

Research article

Social assistance and workers' long-term well-being in Egypt

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Abstract: Does social assistance tailored to augmenting workers' budgets or nurturing their human capital improve workers' lot several years down the road? In Egypt, how have the recipients fared compared to non-recipients, and has the financial versus in-kind form of assistance mattered? We contribute to existing welfare-economic literature by examining the impacts of several complementary social assistance programs on individuals' long-term welfare using Egyptian microdata. Multinomial logistic regression applied to the 2018 wave of the Labor Market Panel Survey, supplemented with evidence from the 2012 wave, shed light on the impacts of public-funded vocational training, health insurance and financial support on households' precariousness of living. Ex-beneficiaries of public-funded vocational training and health insurance are found to reach a less precarious state in terms of better food security and higher job satisfaction than non-beneficiaries. By contrast, recipients of financial assistance are not necessarily better off in the long term than non-recipients. Human capital investments thus appear to have lasting positive impacts on the well-being of workers and their families, while financial transfers have fleeting immediate effects, partly by design, and perhaps because they crowd out private investments or induce behavioral changes due to the associated eligibility criteria and endowment effects.

Keywords: food security; job satisfaction; social assistance; human capital; vocational training; health insurance; Egypt

JEL Codes: I38, N35, P36

1. Motivation

General financial assistance, such as indirect subsidies, have been the dominant form of social assistance in the Arab region. Such subsidies are often regressive, meaning that the less poor benefit more from them than the extreme poor. General subsidies also tend to represent a greater burden on countries' gross domestic product than more narrowly targeted interventions. Many Arab countries have thus started to transition away from general subsidies, scaling them down or replacing them by more targeted forms of social assistance, including in-kind transfers and labor market support. Labor market policies represent an important dimension of public assistance programs and social safety nets, and they are becoming an integral pillar of countries' strategies toward equitable and sustainable development.

In response to the economic instability and contractions of the past decade, Arab states have increased the magnitude of public support and expanded its coverage to a greater share of their respective populations. Arab countries have also implemented more sophisticated targeting methods for identifying beneficiaries, such as proxy means tests and social registries of the present as well as prospective beneficiaries.

In light of these regional tendencies and the worldwide emphasis on ramping up social assistance amid crises, this study aims to evaluate the impact of several forms of social assistance programs on the socioeconomic outcomes of beneficiaries. Beside conditional and unconditional financial assistance, we assess workers' benefits from participating in labor market support schemes including public-funded vocational training and health insurance.

The evidence from labor market surveys offers an opportunity to carefully assess workers' exposure to alternative public programs and the impacts on workers' living conditions and labor market outcomes. The role of workers' preexisting conditions and status, their eligibility for treatment, self-reported interest in being selected, actual participation and the degree of exposure may oftentimes be evaluated, too. Survey microdata enable policymakers to assess the relative role of public versus non-public labor market support, as experienced by various demographic groups, and in relation to workers' various outcomes. At the level of individual workers, the analysis can shed light on how exposure to various programs facilitates workers' transitions from pre-existing conditions to their up-to-date labor market status occurring across demographic divides such as different wealth groups and genders, youth versus non-youth, urban versus rural or skilled versus unskilled workers.

This study contributes to existing welfare-economic literature by examining the role of several complementary social assistance programs, namely workers' participation in public-funded vocational training, public-funded health insurance and various financial support schemes, in addressing employment status and deprivation among workers particularly their perceived job satisfaction and food security. We control for the impact of individuals' preexisting human capital and demographic circumstances. In one supplementary analysis, we specifically assess workers' transition from unsatisfactory to satisfactory jobs. We use data from two waves of nationally representative, high-quality, harmonized panel surveys for Egypt that measure individuals' circumstances, track the socioeconomic outcomes of the same individuals over time, and also link outcomes of individuals to those of their parents. To the best of our knowledge, this is one of a handful of studies examining the impact of social assistance programs on individuals' long-term welfare using Egyptian microdata.

Tracking the socioeconomic status of workers over time provides information on how deprivations get transmitted over time, as well as the implications for social mobility and long-term

vulnerabilities economy-wide, where human vulnerabilities cover “the prospects of eroding people’s capabilities and choices” (UNDP, 2014). Results of our analysis of the perceptions of food security and job satisfaction will suggest what it takes to escape vulnerability or transition to a “decent job” if you start your life in a vulnerable state. Our findings also underline the importance of initial household circumstances in determining lifetime opportunities and point to the strong persistence of intergenerational misery. Our findings will help to guide policy recommendations regarding the targeting of vulnerable groups using specific policy interventions.

The remainder of this paper is organized as follows. Section 2 briefly reviews relevant literature, Section 3 introduces the data sources, concept definitions and the empirical approach to isolating the effects of social assistance programs on individuals’ self-reported material deprivation and job satisfaction; this is directly followed by the presentation of their results in Section 4. Section 5 concludes with the discussion of policy implications.

2. Literature review

The existing studies of the role of social assistance in the MENA region have largely focused on specific policy areas, such as fiscal transfers, health coverage or access to education, and their direct association with households’ observed outcomes. These streams of literature are reviewed next.

On the one hand, the nexus of households’ nutrition, health and economic outcomes in Egypt and the rest of the MENA region has received great attention in recent years (Sieverding and Hassan, 2021, and studies cited therein), not least because of the multifaceted ramifications of the COVID pandemic. The overarching finding is that a large and increasing share of Egyptian, and by extension MENA region, workers are without social security coverage (Jawad et al., 2019) and will not receive pensions in their old age. The poor have limited access to health insurance, and thus seek little preventive care and are more likely to pay for emergency treatments out of their pocket (World Bank, 2019). Even among beneficiaries, the assistance is typically of limited magnitude and quality. For example, financial assistance is inadequate to meet households’ costs of living (Selwaness and Messkoub, 2019).

On the side of education policy, skill acquisition at school and access to vocational training have been identified as key challenges of youths for landing decent jobs (Biltagy, 2019). Formal education is known to have at most ‘sheep-skin’ effects on workers’ career prospects, while job-related skills are more fruitfully acquired through private-funded vocational training and apprenticeships (El-Hamidi, 2006; Krafft, 2013). Private formal education does not resolve the skills gap, as institutional and community objectives drive a wedge between skills demanded by employers and those nurtured in schools (Ramy and Abdella, 2020). As a result, the observed return to formal education is estimated to be low by global standards and to interact with workers’ innate characteristics in ways that the most needy and rural workers stand to benefit the least (Nosier et al., 2022). Education advocates have thus called for reforms of the public schooling system, and for public interventions to enhance industry-academic cooperation and public-supported lifelong vocational learning.

For completeness, a growing body of literature has used Labor Market Panel Survey (LMPS) microdata and multinomial probabilistic regression to examine workers’ outcomes across various policy regimes in the region. For example, Assaad et al. (2014) studied the occupational distribution of all workers in Jordan 2010, Assaad and Krafft (2014) studied school-to-work career transitions in Egypt in 2012, AlAzzawi and Hlasny (2020, 2022) studied employment vulnerability of the two genders and of youth and non-youth workers and Dibeh et al. (2019b) distinguished different modalities of irregular migration.

This study makes an original contribution to these strands of empirical literature by examining the impacts of multiple complementary social assistance programs simultaneously, and by emphasizing individuals' long-term welfare and labor market outcomes, all the while relying on the same well-established methods (multinomial probability models) and data (panels in Egyptian LMPS microdata). These instruments are discussed next.

3. Methods and data

The proliferation of household surveys across selected Arab countries over the past decade has given rise to nationally representative micro-level evidence on workers' uptake of (or reasons for not taking up) various social assistance programs, and their up-to-date working and living conditions. LMPSs also screen workers' demographics, socioeconomic endowments and choices during their career paths.

There is a chronic need across the MENA region to assess how workers' exposure to various social assistance programs affects their socioeconomic outcomes, while considering workers' pre-existing circumstances and characteristics. Evidence tailored to vulnerable groups such as women, youth or the rural poor is particularly needed. Several issues complicate the estimation. First, the timeline between program participation and economic outcomes is unclear theoretically. Second, the effect of program participation may be confounded by workers' simultaneous exposure to other programs, or by their selection for treatment based on their concurrent situation and expectations. In this study, to facilitate measurement of the one-way direct impact, program participation in a year is linked to outcomes observed with a delay of six years. Hence, social assistance received and captured in the survey in 2012 is linked to workers' outcomes reported as of 2018. Beside public-funded assistance, the analysis controls for workers' participation in self-funded or employer-funded schemes.

3.1. Multinomial regressions

To investigate the impact of several social assistance programs and workers' various other experiences on their perceived food security and job satisfaction, we estimate the multinomial logistic regressions of workers' categorical responses regarding their self-reported degree of material deprivation or job satisfaction. This method has been validated in previous research on workers' socioeconomic outcomes in the Arab region (refer to Section II). The contribution of this study is the establishment of a link between workers' self-perceived material well-being in a year to their past exposure and public-funded vocational training and health insurance, as well as a handful of financial assistance programs.

The multinomial logistic regressions estimated using multiple linked waves of LMPSs allow us to estimate the state or changes in workers' living conditions as a function of their exposure to social assistance programs, mitigating the potential endogeneity of workers' circumstances or other experiences by using their backgrounds from previous survey waves.

Multinomial logistic regressions estimate the probability that an individual will attain a particular value of a categorical dependent variable ($\Pr(y = j), j \in J$), in our case, the ordinal perceived degree of food deprivation or job satisfaction, relative to the probability of an *a priori* baseline condition, which, here, is the preferred state of never experiencing severe food deprivation or (moderate) vulnerability to it, or being fully satisfied with one's job. The regression takes values of explanatory

variables (x), estimates j -outcome specific coefficients on those explanatory variables (β_j) using maximum likelihood and calculates the probabilities of all possible outcomes:

$$\Pr(y = j) = \frac{\exp(\beta_j x)}{\sum_{k \in J} \exp(\beta_k x)} \quad (1)$$

In this expression, individual-specific subscripts are omitted for clarity of presentation. The outcome with the highest estimated probability of occurring for an individual is classified as the worker's predicted outcome. Workers' propensity to report the alternative perceptions of their food security (job satisfaction, respectively) is made a function of their 1) reception of social assistance (public-funded vocational training or health insurance, or financial support from several alternative sources); 2) vulnerable group designation (fe/male and urban/rural indicators); 3) human capital status (potential work experience, $age-17$; potential experience squared; education completion of level k ; private-funded vocational training); and 4) other individual and household demographics (marital status, household composition and administrative region r). Specifically, in equation 1 we estimate the following:

$$\begin{aligned} \beta_j x = & \beta_0 + \beta_1 public\ voc.\ training + \beta_2 public\ health\ ins. + \sum_k \beta_k support_k \\ & + \beta_3 private\ voc.\ training + \beta_4 private\ health\ ins. + \sum_l \beta_l edu_l + \beta_5 age + \beta_6 age^2 \\ & + \beta_7 male + \beta_8 wealth + \beta_9 urban + \sum_r \beta_r region_r + \beta_{10} married + \beta_{11} HH\ size \end{aligned} \quad (2)$$

where individual-level subscripts are again omitted. In this study, coefficients β_1 and β_2 are of special policy interest. In a supplementary analysis where data allow it, that is, in the models of job satisfaction, lagged dependent variable is added among the regressors as $\sum_s \beta_s job\ satisfaction_s$ to help control for workers' pre-existing status. Coefficients β_1 and β_2 in this specification can be interpreted as the effects of policy interventions on workers' transition from their pre-existing condition.

3.2. Data

Data used in this study came from the Egyptian LMPSs, administered by the national statistical office CAPMAS, in partnership with the Economic Research Forum (ERF) and harmonized by the ERF. They are highly suitable for examining the impacts of social assistance programs on individual-level living and working conditions.¹ These surveys track the same workers and their experiences and outcomes over the span of 6, 12 or more years between survey waves. In each wave, the surveys screen workers' participation in social assistance programs (conditional/unconditional cash/in-kind transfers, vocational training, access to health insurance, liability deferrals, etc.). The LMPSs also include recall modules that screen workers' backgrounds, including parents' history, supplementing the information on workers' own status across multiple survey waves.

¹ LMPSs are presently available for Egypt (1988, 1998, 2006, 2012, 2018), Jordan (2010, 2016) and Tunisia (2014). Refer to: <https://erf.org.eg/labor-market-panel-surveys-lmps/>. The sixth wave of the Egyptian LMPS is forthcoming in 2023.

For the present analysis, workers' outcomes were taken from the year-2018 wave of the Egyptian LMPS, while their exposure to social assistance was taken from the year-2012 wave.² We restricted the sample to individuals appearing in both waves, ignoring issues due to selective attrition or secular changes to workforce composition. This yielded a sample of 9,329 individuals with a full set of non-missing variables for analysis.

Three alternative measures of perceived well-being are used as the dependent variables under evaluation: First, responses to the question "In the past 4 weeks, was there ever no food to eat of any kind in your household? How often?" were used as the measure of nutritional or severe deprivation, since the affordability of food broadly defined is an inherent and key component of the definition of extreme poverty. This indicator has the ordinal categorical responses "Never" (baseline option), "Rarely (once or twice in the past four weeks)" or "Sometimes or often (more than three times)."

Second, responses to the question "In the past 4 weeks, did you worry that your household would not have any food? How often?" were used as the measure of vulnerability to severe deprivation, or moderate deprivation itself, as the chronic risk of plunging into food poverty. The indicator has the ordinal categorical responses "Never" (baseline option), "Rarely (once or twice in the past four weeks)" or "Sometimes or often (more than three times)." Our deprivation indicators reflect the well-established Household Food Insecurity Access Scale, categorizing households on the spectrum from food-secure to severely food-insecure (Coates, 2015).

Third, we used responses to the question "How satisfied are you with your current job?" with responses "Fully satisfied" (baseline option), "Rather satisfied", and the rest of the responses, including "Rather dissatisfied," "Dissatisfied" and no response. Table A.5 reports the descriptive statistics of some socioeconomic outcomes distinguishing workers with different reported perceptions. This table confirms that the perception of deprivation or job dissatisfaction is associated with lower economic (wealth and wage earnings) status.

For the first policy variable of interest, we used the workers' responses to "Did you participate in any training program other than regular education? Who covered most of the cost of the training?" Responses "Public agency," "NGO," "Government," "Charity" and "Ministry of Social Affairs" were classified as public-funded (while "Myself," "My family" and "Employer" were classified as private-funded). These questions were asked only to wage workers employed in formal establishments. This affects the sample delineation for our analysis, and the choice of dependent variables. The sample was limited to formal wage workers, and dependent variables have been limited to those varying among these workers.

For the second policy variable of interest, we used the workers' responses to "What type of health insurance do you have?" Responses "Through the General Agency for Health Insurance," "Through military" and "Through state" were classified as public-provided as long as the worker reported having no medical insurance in his/her primary job. (Responses "Myself," "My family," "Employer" or "Medical insurance in primary job" were classified as private-provided.)

Among the types of financial support, we distinguished pension (of any kind, including normal, sadat's/mubarak's and other), Ministry of Social Solidarity (MOSS) assistance and non-profit/NGO assistance, all in logarithmic terms of the respective monetary amounts and lagged by 6 years (to survey wave 2012). The time lags help the models to capture the one-way effects of public assistance on

² The 2012 panel was made up of 12,060 households and 49,186 individuals (Assaad & Krafft, 2013). The 2018 panel comprised 9,771 households from the 2012 sample, 2,221 new households that emerged from those households as a result of splits, plus a refresher sample. The total for 2018 was 15,746 households and 61,231 individuals.

individual's outcomes without any feedback or simultaneity effects. In any case, the assistance received by individuals in 2012 is associated highly positively with that received in 2018.

In addition to this main specification in Table A.2 (Model 1), for completeness, Model 2 also accounts for individuals' reception of Takaful, Karama, the Food Smart Card or other assistance in 2018 that was not surveyed in 2012, all in logarithmic scale of the respective monetary sums. These additional variables aim to account for other, and more recent, public assistance that may impact individuals' non-transient welfare. Finally, in a supplementary analysis of job satisfaction (Model 3), a lagged dependent variable in a distributed form, i.e., as "Non-satisfied" and "Rather satisfied," was added among the regressors. Descriptive statistics of all variables used are reported in Table A.1.

The coefficients in Tables A.2–A.3, upon exponentiation and subtraction of 1, give the estimated changes in the probability of an outcome relative to the probability of being out of the labor force (i.e., odds or relative risk ratios, $\Pr(j)/\Pr(\text{baseline}) = e^{\beta}$) due to a unit increase in the corresponding explanatory variables. Positive coefficients in Tables A.2–A.3 imply an increase in the probability of an outcome relative to the baseline, while negative coefficients imply a reduction.³ Because all three alternative dependent variables indicate negative outcomes relative to the baseline, while the explanatory variables are all positive characteristics or experiences, we expect all regression coefficients to be negative. This facilitates the formulation of the hypotheses to be evaluated in the following section.

4. Results

Tables A.2–A.3 report the results of the main regressions of individuals' perceived welfare as a function of their prior exposure to various forms of social assistance, as well as their other characteristics and experiences. In the following discussion, we will omit mentioning that the probabilities are relative to the most preferred option (baseline).

4.1. Perceived food insecurity

Table A.2 shows that the individuals' perceived experience of severe food insecurity (the first four columns) and vulnerability to food insecurity (the last four columns) are systematically related to individuals' prior participation in public-funded vocational training and health insurance, and the reception of financial assistance (especially pensions) and individuals' demographics (especially sex, education, household size and wealth). Prior participation in public-funded vocational training lowers the propensity for food insecurity by all measures (in all columns), especially for the case of frequent experience of food insecurity, i.e., columns 2, 4, 6 and 8. Reassuringly, this effect is in the same direction as, and even stronger than, in the case of private-funded vocational training. While the coefficients are individually insignificant, the joint Chi-square tests of the coefficients across the outcome categories suggest that the variable belongs in the model. Public-provided health insurance also has a mitigating effect on food insecurity by all measures, significantly for the case of frequent vulnerability to food insecurity, i.e., columns 6 and 8. (In supplementary models not presented here, the effect of public-funded vocational training gains in significance when health insurance is omitted from the benchmark model, and, vice versa, the significance of health insurance grows when vocational

³ Average marginal effect of x on the probability of an outcome j for an individual i , relative to the probability of the baseline outcome, can be computed as $\partial\pi_{ij}/\partial x_i = \pi_{ij}(\beta_j - \sum_{r \neq j} \pi_{ir}\beta_r)$.

training is omitted, indicating positive association between the two.) In general, we conclude that the social assistance programs targeting workers' health and skills have long-term effects that prevent the most frequent forms of food insecurity from occurring 'sometimes/often' (in even columns).

Financial assistance also appears to mitigate food insecurity overall, significant in the case of pensions, and, consistently, also in the case of NGO assistance. The results are mixed and insignificant in the case of the MOSS assistance and the participation in the Takaful, Karama and Food Smart Card programs.

Fig. A.1 and A.2 illustrate these results in regard to propensity for food insecurity (as severe deprivation; Fig. A.1) and vulnerability to it (as moderate deprivation; Fig. A.2). They show the probability of holding specific perceptions ("Sometimes/oft no food," "Rarely no food," versus baseline "Never") by individuals with different household wealth, distinguishing public-assistance recipients from non-recipients. Panel (i) shows this for beneficiaries of public-funded vocational training versus non-beneficiaries, while panel (ii) shows this for recipients of financial assistance versus non-recipients. The key finding from Fig. A.1 and A.2 is that the propensity for deprivation of all measures falls significantly across wealth deciles. The recipients of public-funded vocational training (panel (i)) have a clearly lower propensity to experience food insecurity than non-recipients, with the effect being the largest for individuals between the 2nd and 6th wealth deciles. The effect is much smaller or unclear among individuals in the bottom decile or in the top four deciles. In distinguishing recipients and non-recipients of financial assistance, the assistance appears to have little effect on food insecurity, with the probabilities for insecurity being at most marginally lower among recipients. Distinguishing public-funded vocational trainees versus non-trainees across different ages reveals similar patterns, and it suggests that the advantage of beneficiaries over non-beneficiaries is the same across all age groups.

The rest of the rows in Table A.2 show that individuals' demographics have, for the most part, the expected effects on food deprivation. Higher education and household wealth are strongly and consistently associated with lower food insecurity. Household size, here apparently proxying for the number of mouths to feed, rather than a number of earners in the household, has a positive effect on food deprivation and vulnerability to it. Individuals' propensity for job insecurity varies across governorates significantly (individual coefficients are reported in Table A.4). Unexpectedly, men are consistently more likely to report perceiving food insecurity than women. This presumably stems from sample selection issues, which is discussed more in the following section. Finally, individuals' potential work experience (age-17), marital status and urban residence (after controlling for the 21 governorates of residence) have a weak or unclear effect on food insecurity. These covariates are retained in the models for consistency with the job satisfaction models in Table A.3.

4.2. *Dissatisfaction with current job*

Table A.3 reports similar trends for individuals' (dis)satisfaction with current job. Having had public-funded vocational training is associated with holding more satisfactory jobs six years later, even more so than with private-funded training. Having benefited from public-provided health insurance has the same beneficial effect on holding more satisfactory jobs in the future. In this case, however, private-provided insurance appears to render stronger benefits for workers' future career outcomes. Likewise, higher education and potential work experience (age-17) are associated with higher job satisfaction. This evidence jointly suggests that investment in workers' human capital has a strong return in terms of allowing workers to be matched to suitable jobs with decent working conditions.

Financial assistance (in the past or present) has a weak effect on workers' current job satisfaction, or is even associated with lower satisfaction. Workers receiving pensions (in 2012) or Takaful (in 2018) are significantly more likely to report lower job satisfaction, perhaps reflecting a selection problem due to the work-related eligibility criteria for receiving these forms of assistance.

Importantly, these results remain unchanged when we control for workers' prior job satisfaction in the year 2012 (columns 5–6 in Table A.3). Adding a lagged dependent variable to a model is a very intrusive procedure that changes the interpretation of the model. The coefficients can be interpreted as contributions of the covariates to the transition of workers from their prior working conditions (non-satisfactory or rather-satisfactory) to their new working conditions, regardless of the level of the starting conditions. The advantage of this procedure is that it alleviates unobserved heterogeneity across workers with different historic or time-invariant profiles, as well as reduces potential selection biases. On the downside, this method typically reduces the explanatory power of contemporaneous covariates, because the level of the dependent variable is essentially controlled out.⁴ Coefficients in columns 5–6, however, appear robust to the transformation, even though the two additional coefficients for the lagged job satisfaction indicators (near bottom of Table A.3) are highly significant. We conclude that our coefficients of interest are robust to the selection and unobserved heterogeneity issues because of our inclusion of a large number of covariates and our narrow delineation of the sample frame.

Fig. A.3 and A.5 illustrate the effects of social assistance on workers' reported current job satisfaction. The propensity for job satisfaction increases with one's wealth, and with age. Beneficiaries of public-funded vocational training (Fig. A.3 panel (i) and Fig. A.5) are significantly more likely to be fully satisfied with their current job than non-beneficiaries, and significantly less likely to be rather satisfied or not satisfied. The gap between beneficiaries and non-beneficiaries diminishes only gradually across wealth deciles, and it is constant across ages. By contrast, recipients of financial assistance (Fig. A.3 panel (ii)) are less likely to be fully satisfied, as likely to be "rather satisfied" and more likely to be non-satisfied, equally across all wealth deciles.

The rest of the rows in Table A.3 show the role of workers' demographics with regard to their job satisfaction. Household wealth is associated with higher job satisfaction among workers, apparently by giving workers an outside option or an opportunity to search for better-fitting jobs. Urban residence (after controlling for governorate), marital status and household size have unclear effects on one's job satisfaction.

In what appears to be as puzzling as in the food-insecurity regressions, women hold better perceptions of their job satisfaction than men. An explanation for this lies in the women's (endogenous) self-selection into the labor force: most women remain in the labor force only if they hold formal public/private sector employment, and very few women retain informal/irregular positions, instead opting to remain out of the labor force. Because our sample is restricted to formally employed workers, for whom all covariates are surveyed, our models cannot comment on the working conditions in the labor force at large. To the extent that the two genders are represented differently in the irregular economy, and outside of the formal labor markets, the gap in working conditions may be greater, smaller or even upturned in the population at large. Moreover, men and women in our sample may not be entirely comparable to one another in their labor market position, despite all of the covariates that we considered, so it would not be appropriate to extrapolate to the average male and female workers.

⁴ It could be controlled out perfectly in the case of first-differencing of the dependent variable.

Finally worth noting is that the models presented in Tables A.2 and A.3 are highly significant according to multiple diagnostic tests, including the joint coefficient significance F-tests on groups of variables and the Wald Chi-squared model tests. McFadden's pseudo-R-squared of 0.15–0.17 can be interpreted as 15–17% proportions of explained variation in the respective dependent variables, which is a decent measure of explained variation in logistic models on unit-record data.

5. Conclusions

This study was motivated by observing the traditional dominance of financial transfers in Arab countries' social assistance policies, as well as the recent focus on transitioning away from general transfers toward social protection and labor market support and their expansion and proper targeting. While financial handouts have been instrumental to reducing acute deprivation, there is a broad-based recognition that governments should adopt a graduation strategy that allows households to permanently transition out of deprivation, which makes social assistance sustainable and handouts less critical for tackling acute privations in the long term. Investing in workers' lifelong human capital should be integral to that strategy.

In light of these considerations, this study aimed to contribute to existing welfare-economic literature by examining the impacts of multiple complementary social assistance programs on individuals' long-term welfare using Egyptian microdata. Multinomial logistic regressions applied to the 2018 wave of the Egyptian LMPS, supplemented with evidence from the 2012 wave, shed light on the impacts of public-funded vocational training, health insurance and financial support on households' precariousness of living in terms of food security and career satisfaction. To the best of our knowledge, this is one of a handful of studies examining the impact of multiple complementary social assistance programs on individuals' long-term welfare and labor market performance in the MENA region.

Our chosen model specifications followed the structure of the Egyptian LMPS. Since the survey questions regarding individuals' acceptance of social assistance were asked only to wage workers in formal establishments, our choice of dependent and explanatory variables was limited to those varying among this group, i.e., in the formal wage worker subsample. We have chosen to assess individuals' perception of their food security and of job satisfaction as proxies for individuals' well-being and their labor market outcomes.

We have found that the ex-beneficiaries of public-funded vocational training and health insurance achieve a less precarious state in terms of food security and higher job satisfaction than non-beneficiaries (training and insurance jointly significant). This result extended to other channels of advancement of workers' human capital, including private-funded vocational training and health insurance, formal education and work experience such as apprenticeships (El-Hamidi, 2006; Krafft, 2013). By contrast, recipients of financial assistance (past or present) are not necessarily better off than non-recipients. We interpret these findings as confirming that investments in human capital have a lasting positive impact on workers and their families. At the same time, financial transfers appear to have, at most, fleeting effects on welfare, perhaps because they may crowd out private investment in the commodities of interest, or because they pose a moral hazard of inducing some counteracting behavioral changes (particularly in the case of conditional transfers).

While we have used high-quality panel data and relied on a robust multinomial estimation approach, our estimations and results have several notable limitations, mostly induced by the data instrument available. Most importantly, relevant measures of household outcomes, such as income or expenditure, objective nutrition and health, and labor market outcomes for those currently not in wage employment,

could not be assessed here. Each worker's level of exposure or benefits from the social assistance programs, in terms of enhanced capabilities in the short and long terms, was also not surveyed adequately or objectively. These data gaps should be overcome to provide accurate figures regarding the effectiveness of the various programs in the various dimensions of individuals' functioning.

These limitations notwithstanding, we offer policymakers robust recommendations in several specific policy areas. The key advice emanating from the analysis is that the government should bolster social assistance empowering workers and residents, especially the socially vulnerable ones, and enhancing their human capital and other forms of intransient capabilities. These can empower workers and their families to improve their own condition across various socioeconomic spheres, such as the job quality and nutrition evaluated in this study.

A further implication of these findings is that access to vocational training, health and social insurance and other labor market assistance should be further developed and expanded in coverage to the 'working poor' and the non-formally and irregularly employed to reduce the burden of economic informality and address the problem of the 'missing middle' of the population that is excluded from narrowly targeted transfer programs. This is important particularly today, as many informal workers and their families have lost their steady stream of earnings amid recent crises. Expansion of benefits should be synchronized with the eligibility criteria for social assistance to avoid the perpetuation of the 'missingness,' and to avoid the moral hazard of individuals choosing their preferred type of misery in order to maximize their long-term welfare status. Broadly speaking, the mutual compatibility of contributory and non-contributory social protection systems should be ensured.

Conflict of interest

The author declares no conflicts of interest in this paper.

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