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ARTICLE

Financial capability and employment outcomes of young work seekers in South Africa: Findings from a mediation analysis

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Abstract

Financial capability and asset-building interventions have long been overlooked as a mechanism for improving employability and employment outcomes. Previous research has established a positive link between participation by young work seekers in youth employment programmes (YEPs) and employment outcomes post-training. These programmes include soft skills training, job matching, and/or financial capability. Little is known about the mechanisms by which financial capability interventions achieve this effect. This article investigates this question through mediation analyses of a longitudinal sample of young work seekers in YEPs from disadvantaged backgrounds. It finds that financial capability training combined with a stipend significantly improves the odds of employment, primarily through strong direct effects that are not fully captured by our mediation analyses. However, pathways are heterogeneous and time-dependent. For the most food-insecure participants, there is a clear mediation pathway: cash and financial literacy increase reported active saving practices, which in turn significantly improve employment. Conversely, for the same group, achieving basic economic stability was negatively associated with employment, suggesting cash may reduce pressure to accept precarious employment. But these positive effects dissipate up to two years after exiting training, at which point only job matching and having been trained in a metropolitan area predict employment. More research is required to understand how financial capability and cash improve employment odds for young people. Regardless, there is strong evidence to suggest that they are effective, at least in the short term, and that multi-component labour market and social protection interventions are needed that combine training and financial capability with focused efforts to address the structural challenges young work seekers face.

Keywords: Youth unemployment, Youth employment programmes, Financial capability, Social protection, Active labour market programmes

1. Introduction

Unemployment, and particularly youth unemployment, has been a consistent challenge in South Africa since democracy. The current youth (15 – 34 years) unemployment rate stands at 45.5% (Statistics South Africa, 2024). In response, multiple stakeholders across the state, civil society and the

private sector have implemented interventions to promote employment. These range from demand side interventions such as tax incentives to employ youth and the expansion of public employment programmes, to a range of supply side interventions such as skills training initiatives. Many of these interventions draw on evidence of what works in active labour market policies globally.

Although financial capability and asset building (FCAB) interventions have been assessed in various settings as mechanisms to reduce poverty and improve a range of outcomes amongst low-income households, they tend not to be viewed as an active labour market policy globally. First introduced by Sherraden (1991) in the United States, FCAB interventions have been extensively tested in diverse contexts. FCAB interventions vary widely and are often context specific, but are premised on the idea that if low-income households have access to financial assets (in the form of cash, savings or other assets) and the knowledge to leverage the assets, as well as access to the institutions and systems to manage the assets, they will be able to use the assets to enhance household wellbeing.

Evidence on FCAB-promoting interventions in the United States demonstrates that they are associated with future orientation. Several studies have shown that they shift perceptions about ability to attend college (Destin & Oyserman, 2009) and one study found that one such intervention was a significant predictor of college enrolment (Elliott & Friedline, 2013). FCAB interventions have also been tested in developing country contexts with young people. Chowa et al. (2013) found that participation in an FCAB savings intervention was associated with better school outcomes. This relationship was mediated by the higher expectations that parents developed for their children in the programme. Similar findings have emerged in Ghana, Nepal, Colombia and Kenya, where FCAB interventions were run as part of the YouthSAVE programme (Johnson et al., 2013).

Despite these promising results, FCAB interventions have largely been overlooked in labour market policy circles. This may well be because very few FCAB intervention studies have considered employability or employment outcomes. Yet FCAB interventions seem to be important in the context of unemployment for several reasons. Financial standing and access to financial resources both contribute to unemployment in several ways. In a review of research in the United States, financial education and facilitated access to financial products offered as part of an employment services package for low-income adults helped them better manage precarious financial positions, thereby promoting job retention (Treskon et al., 2021). In addition, credit checks on potential employees can act as a barrier for low-income work seekers, highlighting the importance of avoiding bad credit records through improved financial literacy (ibid). In South Africa, work search costs have been shown to be incredibly high for low-income households, often necessitating painful trade-offs between commitments to job search and putting food on the table, as are the (chiefly transport-related) costs of staying in a job for the first few weeks before regular salary payments are received (Youth Capital, 2022).

Finally, in South Africa, during the COVID-19 pandemic, temporary, unconditional cash transfers for unemployed persons were introduced reaching 60% of young work seekers. The Social Relief of Distress Grant (SRDG) has been renewed annually between 2020 and 2025. It was not conceived as a FCAB intervention, instead being a traditional social assistance programme expanded to a very new group of beneficiaries (unemployed adults – whom prior to 2020 were not explicitly targeted by social protection programmes). It is interesting from a policy perspective because it is the first opportunity to assess the extent to which the provision of financial support (one component of FCAB) is associated with finding employment. It was found to be significantly associated with an improved probability of employment, with this effect slowly dissipating as the duration of receipt of the grant approached a year (Bhorat et al., 2023). This is despite the small size of the grant (ranging from R350 to R370 since inception).

Given these challenges, and the success of the SRDG, FCAB interventions may be a valuable addition to labour market interventions intended to reduce unemployment. There is a need, however, to assess the efficacy of such interventions. To determine whether such interventions could improve

employability and employment outcomes, an FCAB intervention was implemented within eight existing youth employability programmes (YEPs) operating across South Africa. Using a quasi-experimental research design with 1,976 participants who were randomised into receiving a traditional training package with or without the addition of a FCAB intervention, we were able to ascertain whether the addition of this FCAB intervention improved their employment probability up to two years after training ended. The study found that the FCAB intervention did improve the odds of employment (Khan et al., 2024). In this article, an analysis of how the FCAB intervention might have produced or influenced this outcome is presented using mediation analysis to determine the pathways through which the FCAB intervention worked. At the end of the article, the implications of the findings for active labour market programmes and social protection policy to improve employment outcomes for young job seekers in South Africa are discussed.

2. Literature review

Financial capabilities were first introduced as a mechanism to improve the outcomes of low-income households in the United States by Sherraden (1991). Initially the concept focused primarily on building financial knowledge, promoting savings as a form of asset building, strengthening resilience, making investments in education and to mitigate income shocks. Later however, the notion of financial capabilities was developed further to focus on both financial knowledge as well as access to institutions and mechanisms through which to exercise that knowledge. This conceptual shift reflected the commonalities of many FCAB interventions that were being tested in the late 1990s and early 2000s, all of which included a component of financial knowledge building and the opportunity to exercise that knowledge usually via gaining access to a savings account. In some instances, access to the account was also combined with an initial deposit and/or matched savings commitments.

FCAB interventions were positioned largely as an alternative or complement to cash transfer programmes in the United States. As Sherraden (2016) outlines, the FCAB approach is an alternative "social policy that goes beyond simple income maintenance to foster individual initiative and self-sufficiency. It argues for an asset-based policy that would create a system of saving incentives through individual development accounts". The fact that FCAB has been developed as a social policy rather than a labour market policy may explain its focus to some extent. Although the approach has not been widely evaluated as a labour market policy instrument, FCAB interventions have been shown to generate a wide range of positive benefits for low-income households, both in the United States and across various developing country contexts. The bulk of evidence demonstrates that it has led to positively incentivising ongoing savings behaviour which in turn contributes to larger assets in the form of savings, as well as tangible assets (Kim et al., 2017; Huang et al., 2022; Lee et al., 2017; Friedline et al., 2013; Johnson et al., 2013; Chowa et al., 2013). These findings alone should be sufficient to consider FCAB interventions as important labour market policy instruments since unemployment is strongly associated with limited income.

Several studies demonstrate how lack of income increases barriers to work search, employability and employment. For instance, low-income work seekers often live further away from economic opportunities and therefore spend more on searching for and getting to work. In South Africa for instance, studies have estimated the monthly costs of work seeking to outstrip the food poverty line (Youth Capital, 2022). Some evidence demonstrates how the financial and non-economic costs of working are too high for low-income workers to sustain going to work, particularly where such work is low waged (Zizzamia, 2020). As such, interventions that can promote financial stability and savings accumulation seem to be important labour market interventions.

In addition, FCAB interventions have been shown to have positive effects on both schooling completion and college access (Ansong et al., 2015; Chowa et al., 2013; Elliott & Friedline, 2013). School completion and further education are, in turn, strongly associated with improved employment outcomes, particularly in the South African context (Branson et al., 2019). Again therefore, FCAB

interventions seem to be important labour market policy instruments.

Yet, to date, very little research has sought to understand how FCAB interventions influence employability and employment outcomes. FCAB interventions have been conceptually hypothesised to have some effects on Sustainable Development Goal (SDG) 8: Decent Work as is shown in the adapted FCAB conceptual framework presented by Ansong et al. (2023). In this framework they theorise that financial inclusion, financial literacy and asset accumulation will in turn lead to financial stability and security with predicted outcomes for decent work and livelihoods, amongst other outcomes. Treskon et al. (2021) make the case for financial capability interventions to be included in employability programmes for many of the reasons provided above – that they can promote greater financial stability that in turn addresses some of the barriers that low-income work seekers face in the labour market. In their review on whether and how employment and training programmes were integrating financial capability interventions, they found that while there were efforts to incorporate financial capability programmes, there was almost no evidence of how such additional components were affecting employment outcomes. A later study explored participant perceptions of financial capability interventions combined with employment skills training interventions they were participating in. The study points to how the participants valued the training. However, this particular study did not assess whether the training had any effects on employability or employment (Patnaik & Perales, 2024).

Thus far, only one study has been identified that assesses the effects of a FCAB intervention that was offered to participants in a youth employment programme in South Africa (Khan et al., 2024). The study involved implementing a financial literacy module and the offer of a savings account into existing YEPs in South Africa. The financial capability intervention was delivered at randomly selected sites across the participating YEPs. Using a quasi-experimental approach, the study found that several programme elements contributed to improved employment odds, one being the inclusion of the financial capability intervention.

Given the potential of FCAB interventions to address some of the structural and personal barriers to employment faced by low-income work seekers, better understanding whether and how such programmes operate is crucial. It is this gap in the literature that this article addresses.

3. Conceptual Framework

The article draws on the work of Sherraden (1991) and that of Ansong et al. (2023) to focus on how a financial capability intervention might shape employment outcomes, with specific reference to the mediating role of changes in FCAB- related factors, like savings and economic security. However, we also theorise that young people do not enter youth employability programs without their own assets and experiences, which also influence their outcomes. We therefore draw on positive youth development theorists (Catalano et al., 2002, 2004; Pittman et al., 2003) and include personal and interpersonal assets into the conceptual model. Finally, drawing on literature about programmatic aspects of YEPs that influence employability outcomes (Kluve et al., 2019) we include YEP elements into the conceptual framing.

Figure 1 below depicts the conceptual framework used to guide the study implementation and analysis.

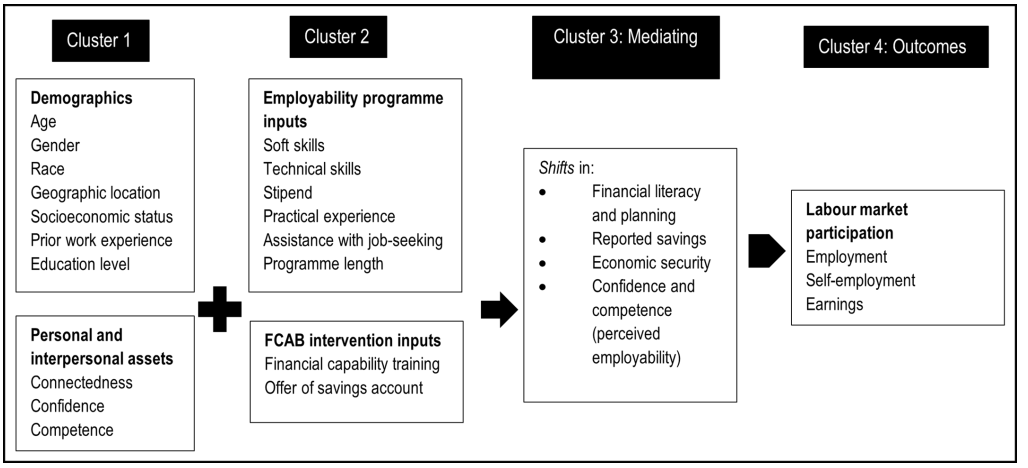

Figure 1. Conceptual framework

Cluster 1 variables include demographic factors as well as personal and interpersonal aspects (drawn from positive youth development theory) that are most likely to influence employment outcomes in the South African context. The latter aspects include connectedness (social capital and networks), confidence, and competence. These are psychosocial factors that are measured in the study. Cluster 2 involves the programme features – both YEP features (length of programme, ratio of soft to technical skills training, inclusion of a stipend) and the financial capability intervention. Cluster 3 involves the mediating factors that may shape the outcomes. Drawing on the FCAB research from developing country contexts and elsewhere (Elliot et al., 2011; Chowa et al., 2012; Chowa et al., 2013), we hypothesized that the FCAB intervention would shift sense of belief in one's own competence, financial literacy, savings behaviour, and economic security. Cluster 4 are the outcomes relating to labour market participation that are ultimately shifted – chiefly employment, which is the outcome of interest in this paper, and self-employment and earnings, addressed in previous work arising from this project.

4. Methodology

4.1 Study design

This study is part of a larger programme of work that investigates the effectiveness of youth employability programmes (YEPs). YEPs offer skills training to unemployed young people that is aimed at enhancing their ability to find a job in South Africa's dysfunctional labour market. This programme of work sought to understand how effective a subset of eight of these YEPs are - whether (1) run as they always have been, or (2) supplemented by the addition of a financial capability component (an eight-hour financial literacy training module plus the offer of a bank account). To be eligible to participate in the study, the YEP needed to (a) provide a mix of soft skills training (such as teamwork, promoting self-esteem and self-efficacy, time management, communication skills) and offering free of charge technical skills training (for example, skills for specific competences like call centre training; welding; retail and hospitality) to people aged 18–35 from disadvantaged backgrounds; and (b) offering training at a minimum of two sites with a duration of between one month and a year.

The effectiveness of the eight YEPs that satisfied these criteria was evaluated by tracking a group of participants longitudinally, and administering a survey to them at four different time points:

wave 1 (just before starting training at one of the eight YEPs with the first participants starting in January 2015); wave 2 (on the completion of training); wave 3 (one year after completion) and wave 4 (two years after completion, with the final interviews conducted in April 2018). The extensive survey covered educational and labour market histories; individual and household asset ownership; psychosocial attributes (such as self-esteem and self-efficacy); and attitudes and practices relating to saving and budgeting. Informed consent forms were signed by each participant and contained information about the voluntary nature of participation, the ability to withdraw this participation at any point, and the research team's commitment to handling and storing data confidentially and securely.

In Table 1 we show a breakdown of the participating YEPs according to their various combinations of programme features. Soft and technical skills have been noted previously; 'work experience' refers to on-the-job training; and 'matching' refers to staff working with potential employers during programme design to tailor training to employers' needs and to participants' aptitudes.

Table 1. Summary of Programme Characteristics

Programme	Soft Skills	Technical Skills	Work Experience	Matching	Duration	Stipend
1	4 weeks	Not core focus	None	No	2 months	No
2	≤1 week	Core focus: information technology and programming	Yes	Yes	12 months	Yes
3	5 weeks	Not core focus	None	No	1.5 months	No
4	≤1 week	Core focus: call centre training	None	Yes	0.25 months and 2 months	Yes
5	3 weeks	Not core focus	Yes	No	12 months	Yes
6	≤1 week	Core focus: welding, construction, plumbing	Yes	No	12 months	Yes
7	≤1 week	Core focus: entrepreneurship	None	No	6 months	No
8	2 weeks	Core focus: welding, plumbing, electrical	None	No	3 months	No

To evaluate the effectiveness of the YEPs, individual labour market outcomes were tracked over time and assessed against the specific package of services that the relevant YEP provided, along the dimensions outlined in Table 1.

In addition, whether the financial capability component provided any additional benefit to work seekers was assessed through a cluster randomised controlled trial. The requirement that YEPs offer training at least at two sites enabled the randomisation of the financial capability intervention between treatment and control sites of the same YEP, such that the services offered at a given pair was identical except for the addition of financial capability. Sites were operationally independent and geographically separate, which prevented spillover and contamination effects.

As discussed in the literature review, previous work by this research team showed that where individuals similar on observable characteristics were trained at sites randomised to provide the financial capability intervention, the odds of employment were significantly better (on average ten percentage points) than those trained at control sites. The aim of this paper is to uncover the mechanisms by which this effect takes place.

4.2 Mediation analysis

Mediation analysis was chosen to identify these mechanisms. Mediation analysis seeks to explain the relationship between an independent variable and a dependent variable by introducing a third variable, or 'mediator' into the analysis (MacKinnon et al., 2007). It is especially useful in longitudinal analyses because it potentially permits the identification of an intervening variable between time point a and b that illuminates a pathway along which an effect occurs.

To conduct the analysis, generalised structural equation model (GSEM) tools (Cain, 2021) were deployed using statistical software package Stata (StataCorp LLC, 2023). GSEM is a versatile framework for analysing complex relationships among variables. It is appropriate for mediation analysis because it allows the simultaneous estimation of direct, indirect, and total effects, capturing the pathways through which an independent variable or treatment affects an outcome variable via one or more mediators. GSEM specifies a series of equations that describe the relationships among variables, with flexibility in modelling dependent variables of various types (that is, variables with different distributions and link functions – true in this case as described in the 'mediators' section below), using maximum likelihood estimation.

4.3 Independent variable

Financial capability (FC) is a four-level, categorical independent variable, and describes the package of services relating to FC received at different training sites by work seekers. It refers to a combination of financial literacy imparted through financial education workshops, coupled with the means to enact that knowledge through access to financial services and products (Johnson & Sherraden, 2007). Separate from the randomised FC intervention, some YEPs provided stipends to trainees. This yielded an opportunity to analyse four treatments: (1) no stipend, no FC; (2) stipend, no FC; (3) no stipend, FC; and (4) stipend, FC.

4.4 Mediators

As described above, the literature is scant on whether and how FC (into which trainees were randomised at wave 1) affects the odds of employment (the dependent variable, measured at waves 3 and 4). Below, five candidate mediators and their measurement are described. The five mediators were selected based on what is known about their potential relationships with employment from the small evidence base and from logical reasoning. All candidate mediators are measured at wave 2 – an intermediate point in work seekers' labour market trajectories after all training had been completed. To control for differences at baseline (wave 1) between treatment groups in the values of the mediators (see Table 3 in the 'description of study participants' section), in each case we use the change in the value of the mediator between wave 1 and wave 2 as the mediator variable.

Economic security. Economic strain and the struggle to meet basic needs characterise low-income households in South Africa. Financial capability and the provision of stipends may alleviate this pressure. Two distinct but connected aspects of economic security are thus identified as potential mediators, measured at the individual and household level. The first is the ability to meet basic needs, measured by a yes/no response to the question: "Do you ever run short of money for food or other necessities?" The first mediator is therefore whether or not someone moves from being unable to meet these basic needs to being able to do so. The second is household food insecurity, measured by the household food insecurity access scale (HFIAS) (Coates et al., 2007), where responses to a set of nine questions are used to categorise respondents' households as food secure, or mildly, moderately or severely food insecure (a four-level, ordinal variable). The second economic mediator is therefore whether or not someone moves from a higher level of food insecurity to a lower level (which includes those moving from being food insecure to food secure).

Perceived employability is measured using the employability attributes scale, a self-administered, six-point Likert-scaled instrument validated with South African undergraduates (Potgieter et al.,

2012). It defines and measures eight individual attributes as important in improving the likelihood of finding and keeping work. Five of these constructs are used to measure perceived employability in the sample of unemployed work seekers, namely:

- Career self-management: the ability to continually learn about how to advance in a chosen career path and to take appropriate steps to do so.
- Career resilience: the ability to adapt to changing circumstances and to be flexible in the face of change.
- Sociability: the ability to build networks of people who can advance one's career or help to find new job opportunities.
- Entrepreneurial orientation: refers to being generally open to new opportunities and ideas
- Proactivity: taking the initiative in identifying opportunities and acting on them.

The average of the responses to these questions at waves 1 and 2 were calculated. The difference between these values, as a continuous variable ranging from one to six, with six indicating the maximum, was also established, and used as our third mediator.

Saving behaviour measures individuals' propensity to save using three six-point Likert-scaled questions: "I try to save money for the future"; "I try to save money regularly, even if it is only a little"; and "I always try to make some provision for emergencies or unexpected expenses". We treat the average of these responses at waves 1 and 2 and the difference between them as a continuous variable ranging from one to six, with six indicating a very strong orientation to saving.

Finally, financial planning is measured with a composite score ranging from 0 to 5, with one point attached to each affirmative answer to the following questions:

- When you receive money, do you plan how it will be used?
- Mostly, do you plan exactly or only make a rough plan? (1 point if "Exact")
- Do you keep to the plan you make for using your money?
- Do you know how much money you spent personally in the last week?
- Do you know how much you have available for day-to-day spending at the last moment?

The resulting, continuously scaled score (0-5) reflects the respondent's level of financial planning, with higher scores indicating more systematic and precise financial planning practices.

4.5 Control variables

The first set of control variables are alternative programme features (that is, alternative treatments to the FC intervention with and without stipends). These are (1) whether the programme offered job matching services to participants; (2) the time spent on soft skills training (all programmes offered training in communication skills, time management, teamwork, and building self-esteem and self-efficacy) and (3) the duration of the programme in months. Matching has been found to be associated with more successful labour market interventions (Mckenzie, 2017; Arthur-Mensah & Alagaraja, 2018; Fox & Kaul, 2018), while soft skills training is hypothesised as important for building agency and general problem-solving skills, especially for young people from disadvantaged backgrounds facing a difficult labour market. This in turn is presumed to lead to greater resilience and employability (De Lannoy et al., 2018; ILO, 2020). Finally, the effect of longer programmes is uncertain. They could on the one hand be useful in imparting more skills on a sustained basis but may on the other hand also keep impoverished work seekers out of the job market for an unnecessarily long time.

The second set of control variables included in the GSEM are sex, education level, being in a metropolitan area, and age (demographic features all known to be significantly associated with employment prospects in South Africa), and whether the work seeker had ever worked prior to enrolment in training.

These controls are included only in the direct equations modelling the relationship between the independent variable (the four-level financial capability treatment) and the dependent variable, which is whether the trainee has been able to find work after having been trained (at either wave 3 or 4). This is due to the theoretical and empirical justifications for relationships between these controls and employment that do not necessarily exist for the relationship between the controls and the mediators. Moreover, this approach avoids over-parameterisation in the GSEM model and unnecessary complication in estimation and interpretation.

Multicollinearity was calculated using Variance Inflation Factors (VIFs), which measure the degree of correlation between the predictors (mediators and controls). VIF values above 10 are commonly regarded as indicating potential multicollinearity (Kutner et al., 2005). In this analysis, the VIF values for all predictors were below 3.5, with a mean value of 1.54, suggesting that multicollinearity is not a concern.

Table 2. Summary of Variables Used in Regression Analyses

Variable Name	Category	Level of Measurement	Sources (Measurement)
Financial Capability (FC)	Independent	Categorical (4 levels)	Random assignment to (1) No Stipend, No FC; (2) Stipend, No FC; (3) No Stipend, FC; (4) Stipend, FC
Ability to meet basic needs (change)	Mediator	Binary	Change from 'Yes' to 'No' (from wave 1 to wave 2) in response to: "Do you ever run short of money for food or other necessities?"
Household food insecurity (change)	Mediator	Binary	Change to a lower level of food insecurity (from wave 1 to wave 2) as per the Household Food Insecurity Access Scale (HFIAS) categories (Coates et al., 2007).
Perceived employability (change)	Mediator	Continuous	Change (from wave 1 to wave 2) in the total average score on the Employability Attributes Scale (Potgieter et al., 2012), comprising five sub-scales measured on a 6-point Likert scale: Career Self-Management, Career Resilience, Sociability, Entrepreneurial Orientation, and Proactivity (range: -3.94 to +4.86).
Saving behaviour (change)	Mediator	Continuous	Change (from wave 1 to wave 2) in the average score on three 6-point Likert scale items: "I try to save money for the future"; "I try to save money regularly..."; "I always try to make some provision for emergencies..." (range: -5 to +5)
Financial planning (change)	Mediator	Continuous	Change (from wave 1 to wave 2) in a composite score (0-5) based on five questions regarding money management and budgeting (range: -5 to +5).
Participation in YEP offering job matching services	Control	Binary	Programme records
Log duration of soft skills training offered	Control	Continuous	Programme records
Log programme duration	Control	Continuous	Programme records
Sex	Control	Binary	Survey question
Education level	Control	Ordinal (4 levels)	Imputed from survey questions about school attendance and qualifications (categories: incomplete secondary; matric; certificate or diploma; undergraduate degree or higher)
Metropolitan area	Control	Binary	Administrative data
Age	Control	Continuous	Imputed from date of birth and date of interview questions
Prior work experience	Control	Binary	Imputed from battery of questions asked of each respondent about labour market participation (paid, unpaid, volunteering) prior to YEP enrolment
Employment status	Outcome	Binary	Response to survey item "Are you currently working?" (Yes/No), measured at waves 3 and 4

4.6 Subgroup analysis

As supplementary analyses, we estimated our main mediation model on three subsamples: those below the food poverty line; those tracked in the shorter term at wave 3 (up to a year post-training); and those tracked in the longer term at wave 4 (up to two years post-training). The food poverty line we use is the official 2015 value (roughly coinciding with our first wave of data collection) of R441 per person per month (Statistics South Africa, 2022), under which approximately half of our participants at baseline fall. People in this condition face a severe level of income deprivation where they cannot afford to purchase enough food to meet their minimum required daily energy intake. We discuss these analyses in the 'Findings' section, with regression output shown in the appendices (Tables 6–8).

4.7 Description of study participants

In Table 3, descriptive statistics are shown for the sample using wave 1 values of the mediators and various demographic factors. Most work seekers report having run short for money for basic needs (ranging from 60% – 70%), and live in households that can be characterised as being in moderate levels of food insecurity (the mean 'category' is roughly 3.1, recalling that 4 is the maximum level of food insecurity – severe). In terms of perceived employability and reported savings practices, average values are high at baseline, considering the maximum of six points for these variables, ranging from 4.5–4.7 and 4.2– 4.5 respectively across the control and three treatment groups. Reported financial planning is also quite high at baseline, ranging from 2.5 to 2.9 (given a maximum value of five). These differences are statistically significant (using Anova tests and chi-square tests for continuous and categorical variables respectively) for the ability to meet basic needs ($p<0.1$); savings behaviours; and financial planning ($p<0.05$). As noted above, to control for these differences in the mediation model, changes in the values of all mediators between waves 1 and 2 are used as the final mediator variables.

There is also variation along demographic factors at baseline between the treatment groups. Control group participants are significantly more likely to have work experience prior to entering a YEP at wave 1 ($p<0.05$). There is also significant variation by age, education category ($p<0.05$), and having been trained at a site in a metropolitan area ($p<0.01$). Given these differences and their expected associations with employment regardless, we include these as control variables in the final mediation model.

Table 3. Description of study participants

Treatment	Ever run short for basic needs*	HFIAS scale	Financial planning score**	Saving score**	Employ-ability scale	Female	Work experience prior to wave 1**	Metro site***	Education category**	Age***
1: No FC, no stipend										
Mean	0.685	3.26	2.9	4.348	4.597	0.631	0.615	0.885	2.33	24.176
Std. Dev.	0.466	1.057	1.400	1.396	0.846	0.484	0.488	0.320	0.724	30.998
2: Stipend, no FC										
Mean	0.625	3.031	2.929	4.532	4.708	0.622	0.506	0.634	2.496	23.468
Std. Dev.	0.484	1.116	1.412	1.426	0.904	0.485	0.500	0.482	0.737	30.305
3: FC, no stipend										
Mean	0.644	3.079	2.644	4.264	4.619	0.605	0.591	1	2.398	22.674
Std. Dev.	0.480	1.105	1.476	1.299	0.760	0.490	0.493	0	0.717	3.378
4: FC, stipend										
Mean	0.601	3.086	2.814	4.441	4.642	0.614	0.516	0.482	2.432	23.025
Std. Dev.	0.489	1.077	1.387	1.396	0.853	0.487	0.500	0.500	0.719	3.155

4.8 Attrition

One of the advantages of the dataset is its longitudinal nature, which lends itself to mediation analyses that assess how treatments allocated at wave 1, influence mediating variables at wave 2, and then lead to employment (or not) in the shorter (wave 3) and longer term (wave 4). However, attrition is a substantial limitation. Between waves 1 and 2, dropout is approximately 50%. Difficulties with reinterviewing participants after they had completed their training programmes were due to phone numbers changing and survey fatigue. This remaining sample was then tracked unevenly at waves 3 and 4, with many dropouts at wave 2 returning for the latter two waves.

To maximise the sample size for the mediation analyses, the primary mediation model uses data from waves three and four, with non-missing data at wave 2. This results in an effective sample of 659 individuals who have employment data at wave 3 or 4 and non-missing data at wave 2. Testing of differences in demographic variables between remaining and attriting participants shows that those who attrited were more likely to be male; to have been trained in a metro; and to be more food secure. The inclusion of these variables as controls therefore mitigates bias introduced by dropout as well as by pre-treatment differences between groups. Nonetheless, the extent of missing data due to dropout significantly limits the validity, statistical power, and robustness of the mediation analysis, potentially biasing estimates of treatment and mediation effects.

To further limit the threats to the validity of our analysis that attrition introduces, we therefore conducted a series of sensitivity analyses using multiple imputation to assess the potential for bias from unobserved confounding. We implemented a two-stage multiple imputation procedure across 20 datasets. First, we imputed the missing employment outcome under two extreme scenarios: an optimistic scenario, where attritors had the same employment probability (43.3%) as the most successful observed demographic subgroup (men with tertiary education in metro areas), and a pessimistic scenario, where attritors had the employment probability (18.5%) of the least successful subgroup (women without tertiary education in non-metro areas). This approach tests the potential impact of non-random attrition on our results, under scenarios where those who dropped out had employment prospects that were systematically different, based on unobserved factors. Subsequently, we used chained equations to impute missing values for the mediating variables, using the imputed employment outcomes and all model covariates as predictors, using the approach of van Buuren (2018). Finally, we re-estimated our primary GSEM model on each set of imputed data.

As shown in Table 9 in the Appendix, the results from these analyses were substantively unchanged from our primary model. The direction, significance, and relative magnitude of the key treatment effects on employment and the mediating pathways remained consistent, even under extreme assumptions about the outcomes of attritors.

To further test the robustness of the mediation analysis to missing data, we adjusted the values of the mediators themselves in the imputed datasets, randomly shifting them positively and negatively by the equivalent of 10% for binary measures and 0.5 standard deviations for continuous measures. The findings regarding the significance (or lack thereof) of the mediating pathways proved robust to these manipulations, as shown in Table 10 in the Appendix.

Taken together, these analyses suggest that the core findings of our study—which we turn to in the next section – are not artifacts of selective attrition or measurement error in the mediators.

5. Findings

5.1 Financial capability and employment

Table 4 shows a significant, positive bivariate association using a Chi-squared test between financial capability (FC) and later employment ($p<0.05$). Rates of employment post-training rise incrementally as we move up to higher levels of treatment. Financial capability complemented by stipends seems to be the most useful treatment.

Table 4. Bivariate association between stipends and financial capability and later employment

Treatment	Not working at wave 3/4	Working at wave 3/4	Total
No stipend, no FC (n)	125	48	173
%	72.25	27.75	100
Stipend, no FC (n)	291	113	404
%	72.03	27.97	100
No stipend, FC (n)	95	53	148
%	64.19	35.81	100
Stipend, FC (n)	337	191	528
%	63.83	36.17	100
Total	848	405	1,253
%	67.68	32.32	100

5.2 Findings of the mediation model

The results are presented below of the mediation model using the four-level FC treatment as the independent variable and the binary variable – working at either wave 3 or 4 - as the dependent variable. Standard errors are clustered at the YEP level (recall there are eight participating YEPs in this study) to account for potential dependence of observations among work seekers receiving the same package of services and offered by the same organisation.

Table 5. GSEM of the relationship between financial capability and employment using mediation analysis

VARIABLES	Now able to (odds ratio) meet basic needs	Become less (odds ratio) food insecure	Become better at financial planning	Become a more active saver	Perceived to be more employable	Employed (odds ratio)
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment (base category: none/control)						
Stipend, no FC	1.796***	1.569***	0.299	0.0970	0.0678	1.029
	(0.311)	(0.274)	(0.163)	(0.153)	(0.0919)	(0.391)
No stipend, FC	2.297***	1.436	-0.105	0.00890	0.000820	1.602***
	(0.711)	(0.407)	(0.183)	(0.170)	(0.103)	(0.259)
Stipend, FC	2.070***	1.200	0.174	0.103	0.156*	1.389***
	(0.144)	(0.274)	(0.155)	(0.145)	(0.0870)	(0.114)
Able to meet basic needs						0.802
						(0.171)
Less food insecure						1.346
						(0.325)
Better at financial planning						0.872
						(0.091)
Become a more active saver						1.054
						(0.050)
Become more employable						0.940
						(0.071)
Received job matching						2.768**
						(0.567)
Log duration soft skills training (weeks)						1.237
						(0.213)
Log programme duration (months)						0.912
						(0.077)
Female						0.735*
						(0.121)
Has prior work experience						0.959
						(0.306)
Trained at a metro site						1.910***
						(0.430)
Matric						0.865
						(0.340)
Certificate or diploma						0.931
						(0.279)
Degree or higher						0.704
						(0.411)
Age						1.000
						(0.034)

Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

These results are presented graphically below in Figure 2:

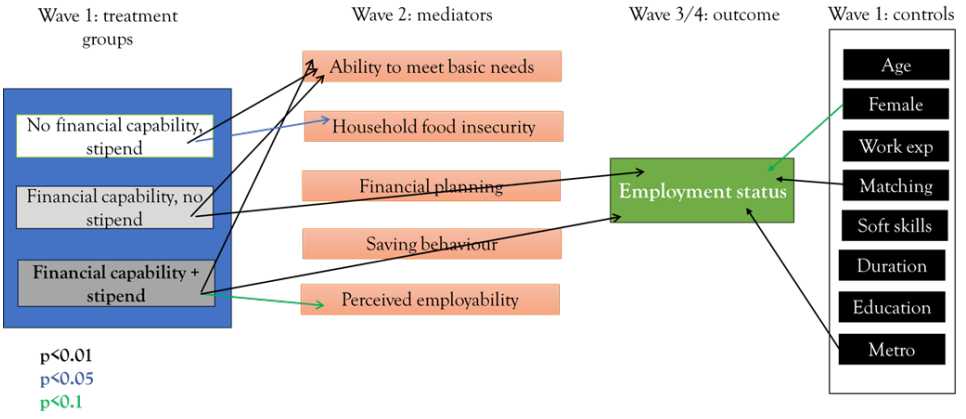

Figure 2. Graphical representation of the relationship between financial capability and employment using mediation analysis, wave 3 and wave 4

The FC intervention – specifically financial literacy with or without stipends (treatments 3 and 4) improved the odds of employment for YEP participants. However, the pathways to this success appear to be more complex than the simple mediated chains suggested by our conceptual framework. The most striking finding is the strength of the direct effects of these treatments. Even after controlling for an extensive set of potential mediators and covariates, they retain large and statistically significant impacts on employment. The FC intervention therefore seems to have worked through powerful channels not fully captured by our measured mediators. We did find evidence that it achieved intermediate effects, in significantly reducing economic distress (being able to meet basic needs – all treatments) and food insecurity (stipends only). The effect on reducing economic distress remains even when financial literacy is provided without cash transfers, suggesting that financial literacy training is useful on its own in helping young people manage their finances in a way that potentially frees up resources for job search.

However, these improvements in economic well-being do not statistically explain the gains in employment in the full sample – there are no mediation effects flowing from reduced economic distress and food insecurity to employment. Similarly, changes in self-perceived employability, financial planning, and savings played no significant mediating role in changing participants' labour market prospects.

This combination of strong direct effects and the lack of mediation could be due to a variety of reasons. Firstly, there could be unmeasured psychological channels that improved, leading to employment. Additional models (not shown here) testing the mediation effects of possible alternatives, namely changes in self-efficacy and future orientation, were similarly unpredictive of employment. Unmeasured factors such as changes in anxiety or other aspects of emotional wellbeing could have improved mental bandwidth for job search, leading to employment. Secondly, the financial literacy component could have built capabilities that we have also not measured, in terms of knowing how to optimise job search by spending less on it, or by focusing on more realistic opportunities.

Finally, control variables with a significant relationship to employment include having received job matching as part of one's package of services, and having been trained in a metropolitan area.

Turning to the subgroup analysis of participants below the food poverty line (Table 6 in the appendix), a two-stage mechanism – and a full mediated chain – becomes apparent. First, all three treatments have large, significant effects on employment, especially stipends alone (treatment 2), followed by stipends plus financial literacy (treatment 4). The size of these effects is substantially

larger than for the group of participants as a whole – for example, the poorest participants that received stipends were over six times as likely to be employed up to two years post-training compared to the control group, all else equal. At the same time, the treatments improve economic stability (ability to meet basic needs and food security) in similar ways (in terms of effect size and direction) as for the whole sample. However, in terms of indirect effects of these mediators on employment, an improved ability to meet basic needs is negatively related to employment: those who improve their immediate economic stability are about half as likely to be employed as those who do not.

Our speculation regarding this apparent contradiction is that the much larger direct effect of receiving a cash transfer on employment is driven by a reduction of liquidity constraints that obstructs job search for young South Africans. Perhaps being able to afford transportation costs, clothes for interviews, mobile airtime, and internet costs reduced anxiety, together creating a period of stability which made job search more practically and mentally feasible. Financial literacy on top of the cash (treatments 3 and 4) might have had similar (though smaller) effects. This applies even to financial literacy without any cash (treatment 3), which – as in the full sample - could be helping participants manage existing scarcity better. The smaller, negative indirect effect on employment of becoming able to meet basic needs could be explained by reduced economic pressure on the newly stable to immediately find a job. Instead, these very poor participants could be using cash to meet other needs they perceive to be more fundamental, such as food, healthcare and paying off debt (and we do know anecdotally that many participants in these YEPs were heavily indebted). This could reduce the desperation to find a job that participants feel, compared to those still in financial distress. Similarly, greater financial security could have allowed them to exit precarious informal work or survivalist activity – which they might previously have classified as employment and pursued - to search for better opportunities.

Nonetheless, the cash injection simultaneously provides the tools with which to expand job search and – with financial literacy – make it more effective. And this larger effect implies that the net effect of giving cash to the poorest participants is overwhelmingly positive for employment.

A far more intuitive result, and one that is consistent with our conceptual model, relates to saving. Financial literacy plus cash (treatment 4) has a strong effect on becoming a more active saver, which in turn has a positive and significant effect on employment. Stipends thus provide a means to save, and financial literacy the skills and motivation to do so. Either component on their own is insufficient to change savings behaviour. And this ability to save and build a buffer—during the period of relative stability that the treatment provided - provided the tool that allowed participants to convert short-term relief into successful job search outcomes in a full mediated pathway. The combination of cash and financial literacy may have thus helped participants focus explicitly on and budget for job search, as opposed to trying to satisfy various other urgent needs at the same time.

Next, we ran the GSEM model using only wave 3 outcome data (one year after training) and using only wave 4 outcome data (employment two years after training)(Tables 7 and 8 in the Appendix). In the wave 3 sample, financial literacy plus stipend (treatment 4) as well as stipend without financial literacy (treatment 2) retain a strong association with employment in the short term, while financial literacy without a stipend does not have a direct effect on employment in the short term. This suggests that financial skills training without capital to put those skills to work on does not influence employment.

Regarding mediation, two direct effects from the mediators to employment are discerned. First, improved financial planning is significantly associated with employment in the short term, but there is no direct effect of the treatments on this mediator. However, we tested whether the receipt of a stipend - that is, being in either treatment two with a stipend and without financial literacy, or in treatment four, with a stipend and financial literacy – leads to changes in financial planning practices between wave 1 and 2. Jointly, receiving a stipend in one of the two treatments is associated with changes in financial planning ($p<0.05$). A possible interpretation is that stipends provide work seekers

with resources adequate to put better financial planning into practice, even in the absence of financial literacy training, with the subsequent effect on short-term employment perhaps due to optimised job search strategies.

Finally, financial literacy plus stipend leads to positive change in perceived employability by the end of training at wave 2, but then goes on to negatively influence the odds of being employed up to a year post-training. This is a strange finding which we can only explain though speculation. Improved perceptions of their value in the labour market, and being better able to navigate that market, could have caused trainees to raise their expectations – a distinct, unmeasured construct – possibly leading to them misjudging their prospects. We also cannot discount the possibility of measurement error, where work seekers may have been propelled by social desirability bias to answer questions in a way that would indicate they had 'learned' from training, rather than in a way that was an honest reflection of their actual attitudes and behaviours. Finally, our conceptual model may have conceived of the temporal effects of the mediators inaccurately. For example, a boost in perceived employability by the end of training may well have faded by the time the YEP graduates had been in the labour market for some time.

Relatedly, in the wave 4 sample, the only significant relationships with employment are job matching and having been trained in a metro area. This suggests that in the longer term, any positive effects of financial literacy and stipends fade, reflecting the observation of Bhorat et al. (2023) about the short-term gains of the social relief of distress grant. Job matching is also very important in the longer term. Cash thus appears to provide a short-term boost, but the direct connection to an employer leads to sustained employment. There are also no mediation effects in the longer term. The odds of employment seem to be driven not by changes in personal mindsets or circumstances, but due to having secured a foothold in the labour market.

6. Conclusion and policy implications

This study sought to explain how FC interventions lead to better employment outcomes for young, disadvantaged work seekers enrolled in YEPs in South Africa. Based on our conceptual model, we expected that the interventions would improve economic security, financial literacy and planning, reported savings, and competence and confidence (perceived employability), with these changes then positively influencing the odds of being employed up to two years after exiting training. Our mediation analysis confirms some parts of this conceptual model, but reveals that the pathways from participation in YEPs to employment are complex, heterogeneous, and change over time. With this in mind, we offer the following insights for policymaking.

First, in the short term, cash transfers to the unemployed appear to be extremely effective. For example, for those below the food poverty line, a basic stipend made them over six times as likely to gain employment as those not receiving any FC intervention. This is probably due to these transfers overcoming liquidity constraints that prevent job search, facilitating expenditure on transportation, airtime, or clothing for interviews. It bears emphasising that less than half of the participants in our sample could be classified as being food secure. Hunger is widespread in South Africa, even among subpopulations that benefit from social assistance, such as children (Khan & Patel, 2024). Food insecurity has been linked with sexual risk taking (Masa et al., 2018), poor mental health (Pourmotabbed et al., 2020), and recent job loss (Mabli et al., 2023). Failure at policy level to address it in young adults seems an especially dire gap in South Africa's social protection system.

Secondly, financial literacy training alone shows no significant benefits in the short term, suggesting that knowledge without capital is insufficient to make a difference in participants' labour market trajectories. However, when combined with cash, this combination of treatments led to increasing savings, and in turn better employment chances, for the most vulnerable.

Thirdly, the significant positive effects of the treatments dissipate after two years. Cash transfers provide a powerful but possibly not sustainable boost, helping participants find work in the short term

but not necessarily transforming into longer term employability in South Africa's underperforming, stagnant economy. Finally, although FC interventions have only short-term effects, job matching remains a strong, significant predictor of employment, through optimising the fit between and connecting job seekers and employers (see also Khan et al., 2024).

The absence of complete mediation pathways – except, critically, through improved saving and a worse or unchanged ability to meet basic needs for those below the food poverty line - suggests that the treatments may influence employment through alternative, unmeasured pathways. These could include reduced anxiety and debt and improved emotional wellbeing; more networking opportunities as a result of enrolling in a YEP; or a greater ability to navigate frictions in the labour market, such as search costs and discrimination (for example, through being able to better present oneself at an interview). Job search costs are excessive for the majority of low-income South Africans (Zizzamia, 2020; Youth Capital, 2022), reflecting the reality that socioeconomic status remains a powerful determinant of employment for young people (Baldry, 2016). Cash injections may also represent an opportunity for young work seekers to meet other needs perceived to be more immediately urgent, which divert attention from job search. They could also reduce the desperation among work seekers to take any job, possibly allowing for more strategic search. Future (particularly qualitative) research should explore these causal pathways.

Our findings perhaps challenge a fundamental premise of typically supply-focussed YEPs. This premise is that for many young people, especially those from vulnerable backgrounds, their secondary schooling - even if completed - is not of sufficient quality to make them appealing candidates for potential employers. This skills deficit is the most frequently cited cause of large-scale youth unemployment in South Africa. YEPs focused exclusively on training to overcome this deficit tend to individualise the problem of unemployment. Our findings show that this is possibly short-sighted. South Africa's exceptionally unequal economy, still characterised by the structural exclusion of the majority from economic opportunity, systematically constrains labour market prospects. Any analysis of job seeking must account for this reality.

Based on this evidence, we propose that YEPs integrate three core components: (1) direct economic support through cash transfers to overcome liquidity constraints; (2) financial capability to convert those resources into productive assets like savings; and (3) robust job matching services to ensure long-term labour market attachment. This multi-pronged approach would supplement skills training with interventions to tackle the financial and structural barriers to employment that young people face. We do not see the transient effects of FC as an argument against scaling up such interventions. A short-term cash injection could be a cost-effective investment if it successfully launches a young person into formal employment, at the same time that it is combined with YEP programming to tackle structural causes of unemployment. Beyond the value of this to the individual, it would also improve tax revenues and reduce reliance on other social grants. The goal would therefore be to provide temporary, targeted cash relief and financial literacy training to unlock individual productive potential, with job matching ensuring that transitions into employment are durable.

The biggest limitation of our study was the substantial attrition of participants. We have attempted to mitigate the potential bias that this attrition introduces by controlling for factors associated with dropout probability in regression analyses, generating data through multiple imputation on which to rerun our regressions, and randomly adjusting the values in imputed datasets before rerunning analyses. These supplementary analyses did not change the results of our main model. We do acknowledge however the remaining potential for bias inherent in the unknown nature of the missing data mechanism and our not accounting for (unlikely) extremes in their potential distribution (such as all missing observations being employed). A second limitation relates to the sample itself. It is a sample of young adults enrolled in YEPs that is likely not representative of the general youth population in South Africa, both on observable characteristics (for example, despite a good geographical spread

across the country, our sample is in general more educated) and on unobservable characteristics. It is conceivable that those who look for information about training programmes and put the effort into applying and enrolling are more motivated or more self-efficacious on average, which leads to a common problem of identification in empirical studies of training programmes (Athey & Imbens, 2017). This possibly reduces the generalisability of our findings and recommendations to the population of young South Africans that have enrolled in or received some form of post-secondary skills training in a YEP; a population that is perhaps, despite their vulnerability, not the most vulnerable group in the labour market. Thirdly, we have not accounted for general economic conditions during the study period and their potential influence on the results.

In closing, we call for multi-component labour market programming that integrates financial capability and asset building – a set of interventions more commonly associated with social protection. This programming should combine short-term economic support with the building of longer-term connections to the labour market. While financial literacy training and cash provide a transient boost, it is direct employer connections through job matching that secure sustainable employment.

References

Ansong, D., Chowa, G. A., & Sherraden, M. (2015). Household assets, academic expectations, and academic performance among Ghanaian junior high school students: Investigating mediation. *Children and Youth Services Review*, 50, 101–110. https://doi.org/10.1016/j.childyouth.2015.01.016.

Ansong, D., Okumu, M., Huang, J., Sun, S., Huseynli, A., Koomson, I., Chowa, G., Ssewamala, F., S. Sherraden, M., & Sherraden, M. (2023). Financial capability and asset building: Innovations in social protection and development. In L. Patel, S. Plagerson, & I. Chinyoka (Eds.), *Handbook on Social Protection and Social Development in the Global South* (pp. 308–330). Edward Elgar Publishing. https://doi.org/10.4337/9781800378421.00033.

Athey, S. and Imbens, G. W. (2017). The state of applied econometrics: Causality and policy evaluation. *Journal of Economic Perspectives*, 31(2), 3-32.

Baldry, K. (2016). Graduate unemployment in South Africa: Social inequality reproduced. *Journal of Education and Work*, 29(7), 788–812. https://doi.org/10.1080/13639080.2015.1066928.

Bhorat, H., Köhler, T., & de Villiers, D. (2023). Can Cash Transfers to the Unemployed Support Economic Activity? Evidence from South Africa. *Éditions AFD*. https://shs.cairn.info/journal-afd-research-papers-2023-278-page-1?lang=en.

Borghi, E.; Casanovas, C.; Onyango, A. (2014). WHA global nutrition targets 2025 (Stunting policy brief). Geneva, World Health Organization.

Branson, N., Culligan, S., & Tonini, S. (2019). What and where you study matters in the labour market. Southern Africa Labour and Development Research Unit. https://opensaldru.uct.ac.za/handle/11090/999.

Cain, M. (2021). Structural Equation Modeling using Stata. *Journal of Behavioral Data Science*. https://doi.org/10.35566/jbds/v1n2/p7.

Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2004). Positive Youth Development in the United States: Research Findings on Evaluations of Positive Youth Development Programs. *The ANNALS of the American Academy of Political and Social Science*, 591(1), 98–124. https://doi.org/10.1177/0002716203260102.

Catalano, R. F., Hawkins, J. D., Berglund, M. L., Pollard, J. A., & Arthur, M. W. (2002). Prevention science and positive youth development: Competitive or cooperative frameworks? *Journal of Adolescent Health*, 31(6), 230–239. https://doi.org/10.1016/S1054-139X(02)00496-2.

Chowa, G. A., Masa, R. D., & Sherraden, M. (2012). Wealth Effects of an Asset-Building Intervention Among Rural Households in Sub-Saharan Africa. *Journal of the Society for Social Work and Research*, 3(4), 329–345. https://doi.org/10.5243/jsswr.2012.20.

Chowa, G. A. N., Masa, R. D., Wretman, C. J., & Ansong, D. (2013). The impact of household possessions on youth's academic achievement in the Ghana Youthsave experiment: A propensity score analysis. *Economics of Education Review*, 33, 69–81. https://doi.org/10.1016/j.econedurev.2012.08.005.

Destin, M., & Oyserman, D. (2009). From Assets to School Outcomes: How Finances Shape Children's Perceived Possibilities and Intentions. *Psychological Science*, 20(4), 414–418. https://doi.org/10.1111/j.1467-9280.2009.02309.x.

Elliott III, W. C.-H. (2011). Reducing the College Progress Gap between Low- to Moderate-income (LMI) and High-income (HI) Young Adults: Assets as an Understudied Form of Economic Capital. https://doi.org/10.7936/K7XW4JB6.

Elliott, W., & Friedline, T. (2013). "You pay your share, we'll pay our share": The college cost burden and the role of race, income, and college assets. *Economics of Education Review*, 33, 134–153. https://doi.org/10.1016/j.econedurev.2012.10.001.

Horton, S. (2017). "Economics of nutritional interventions", in S. Pee, D. Taren and M. Bloem (eds), *Nutrition and health in a developing world*. Totowa, Humana Press.

Johnson, E., & Sherraden, M. S. (2007). From Financial Literacy to Financial Capability Among Youth. *The Journal of Sociology & Social Welfare*, 34(3). https://doi.org/10.15453/0191-5096.3276.

Johnson, L., Lee, Y. S., Sherraden, M., Chowa, G., Ansong, D., Ssewamala, F., Sherraden, M., Zou, L., Njenga, M., Kieyah, J., Osei-Akoto, I., Sharma, S., Manandhar, J., Rodriguez, C., Merchán, F., & Saavedra, J. (2013). Savings patterns and performance in Colombia, Ghana, Kenya, and Nepal. (YouthSave Research Report No. 13-18). https://gsdi.unc.edu/publication/savings-patterns-and-performance-in-colombia-ghana-.

Khan, Z., & Patel, L. (2024). A case for rethinking the gender targeting of child cash transfers in Brazil and South Africa: Assessing caregiver sex in determining stunting in child beneficiaries. *International Social Security Review.* Doi:10.1111/issr.12372

Khan, Z., Patel, L., Graham, L., Burger, R., Chowa, G., & Masa, R. (2023). Youth Employability programmes in South Africa: Which features work best and for whom?Development Southern Africa 41(5). Doi:10.1080/0376835X.2023.2273533

Kluve, J., Puerto, S., Robalino, D., Romero, J. M., Rother, F., Stöterau, J., Weidenkaff, F., & Witte, M. (2019). Do youth employment programs improve labor market outcomes? A quantitative review. *World Development*, 114, 237–253. https://doi.org/10.1016/j.worlddev.2018.10.004.

Kutner, M. H., Nachtsheim, C. J., Neter, J., & Li, W. (2005). *Applied linear statistical models* (5th ed.). McGraw-Hill Irwin.

Mabli, J., Monzella, K., Franckle, R. L., & Delgado, P. L. (2023). Food Insecurity Transitions and Changes in Employment and Earnings. *American Journal of Preventive Medicine*, 64(3), 368–376. https://doi.org/10.1016/j.amepre.2022.09.028.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation Analysis. *Annual Review of Psychology*, 58(1), 593–614. https://doi.org/10.1146/annurev.psych.58.110405.085542.

Masa, R., Graham, L., Khan, Z., Chowa, G., & Patel, L. (2019). Food insecurity, sexual risk taking, and sexual victimization in Ghanaian adolescents and young South African adults. *International journal of public health*, 64(2), 153-163.

Patnaik, A., & Perales, L. (2024). Integrating financial capability and employment and training services: Participant perspectives. https://mefassociates.com/wordpress/wp-content/uploads/2024/05/Integrating-Financial-.

Pittman, K. J., Irby, M., Tolman, J., Yohalem, N., & Ferber, T. (2003). Preventing Problems, Promoting Development, Encouraging Engagement: Competing Priorities or Inseparable Goals? Forum for Youth Investment. The Cady-Lee House, 7064 Eastern Avenue NW, Washington, DC 20012-2031. Tel: 202-207-3333; Fax: 202-207-3329; e-mail: youth@forumfyi.org; Web site: http://www.forumfyi.org.

Pourmotabbed, A., Moradi, S., Babaei, A., Ghavami, A., Mohammadi, H., Jalili, C., Symonds, M. E., & Miraghajani, M. (2020). Food insecurity and mental health: A systematic review and meta-analysis. *Public Health Nutrition*, 23(10), 1778–1790. https://doi.org/10.1017/S136898001900435X.

Sherraden, M. (2016). *Assets and the Poor: New American Welfare Policy* (1st ed.). Routledge. https://doi.org/10.4324/9781315288376.

Sherraden, M. W. (1991). *Assets and the poor: A new American welfare policy*. Sharpe.

StataCorp LLC. (2023). Stata Statistical Software: Release 16. [Computer software].

Statistics South Africa (2022). National Poverty Lines, 2021 (Statistical Release P0310.1). Pretoria: Statistics South Africa. https://www.statssa.gov.za/publications/P03101/P031012021.pdf.

Treskon, M., Congdon, W. J., Martinchek, K., & Carther, A. (2021). Integrating Financial Capability into Employment Services: Literature Synthesis (OPRE Report #2021-04). Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. https://www.acf.hhs.gov/opre/report/integrating-financial-capability-employment-service.

van Buuren, S. (2018). *Flexible Imputation of Missing Data*. CRC Press.

Youth Capital. (2022). Beyond the cost: What does it really cost young people to look for work? https://youthcapital.co.za/wp-content/uploads/2022/05/YC-Beyond-the-cost-Report-final-digital.pdf.

Zizzamia, R. (2020). Is employment a panacea for poverty? A mixed-methods investigation of employment decisions in South Africa. *World Development*, 130, 104938. https://doi.org/10.1016/j.worlddev.2020.104938.

Appendix

Subgroup analyses

Table 6. GSEM of the relationship between financial capability and employment using mediation analysis for those below the food poverty line (<R441p/m)

VARIABLES	Now able to (odds ratio) meet basic needs (1)	Become less (odds ratio) food insecure (2)	Become better at financial planning (3)	Become a more active saver (4)	Perceived to be more employable (5)	Employed (odds ratio) (6)
Treatment (base category: none/control)						
Stipend, no FC	1.567*	1.744*	0.110	0.349	0.061	6.693**
	(0.376)	(0.576)	(0.331)	(0.330)	(0.105)	(5.978)
No stipend, FC	2.418***	1.871**	-0.539***	0.065	-0.126	2.576***
	(0.533)	(0.575)	(0.096)	(0.265)	(0.110)	(0.349)
Stipend, FC	1.999**	1.478	-0.067	0.504**	0.131	4.210*
	(0.548)	(0.455)	(0.177)	(0.211)	(0.150)	(3.274)
Able to meet basic needs						0.512**
						(0.172)
Less food insecure						0.911
						(0.309)
Better at financial planning						1.059
						(0.141)
Become a more active saver						1.161**
						(0.081)
Become more employable						1.122
						(0.247)
Received job matching						1.137
						(1.037)
Log duration soft skills training (weeks)						1.961
						(1.037)
Log programme duration (months)						0.441***
						(0.129)
Female						0.496***
						(0.113)
Has prior work experience						0.969
						(0.521)
Trained at a metro site						2.741
						(1.609)
Matric						0.366
						(0.394)
Certificate or diploma						0.431
						(0.322)
Degree or higher						0.187**
						(0.157)
Age						1.056
						(0.114)

Table 7. GSEM of the relationship between financial capability and employment using mediation analysis for the wave 3 sample - up to one year post-training

VARIABLES	Now able to (odds ratio) meet basic needs (1)	Become less (odds ratio) food insecure (2)	Become better at financial planning (3)	Become a more active saver (4)	Perceived to be more employable (5)	Employed (odds ratio) (6)
Treatment (base category: none/control)						
Stipend, no FC	1.796***	1.569**	0.299	0.097	0.068	3.071***
	(0.311)	(0.274)	(0.277)	(0.303)	(0.068)	(1.283)
No stipend, FC	2.297***	1.436	-0.104	0.009	-0.0008	1.050
	(0.711)	(0.407)	(0.074)	(0.195)	(0.084)	(0.348)
Stipend, FC	2.070***	1.200	0.174	0.103	0.156*	4.316***
	(0.144)	(0.274)	(0.222)	(0.216)	(0.081)	(1.628)
Able to meet basic needs						1.214
						(0.231)
Less food insecure						1.106
						(0.392)
Better at financial planning						0.884
						(0.090)
Become a more active saver						1.054
						(0.075)
Become more employable						0.940
						(0.111)
Received job matching						1.106
						(0.330)
Log duration soft skills training (weeks)						1.237
						(0.213)
Log programme duration (months)						0.662***
						(0.079)
Female						1.069
						(0.281)
Has prior work experience						0.848
						(0.266)
Trained at a metro site						4.119***
						(1.109)
Matric						0.516
						(0.273)
Certificate or diploma						0.745
						(0.308)
Degree or higher						0.951
						(0.579)
Age						0.987
						(0.038)

Table 8. GSEM of the relationship between financial capability and employment using mediation analysis for the wave 4 sample - up to two years post-training

VARIABLES	Now able to (odds ratio) meet basic needs (1)	Become less (odds ratio) food insecure (2)	Become better at financial planning (3)	Become a more active saver (4)	Perceived to be more employable (5)	Employed (odds ratio) (6)
Treatment (base category: none/control)						
Stipend, no FC	1.796***	1.569**	0.299	0.097	0.068	0.830
	(0.311)	(0.274)	(0.277)	(0.303)	(0.068)	(0.447)
No stipend, FC	2.297***	1.436	-0.104	0.009	-0.0008	1.453
	(0.711)	(0.407)	(0.074)	(0.195)	(0.084)	(0.701)
Stipend, FC	2.070***	1.200	0.174	0.103	0.156*	0.999
	(0.144)	(0.274)	(0.222)	(0.216)	(0.081)	(0.281)
Able to meet basic needs						0.698
						(0.273)
Less food insecure						1.362
						(0.491)
Better at financial planning						0.879
						(0.137)
Become a more active saver						1.007
						(0.092)
Become more employable						1.065
						(0.111)
Received job matching						3.397***
						(0.752)
Log duration soft skills training (weeks)						1.277
						(0.253)
Log programme duration (months)						0.976
						(0.107)
Female						0.656
						(0.183)
Has prior work experience						0.977
						(0.331)
Trained at a metro site						1.747***
						(0.390)
Highest level of education (base category: less than matric)						
Matric						0.764
						(0.411)
Certificate or diploma						0.843
						(0.442)
Degree or higher						0.585
						(0.613)
Age						0.966
						(0.051)

Tests for robustness of the main GSEM model to missing data

Table 9. Comparison of primary and multiply imputed models

Variable	Primary model	Optimistic scenario MI	Pessimistic scenario MI
A. Effect on mediators			
Now able to meet basic needs (OR)			
Stipend, no FC	1.796***	1.895***	1.915***
	(0.311)	(0.198)	(0.196)
FC, no stipend	2.297***	2.473***	2.468***
	(0.711)	(0.282)	(0.267)
Stipend, FC	2.070***	2.186***	2.195***
	(0.144)	(0.221)	(0.220)
Become less food insecure (OR)			
Stipend, no FC	1.569**	1.720**	1.723**
	(0.274)	(0.223)	(0.232)
FC, no stipend	1.436	1.581*	1.571*
	(0.407)	(0.213)	(0.211)
Stipend, FC	1.200	1.286	1.306
	(0.274)	(0.231)	(0.238)
B. Effect on employment (Odds Ratio, OR)			
Stipend, no FC	1.028	1.083	1.079
	(0.391)	(0.309)	(0.310)
FC, no stipend	1.602***	1.362***	1.357***
	(0.256)	(0.147)	(0.147)
Stipend, FC	1.389***	1.877***	1.871***
	(0.114)	(0.155)	(0.155)
C. Key mediator effects on employment (OR)			
Able to meet basic needs	0.802	0.782	0.797
	(0.171)	(0.201)	(0.201)
Become a more active saver	1.054	1.071	1.048
	(0.056)	(0.063)	(0.062)
D. Key Control on Employment (OR)			
Received job matching	2.788**	4.453***	4.387**
	(0.597)	(0.213)	(0.211)
Imputations	-	20	20

Note: * p < 0.05, ** p < 0.01, *** p < 0.001. The optimistic scenario assumes attritors' employment rate equals that of the most employable subgroup (43.3%). The pessimistic scenario assumes it equals the least employable subgroup (18.5%). All models control for programme duration, soft skills training, work experience, site, education, and age. Standard errors clustered by organisation. OR = Odds Ratio.

Table 10. Re-estimation of models after artificially adjusting mediator values

Scenario	Model	Stipend, no FC	FC, no stipend	Stipend, FC	Active saver → Employment
Pessimistic Employment	Shift down (+)	1.081	1.352***	1.872***	1.045
		(0.311)	(0.148)	(0.154)	(0.061)
	Shift up (+)	1.076	1.361***	1.859***	1.043
		(0.314)	(0.151)	(0.153)	(0.061)
Optimistic Employment	Shift down (+)	1.084	1.363***	1.864***	1.098
		(0.308)	(0.147)	(0.152)	(0.062)
	Shift up (+)	1.086	1.362***	1.881***	1.097
		(0.309)	(0.151)	(0.152)	(0.062)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The stability of Odds Ratios across all four sensitivity tests indicates the robustness of the findings to potential measurement error and missingness in the mediators.