation on the respondents' income. The results of this estimation are presented in Table 5.

Table 5. The impact of social security on income

	propensity-score matching		nearest-neighbor matching	
	(1)	(2)	(3)	(4)
Variables	ATE	ATET	ATE	ATET
r1vs0.AFF	0.358***	0.379**	0.461***	0.477***
	(0.114)	(0.154)	(0.117)	(0.152)
Observations	321	321	321	321

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Source: authors' using CREAD's survey 2014

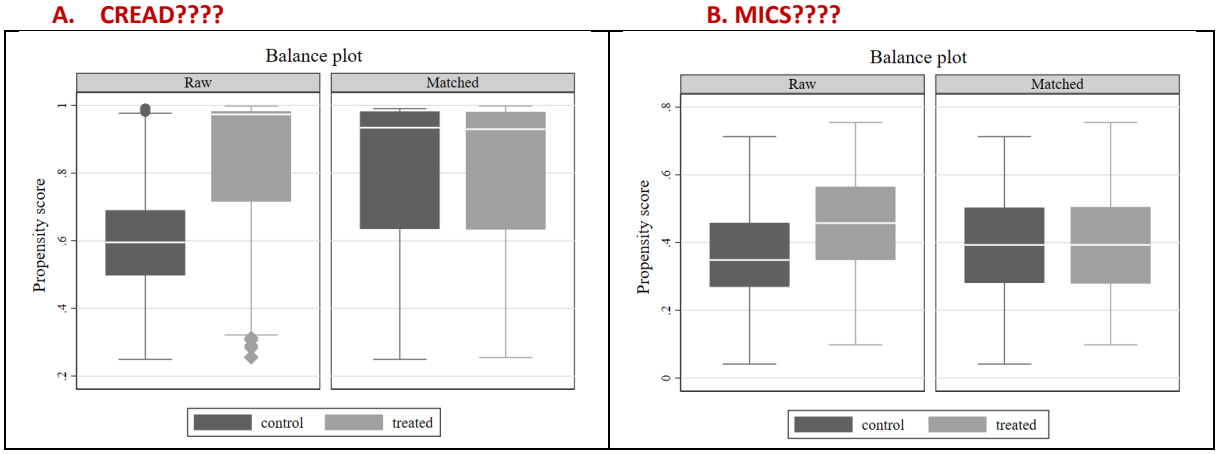
The results shows a positive and statistically significant effect of social security affiliation on income. The average treatment effect (ATE), which measures the average impact for the entire population (both affiliated and non-affiliated individuals), is estimated at 0.358 using the PSM method and 0.461 using the nearest neighbor method, and the effects are statistically significant. These results suggest that social security affiliation is associated with an increase

in income level across the general population. Moreover, the average treatment effect on the treated (ATET), which reflects the impact only on affiliated individuals, is also positive and significant, with coefficients of 0.379 (PSM) and 0.477 (nearest neighbors). These results indicates that affiliated individuals with social security benefit from a significant increase in their income compared to what it would have been without this affiliation. These results are statistically significant, most at the 1% level, which strengthens the robustness of these conclusions. Overall, these findings suggest that social security affiliation contributes to enhanced financial stability or improved economic opportunities, potentially through increased job security, access to benefits, or other forms of institutional support.

4.4 Evaluation of the balance

Finally, to test the robustness of the matching, we will illustrate the propensity scores of the treated and control groups before and after matching in Figure 1.

Figure 1. Robustness of the matching



Source : authors' calculation based on CREAD Survey 2014 and MICS6 (2019).

Figure 1 compares the distribution of propensity scores for the treated and control groups before (Raw) and after (Matched) matching. In the raw data, the distributions differ noticeably between the treated group (light gray) and the control group (dark gray), indicating an initial imbalance in observable characteristics. In the matched data, the distributions of propensity scores for both groups are more aligned, with similar medians and interquartile ranges, suggesting that matching improved the balance between the groups. This improvement in balance allows attributing the observed differences in outcomes more to the treatment effect than to pre-existing differences between the covariates.

5. Conclusion

This paper aimed to estimate the causal effect of social security affiliation on individual's well-being, measured through three key dimensions: health status, income, and savings. The analysis employed a robust econometric method and used two complementary sources of microeconomic data. The results indicate that social security affiliation has a positive and statistically significant effect on both individuals' health and income. However, no conclusive evidence was found regarding its impact on savings.

In conclusion, these findings provide empirical support for promoting social security affiliation as a means to enhance population well-being, particular through improved health outcomes and increased income. Awareness campaigns could be organized to demonstrate how this affiliation contributes to improved living conditions. It would also be relevant to design social security schemes specifically adapted to informal workers, with flexible contributions arrangement aligned with their income levels and contribution capacity. These schemes could include financial incentives, such as initial subsidies or free trial periods, to facilitate their transition to the formal sector and improve their access to social security.

Moreover, it is essential to strengthen social dialogue by actively involving informal workers in the design and supervision of social protection schemes. This participatory approach would ensure that the proposed solutions truly meet their needs and would encourage their enrollment.

Finally, to strengthen the positive impact of social security affiliation on individuals' health and income, it is essential to improve the quality of the services offered. This could be achieved by reducing the list of non-reimbursable medications, in order to reduce the financial burden on the insured. Additionally, reimbursing care provided in the private sector would allow patients to freely choose their healthcare providers, thus improving both access to and the quality of care. Eliminating reference pricing, which limit reimbursements at fixed amounts, would ensure a more equitable coverage of healthcare expenses, particularly for costly treatments. These measures would help strengthen citizens' trust in the social security system and encourage broader adherence, particularly among informal workers. It is important to continuously evaluate the effectiveness of social security schemes using key indicators such as health, income and beneficiary satisfaction in order to adapt them to evolving needs and to respond promptly to any shortcomings, especially during economic or health crises.

This study presents certain limitations, particularly regarding the representativeness of the sample used, which may constrain the generalization of the results. Future research could build on broader datasets to enrich these findings.

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