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A youth wage subsidy experiment for South Africa

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A youth wage subsidy experiment for South Africa

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Executive summary

South Africa has a youth unemployment problem. Unemployment rates for South Africans in the 20 to 24 year-old age group are high – in the region of 60 per cent – and labour force participation rates are low. This report summarises a randomised controlled trial that investigated whether providing a wage subsidy voucher to young people, which firms who employed them could claim, resulted in higher employment. The voucher would be a temporary measure which would reduce the cost of hiring for firms.

We find that one year after allocation young people with the voucher were seven percentage points more likely to be in wage employment than those without the voucher. This impact persists even after the vouchers lapse; and two years later, the magnitude of the impact is similar. Furthermore, two years after allocation, those in the voucher group had spent more than a month more in wage employment than those without the voucher. This suggests that most of those who entered wage employment as a result of the voucher were able to remain in employment, and it highlights the potential positive effects of policies which get young people into jobs earlier.

Very few of the firms which hired young people with wage subsidy vouchers chose to use these vouchers. Interviews with these firms indicate that this was for a number of reasons, including the administrative costs and internal firm organisation, which made it difficult to claim; and there were doubts about the validity of the subsidy. However, those individuals who were employed in firms that did claim the voucher or enquired about the voucher were more likely to be employed both one and two years after voucher allocation – by an additional 20–36 percentage points one year later, and by 17–35 percentage points two years later – compared to those in the voucher group who were employed in firms that did not enquire or draw the subsidy.

This firm take-up or interest helps to explain about 1 percentage point (approximately 15 per cent) of the observed effect but, even after controlling for this, those in the voucher group remain approximately 6.3 percentage points more likely to be in employment than those without vouchers. This suggests that other factors explain the bulk of the observed difference in wage employment between the two groups.

There is little evidence that observed differences in outcomes are driven by changes in search behaviour or intensity, or movement to other areas, but there is some evidence that those in the control group were more likely to turn down job offers. Those in the control group where other members of their household were already in employment were more likely to turn down job offers than those with the voucher in similar households.

These results do not tell us whether a wage subsidy for young people would work in South Africa, since the conditions under which the experiment took place are different from those which would prevail during the national policy.¹ However,

¹On 1 January 2014, the Employment Tax Incentive went into effect in South Africa. It provides a wage subsidy, through a tax incentive, to firms that hire young people aged 18–29.

they do show that getting young people into jobs early can have a positive impact on their employment probability and length of employment. These results also indicate that the characteristics of the household, including whether any of the other members are employed, can affect labour market outcomes for young people. Furthermore, they indicate that any national policy needs to provide information to firms on how the subsidy works and how it can be claimed, and should aim to reduce administrative barriers to drawing the subsidy by as much as possible.

The experiment also found that those in the treatment group found employment in firms which were smaller on average than firms that employed young people from the control group. This raises the possibility that the final design of a national policy could consider a cap on the size of the firm that qualifies for a subsidy – perhaps firms with fewer than 200 employees. Such a cap could reduce some of the resistance to the policy by various constituencies, including organised labour, which sees this policy as a financial transfer to already profitable firms.

Simulations based on the transition rates found in this research indicate that, if these rates held for the economy as a whole, the incentive would create 88,000 new jobs. After including the costs of subsidising employment, which would have been created regardless of the incentive, most estimates indicate that the cost per job would still be lower than in programmes such as the Expanded Public Works Programme; and, overall, the programme would cost a fraction of that programme. However, even if the wage subsidy created the number of new jobs that the simulations indicate, South African youth unemployment would remain substantial.

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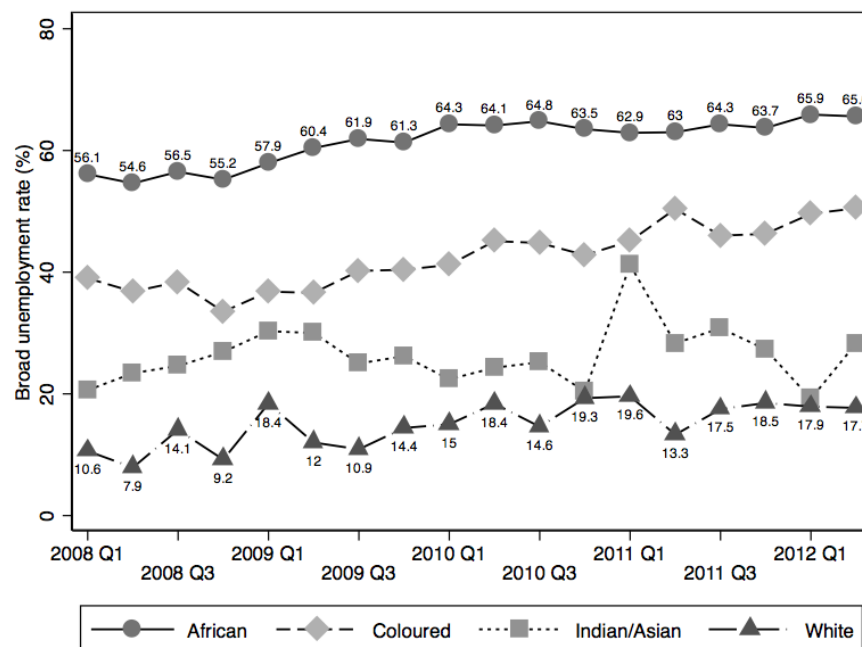
Abbreviations and acronyms

EA	enumeration area
EPWP	Expanded Public Works Programme
FE	fixed effects
GDP	gross domestic product
IV	instrumental variable
LC	labour centre
LMES	labour market entry survey
Ln	natural logarithm
NEA	not economically active
OLS	ordinary least squares
QLFS	Quarterly Labour Force Survey
RCT	randomised controlled trial
SETAs	Sector Education and Training Authorities

1. Introduction

High rates of youth unemployment, when compared to unemployment among older adults, are a global phenomenon. However, unemployment among young South Africans is particularly high, it differs substantially by race group, and it is increasing. In the second quarter of 2012, the broad unemployment rate for those aged 20–24 was above 60 per cent.² For young Africans,³ this figure is even higher – close to two-thirds are unemployed – and is in sharp contrast to white youth, among whom less than a fifth are unemployed. Since the beginning of the global financial crisis, youth unemployment has also increased substantially. Over the four-year period since the beginning of 2008, the unemployment rate among young Africans increased by close to 10 percentage points. Unemployment is thus a particularly acute problem among an already marginalised group of South Africans – young Africans with relatively low level of skills.

Figure 1 Broad youth unemployment rates by race



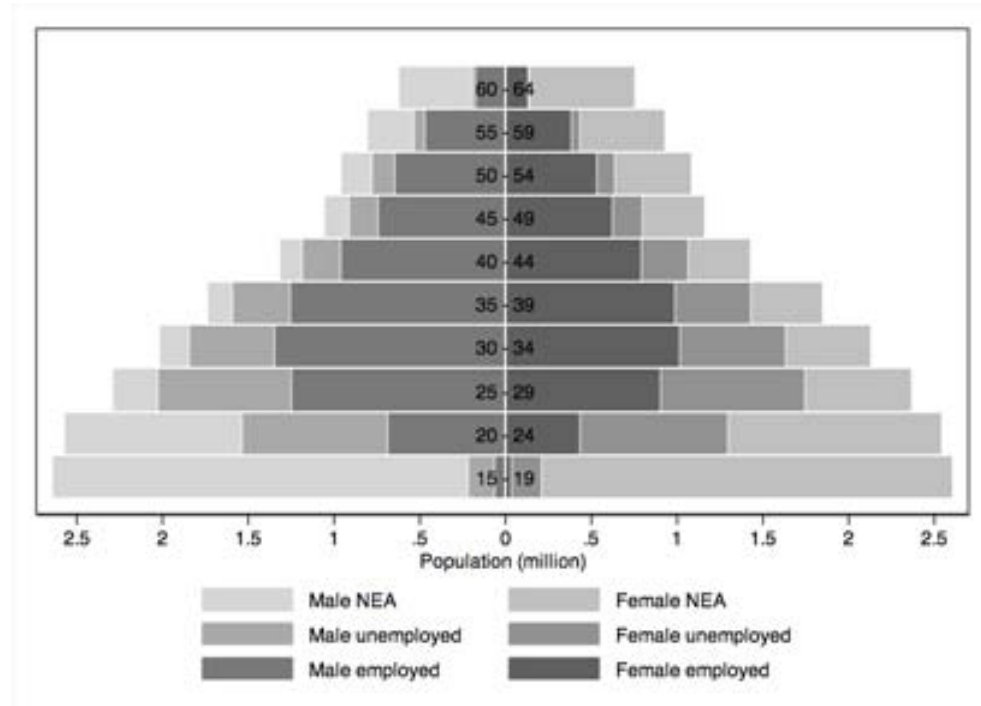
Notes: These figures are calculated from Statistics South Africa's *Quarterly Labour Force Survey*. The final period, quarter (Q) 2 of 2012, corresponds to the final survey period in this trial.

²We use the broad unemployment definition, rather than the official or narrow definition, throughout this paper. The broad definition differs from the narrow definition in that it includes people who have given up searching for a job – the so-called discouraged job-seekers. Since job search entails non-negligible costs, which young people may be less able to overcome since they lack savings and networks, and there is evidence that the discouraged are actually worse off than those who search (see, for example, Kingdon and Knight2004), the broad definition is arguably more appropriate in the context of youth unemployment.

³In this report, the term Africans is used in the same way as it is used in official government documents and legislation. The designation African describes the race of what others refer to as Black and refers only to South Africans in this racial group. Officially Black refers to South Africans classified as African, Coloured or Indian, hence the choice to use African rather than Black.

The labour market trajectories of most South Africans are shaped in their 20s. Many finish school or further education, search for jobs and have their initial substantive work experience during this period. The age period of 20–24 years seems particularly important. As Figure 2 shows, employment rates increase substantially between this period and the 25–29 years age group, as young people enter jobs. Despite this, unemployment rates remain high as young people approach 30. Previous work experience is highly correlated with whether or not someone currently has a job (Banerjee, *et al.* 2008) and thus finding a first job is crucial for the lifetime work trajectory of people. Since most people’s first job’ occurs in the 20–29 age group, this should be a key age group for government policy to target when aiming to reduce unemployment.

Figure 2 Labour market status by age and sex, Africans



Notes:

The left side of the pyramid denotes figures for males and the right side for females. These figures are calculated from Statistics South Africa’s *Quarterly Labour Force Survey*. The period used, quarter 2 of 2012, corresponds to the final survey period in this trial.

Given the high unemployment rates among this age group, and the importance of this period for transition into work, there are a number of government interventions in South Africa that aim to help young people enter jobs and acquire skills. Employers contribute funds for workplace training through the Skills Development Levy. Sector Education and Training Authorities (SETAs) are funded from these contributions to provide training programmes that are tailored to the needs of specific sectors. Employers can also employ workers and claim a tax allowance through a recognised learner ship or apprenticeship programme, in order to train workers while they receive practical work experience. The National Youth Development Agency runs job placement programmes, provides skills training (including life skills), and supports entrepreneurs through loans and training. The Department of Labour’s Labour Centres (LCs) help with job search, career guidance and *curriculum vitae* development. The Expanded Public Works

Programme (EPWP) provides short-term job opportunities, often requiring low skill levels, on government projects; whereas the Community Works Programme has a broader focus and aims to empower communities through a more holistic approach to job creation. Both of these programmes also have a training component.

Most of the current set of government interventions focus on the supply side of the labour market – through training and job search assistance. Demand-side interventions are mostly from the government sector, through the EPWP, although the National Treasury's Jobs Fund also funds innovative projects to create jobs.

An additional proposed intervention, designed to change the relative cost of hiring young people with little or no effect on the wage they earn, is a temporary wage subsidy, in the form of a hiring voucher. Unlike existing policies, this approach would not dictate how firms should use the money, but merely make it cheaper to hire young people for a limited period. It would also be exclusively targeted at private firms. In 2009, the South African National Treasury suggested an employment tax incentive and/or a hiring voucher as possible policy options to boost job creation and President Jacob Zuma formally announced the tabling of such a policy for consideration in his State of the Nation address in February 2010. Subsequent to this, the National Treasury has set out a proposal of how the policy would actually be structured in a discussion document (in February 2011). Most recently, the National Planning Commission has supported greater use of active labour market policies, including a tax incentive to employers to reduce the initial cost of hiring young labour market entrants.

Evidence from other countries suggests that the success of a wage subsidy can be context-specific and depends on the nature of the intervention and the structure of the labour market, among other things (see Betcherman *et al.* 2007, for a summary of interventions to support young people). Given the context specificity, a randomised controlled trial (RCT) of a wage subsidy can provide an indication of how young people and firms may react. This paper discusses the results from an RCT of a hiring voucher among young Africans. It specifically investigates whether the allocation of a wage subsidy voucher to a group of young people affected their employment probabilities in the short term (one year after allocation) and once the eligibility of the voucher had lapsed (two years after allocation).

In an RCT, the participants in the study are randomly divided into two groups – one that received the intervention, in this case a voucher for a wage subsidy which a firm that employs the individual could claim for six months (called the treatment group), and a second group that does not receive anything (called the control group). Since allocation to the groups is random and both groups share similar characteristics, any observed changes on average should be the result of the wage subsidy voucher. We can thus attach a causal interpretation to our results.

The wage subsidy design is based on the Levinsohn (2008) proposal of a wage subsidy credit of Rs, 5,000, made available directly to all young South Africans (aged

20–24 years). This project was implemented prior to the National Treasury releasing details of how the youth employment tax incentive would be implemented nationally. The Employment Tax Incentive policy implemented on 1 January 2014, is a tax incentive for the hire of young people. It lasts for up to two years and is a greater amount than the amount in this project.

The project aimed to evaluate the following questions:

1. Are those with a wage subsidy more likely to be in employment as a result of the allocation of the voucher?
2. If yes, what are the mechanisms through which this effect works?
3. Do voucher holders have different types of jobs from those of non-voucher holders?
4. Does a voucher's effect persist after it has lapsed? Are there any discernible differences in the employment probabilities between voucher holders and non-voucher holders two years after voucher allocation?
5. How do firms respond to the voucher? Can their reactions inform the debate around the implementation of the wage subsidy?

2. Context and literature review

Job subsidies, recruitment incentives and schemes to reduce non-wage labour costs are relatively common labour market policies in both developed and – increasingly – developing countries. A number of academic studies investigate the impact of these in a variety of contexts.

Gerfin *et al.* (2005) investigate the differential effects of two different Swiss employment subsidies – one a non-profit employment programme, and another a subsidy for temporary jobs in private and public firms. Using matching methods, they find positive effects of the subsidy relative to the employment programme. Both programmes are effective in raising re-employment probabilities for the unemployed who have substantial difficulties in the labour market.

Galasso *et al.* (2004) consider the impact of a wage subsidy and a wage subsidy coupled with training for participants on a workfare programme in Argentina. They do this through the use of a randomised experiment and correct for incomplete compliance.⁴ They find that voucher holders have a significantly higher probability of being in private sector employment 18 months after the baseline survey – but that training made very little additional difference. The difference in employment probabilities was largely driven by women and younger workers. Take-up of the subsidy by firms was low, which suggests that the voucher triggered a supply-side response. They conclude that given these low take-up rates, the cost to the government was relatively low. However, they are not able to quantify potential displacement effects.

Betcherman *et al.* (2010) examine two employment subsidy schemes in Turkey. They use administrative data at the province level, and staggered expansion of the programmes to identify the impact of these schemes. Using a difference-in-differences methodology, they find that these programmes did lead to significant

⁴Incomplete compliance means that not all those who receive the treatment, in this case the wage subsidy, take it up.

increases in net registered jobs (of between 5 and 15 per cent). Most of this increase was within existing firms. However, there does seem to have been significant deadweight losses (jobs that were subsidised that would have been created anyway). There is some evidence, although based on limited data, that the dominant effect of the subsidies was to increase formal registration of firms and workers, rather than to boost total employment and GDP.

There are also a number of papers that attempt to model the impact of a wage subsidy in South Africa. Both Go *et al.* (2010) and Burns *et al.* (2010) use computable general equilibrium models to evaluate the economy-wide effects of a wage subsidy in South Africa. Both show a relatively large range of potential impact that is driven by assumptions about the wage elasticity. Pugatch and Levinsohn (2011) develop a structural search model to better understand the impact of a potential wage subsidy among Cape Town youth. They suggest that a R1,000 per month wage subsidy paid to employers leads to an increase of R660 in mean accepted wages, and to a decrease of 15 percentage points in the share of youth experiencing long-term unemployment. All these South African-specific studies are simulations rather than field experiments.

3. Description of the intervention and theory of change

In 2006, the National Treasury of the Republic of South Africa, together with the Center for International Development, convened a panel of international experts from Harvard University, the Massachusetts Institute of Technology, the University of Michigan and other institutions to study South Africa's 'constraints to and opportunities for accelerated growth'. The panel identified youth unemployment as a critical issue confronting the economic development of this country. Levinsohn (2008), among other recommendations following from the study, proposed 'Two Policies to Alleviate Unemployment in South Africa'.

The first is a targeted wage subsidy. The proposal was intended to address two market imperfections that Levinsohn (2008) suggested were preventing young school-leavers from entering the labour market, which were contributing to low levels of economic growth and to negative externalities (such as crime) associated with widespread unemployment:

1. Uncertainty about the productivity of these workers, including the returns to investments in training and the costs associated with dismissal.
2. A wage floor that prevented the market from clearing.

According to Levinsohn (2008),

This model gives rise to a troubling equilibrium. In that equilibrium, the demand for labor is lower than it would be if workers' types were observable (since firms hire based on expected skill levels), the incentives to obtain skills are diminished (since workers cannot be sure they will reap the benefits of their acquired skills), and racial inequality worsens (since firms' best guess as to worker quality may involve race).

Levinsohn (2008) argued that a subsidy would address these concerns by lowering these costs associated with matching firms to workers, by breaking 'this self-reinforcing and troubling equilibrium by, in effect, subsidizing search (by

workers) and experimentation (by firms.); and would likely serve 'to increase employment, reduce discrimination, increase skill acquisition, and increases investment (because mobile capital is complementary to labor.)'. However, Levinsohn (2008) also points out that this policy may have drawbacks:

1. 'Destructive churning', where firms dismiss workers once they are no longer subsidised and recruit subsidised workers to replace them.
2. Workers who are subsidised are used as substitutes for those who are not.
3. Young school-leavers could underinvest in education by entering the labour market instead of completing their education.
4. The intervention could stigmatise workers who are subsidised.
5. The implementation of a subsidy covering a significant proportion of the population could lead to higher levels of inflation.
6. The potential for fraud.

Based on this recommendation, but considering the high cost and these drawbacks, the National Treasury, together with the Applied Micro-Economic Research Unit at the University of the Witwatersrand, initiated an evaluation of a wage subsidy. This formed part of a broader study into youth labour market dynamics in South Africa. The primary question of interest for the National Treasury is whether the subsidy will lead to increased levels of employment among young people.

In order to address some of the concerns listed, the test of this policy was implemented in the form of a voucher given to young people aged 20–24. Who the subsidy is paid to plays a role in the outcomes associated with the subsidy, since subsidising the employer or the employee is equivalent only in the unlikely scenario that there are no transaction costs and both the employer and employee have perfect information (Katz 1998).

Pauw and Edwards (2006) point out that 'when wages are rigid because of binding minimum wage law, wage subsidies paid to employees are effective in raising take-home earnings, while employer paid subsidies are more effective in raising employment'. To address this issue, it was decided that while the voucher would be given to the job-seeker, the subsidy would be paid to the firm. In this way, young unemployed workers could use the voucher to assist them in finding employers who would be willing to give them opportunities to prove themselves in employment. The theory of change can be summarised in the following steps:

1. A school-leaver is allocated a voucher that enables any firm (subject to the firm being registered for tax and paying unemployment insurance) that decides to employ this worker to claim back a portion of the wage that the firm pays to the worker.
2. This young person searches for a job through the channels that are available to them, including their networks, formal application procedures, and informal methods such as approaching firms directly.
3. The firm chooses to experiment with an additional worker who is unable to signal their productivity, knowing that the cost of employing this worker is reduced by the amount of the subsidy (less the administrative cost of claiming the subsidy).

4. Through this employment, the worker gains skills and references that increase their productivity and ability to signal this productivity, which raises their income and the likelihood of being retained in employment.
5. The firm not only increases the productivity of its workforce, but also raises the productivity and reduces the uncertainty associated with the available pool of young workers.

The central premise on which this theory of change is based is that there is a group of young unemployed workers who, when given the opportunity, would be able, and are willing, to contribute to the output of South Africa. The complexity of the labour market, however, suggests that there are multiple points at which this theory of change may be challenged. For example, school-leavers may not believe the subsidy will increase their chances of finding employment, and may subsequently underinvest in search.

The search channels available to a younger worker may also restrict the chance of finding firms that would be interested in hiring someone with the voucher. Similarly, the amount covered by the subsidy may be insufficient to induce the firm to experiment with an additional worker; or even if they do, this employment may be restricted to jobs that do not improve the skills of the worker or her ability to signal these skills (even to her employer). Finally, there are also limits to the evaluation methodologies available to answer many of the questions that may arise from this theory, and the multiple channels and linkages through which such a programme will effect change, particularly those relating to externalities and the macro-economy.

4. Evaluation implementation

The design of the wage subsidy for the study was broadly based on Levinsohn's 2008 proposal – Africans aged between ages 20 and 24 were randomly allocated a voucher that would allow firms that employed them to claim back some of the wages they paid to these individuals. The subsidy amount was capped at half the wage, or R833 per month (whichever was lower), and could be claimed for a minimum of six months or until the R5,000 that each subsidised individual was allocated ran out. The subsidy amount of R833 per month was almost 40 percent of the median monthly wage of those in the sample who were working when vouchers were allocated in 2010, and was half the wage of at least a quarter of the working individuals in the sample.

Subsidies were transferable between companies – an individual took the unclaimed subsidy with them if they left a firm – and individuals needed to be employed full-time in a formal non-government business (the business needed to be registered, paying tax and make unemployment insurance contributions for the employee). The study was run as an RCT with baseline surveys in 2009 and 2010, the allocation of the vouchers in 2010, and follow up surveys in 2011 and 2012.

In 2009, a baseline sample of 4,009 young people was undertaken. These individuals were aged between 20 and 24 at the time of interview and were drawn from random clusters sampled, with a probability weight based on the proportion of young Africans living in them, based on the 2001 census. We call

this the enumeration area (EA) sample. In addition to this, a second sample of young people, who had registered at the Department of Labour's Labour Centres, was interviewed. These individuals were selected randomly from those visiting the Centres and from the individual Centre databases. The chosen Labour Centres were those located in the EA clusters or those closest to the EA clusters. Approximately 2,500 young people were part of the EA sample, with the balance drawn from the Labour Centres.

Sampling was done in three regions – the Johannesburg metropolitan area in Gauteng province; the *eThekweni* (greater Durban) metropolitan area of KwaZulu-Natal province (which, although classified as a metropolitan area, did include some rural areas within the boundaries of the metro); and the urban area of Polokwane and surrounding rural areas of the Limpopo province. A structured survey, which captured demographic and household characteristics, education levels, and previous and current labour market experiences, was administered to these 4,009 individuals.

In 2010, they were re-interviewed and a random selection was given wage subsidy vouchers and had the process of claiming these vouchers explained to them. The full sample was then re-interviewed in 2011 and 2012 and their labour market outcomes recorded.

The treatment and control groups were determined using pair-wise matching, and this was done by researchers in private. The respondents were initially assigned to buckets. The EA sample respondents were assigned based on their gender and on where the enumeration area was located – Alexandra or Hillbrow; Soweto; Thembisa or Ivory Park; East Rand; Central Durban; other Durban; Dikgale; Lebowakgomo; Seshego; Makhado; and Thohoyando. Pairs were then identified using a Mahalanobis matching algorithm, which included their age, whether the respondent had a matric (the South African school leaving certificate), a degree or diploma, the number of earners in the household, and the self-reported activity of the respondent at the time of the interview in 2009.

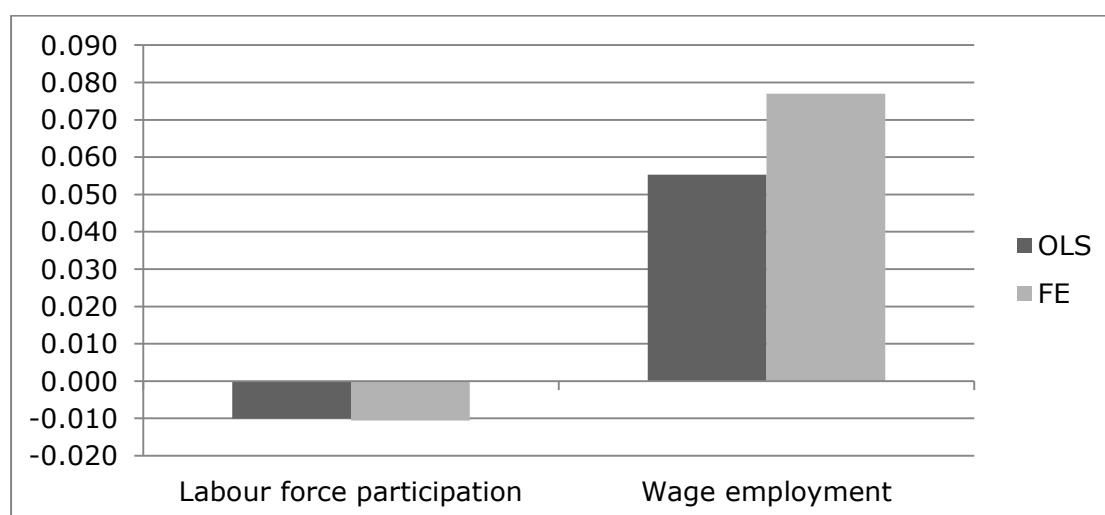
The Labour Centre sample was similarly divided into gender, and into buckets based on the location of the centre – Soweto; Johannesburg Central; Johannesburg East/ Ekurhuleni; Durban and Pinetown; other KwaZulu-Natal; Polokwane; and other Limpopo. Pairs were then identified using a Mahalanobis matching algorithm which included their age, whether the respondent had a matric, a degree or diploma, and the number of earners in the household. Matched pairs were randomly allocated to either the treatment or control group. In some cases, three respondents had identical Mahalanobis scores. In these cases, one treatment observation was randomly selected and the remaining two were assigned to the control group.

The composition of the sample is discussed in more detail in Appendix A; descriptive statistics of key variables, balance and the change in sample composition over the various rounds of the survey are discussed in Appendix D.

5. Impact results⁵

The figures below summarise the results presented in Table E1 (Appendix E). This shows the relationship between the wage voucher and different dimensions of employment. For each dimension, two estimations are presented. The first is ordinary least squares (OLS). The second is a matched fixed effects estimation, since we used pair-wise matching to group individuals who were then randomly assigned between the treatment and control (similar to the suggestion by Bruhn and McKenzie 2009). This also helps to control for attrition, based on these observable characteristics, since the treatment coefficient is identified only in those matched pairs where both a representative from the treatment group and the control group remains in the sample.

Figure 3 The impact of the wage subsidy voucher on labour force participation and wage employment one year after allocation (2011)



Notes:

These are the coefficient estimates taken from the regression results in Table E1 (Appendix E). These are percentage point changes. FE is the abbreviation for fixed effects.

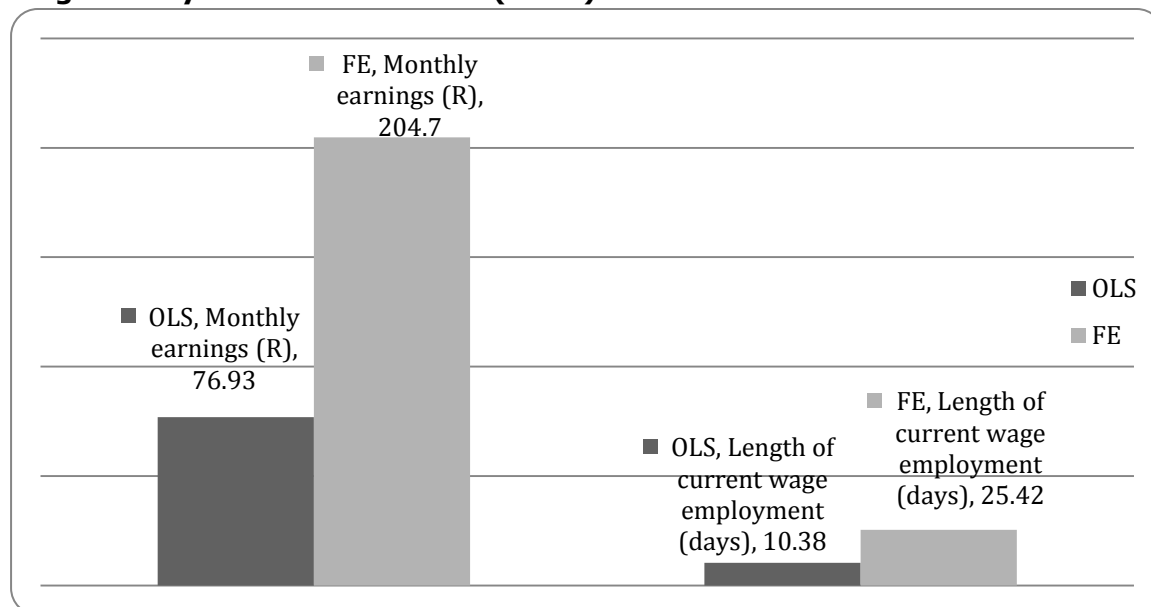
These results indicate that the voucher had no impact on labour force participation. This suggests that those in school who were allocated the voucher did not leave school to look for jobs, alleviating one of the concerns raised by Levinsohn (2008). It did have an impact on wage employment, though. Those in the voucher group were significantly more likely to be in employment one year after the allocation of the voucher, even after controlling for being in wage employment in the previous period (2010). The magnitude of this impact is estimated at between 5.5 and 7.7 percentage points.⁶ There is no significant difference in the impact between the sample drawn from the Labour Centres and

⁵ Estimations were initially run with an interaction term to allow for the impact to differ between the Labour Centre (LC) sample and the Enumeration Area sample. Although individuals visiting LCs were different across a number of dimensions, once we controlled for these differences there were no significant differences between the EA and LC samples across all outcome variables of interest. We thus include both samples in all our estimations.

⁶ As Table D2 in Appendix D indicates, 31 per cent of the control group were in wage employment in 2011. These estimates indicate a 15–25 per cent increase in wage employment for the treatment group compared with the control group.

the broader Enumeration Area sample.⁷ The estimation results also indicate the relationship between education and employment in South Africa. Those with matric are more likely to be employed than those with less than grade 11 education, and having matric with endorsement (i.e. doing better for matric) is associated with an even higher probability of being employed. This effect remains even with matched pair fixed effects.

Figure 4 Impact of the wage subsidy voucher on tenure and monthly wages one year after allocation (2011)



Notes:

These are the coefficient estimates taken from the regression results in Table E1 (Appendix E). Those not in wage employment are assigned a value of 0.

Despite the observed impact on employment probabilities from being in the voucher group, there are no significant differences in monthly earnings between those in the voucher group and those in the control. However, the FE estimates suggest that those in the voucher group had almost a month more work experience than those in the control.

In order to check the robustness of the results from our sample, we run comparable estimations on the official labour force data collected through Statistics South Africa’s Quarterly Labour Force (QLFS) survey. The QLFS sample used for the comparison is limited to the three provinces in which the experiment took place. The first two rounds of the QLFS in 2011 are pooled and used. This corresponds to the period when the first followup survey for the experiment took place.

There is no information in the publically available version of the QLFS for this round on employment length or earnings. Thus, the only comparison we can do is on the probability of being employed. The QLFS results give very similar coefficient estimates to those estimated from the LMES. Males are between 7 and 10 percentage points more likely to be in employment in the QLFS, compared to 11 to 12 percentage points for the LMES. The education results differ slightly in magnitude between the two datasets. Those with matric are approximately 12

⁷ These results are not shown here.

percentage points more likely to be employed in the LMES dataset compared to those with less than grade 11 education, whereas the difference is 5 to 6 percentage points in the broader QLFS. However, these LMES coefficient estimates are not significantly different from the QLFS estimates.

The comparison with the QLFS suggests that the effect of observable characteristics, such as gender and education, in the LMES sample are remarkably similar to broader official surveys. As such, this indicates that the LMES sample is not unusual when compared to the QLFS; thus, the observed results for the experiment are not driven by characteristics that are particular to the sample.

5.1 Mechanisms of the effect

These results suggest that the voucher had a causal effect on being in wage employment. However, they do not provide any insight into the mechanisms through which it may have worked. Some of these potential mechanisms include: those with the voucher may have been more likely to have got jobs because they were cheaper to hire (i.e. firms claimed the voucher); because firms perceived the voucher as some sort of quality signal; because they searched more or differently; because they heard about more jobs; or because they changed their reservation wages. In addition to a variety of channels through which the impact may have worked, there may be issues related to understanding, or use of, the voucher that may affect the results. To understand the mechanisms better, we investigate these channels individually, beginning with understanding of the voucher.

5.2 Understanding

Not understanding the voucher can be thought of as analogous to incomplete compliance – although people in the treatment group had a voucher, they did not use it or used it in a different way from that intended because they did not understand how it worked. In the follow up round of 2011, it was clear that some of those who had received a voucher did not fully understand it. Table 1 shows that 63.5 per cent of those with the voucher who were interviewed in 2011 understood how it worked. Among the group who understood the voucher, transitions into wage employment were 3 percentage points higher than in the group that did not understand the voucher.

In Table E2 (Appendix E), we present results using a measure of whether an individual understood the voucher.⁸ In 2011, individuals were asked about what they thought the voucher meant. This is used to create a binary variable for those who understood the voucher. These results are presented in the first two columns. In the fifth and sixth columns we use an IV estimator, similar to Galasso *et al.* (2004), where we instrument whether the individual understood the voucher with allocation to the treatment group. The coefficient estimates in columns 1 and 2 suggest that the observed treatment effect is made up of an effect within the treatment group but also a higher additional effect for those who

⁸From this point on we do not distinguish impacts between the EA and LC samples since the earlier regressions, and these regressions which differentiate between the LC and EA samples, suggest that there are no significant differences in impact across the samples.

understand the voucher. This is confirmed by the larger estimated coefficients on the understanding variable in the IV estimations. We also use a measure of whether the individual used the voucher or not. These coefficient estimates are significant if used in the estimations in place of understanding the voucher, but are not significant if both measures are included (in columns 9 and 10).

Table 1 Understanding of the voucher

		Wage employed		
		No	Yes	Total
Understood the voucher				
No	n	285	151	436
	% row	65.37	34.63	100
	% col	37.65	34.4	36.45
Yes	n	472	288	760
	% row	62.11	37.89	100
	% col	62.35	65.6	63.55
Total	n	757	439	1,196
	% row	63.29	36.71	100
	% col	100	100	100
Approached businesses with the voucher				
No	n	294	218	512
	% row	57.42	42.58	100
	% col	41.35	52.91	45.59
Yes	n	417	194	611
	% row	68.25	31.75	100
	% col	58.65	47.09	54.41
Total	n	711	412	1,123
	% row	63.31	36.69	100
	% col	100	100	100

One explanation for this finding is that understanding of the voucher is a proxy for an unobservable characteristic, or set of characteristics, that are correlated with finding a job. Those who understand the voucher may be better at assimilating and communicating information or have better cognitive skills. Since we only ask those with a voucher about their understanding of it, we cannot use this variable to compare across the two groups. Instead, we asked a series of

six maths questions, which differed randomly between respondents (so that they did not receive help from the enumerators). Arguably, these could proxy for the ability to understand and solve a problem. We also use the confidence of the person in speaking English (the dominant language of employers in these areas in South Africa) before assignment of the voucher. This may proxy for the ability to communicate. Even when we control for the number of these questions successfully answered and for confidence in English, the results remain unchanged. Furthermore, these characteristics are orthogonal to assignment to the treatment group, which we use as the instrument for understanding. These results suggest that it is understanding the voucher that drives the observed effect.

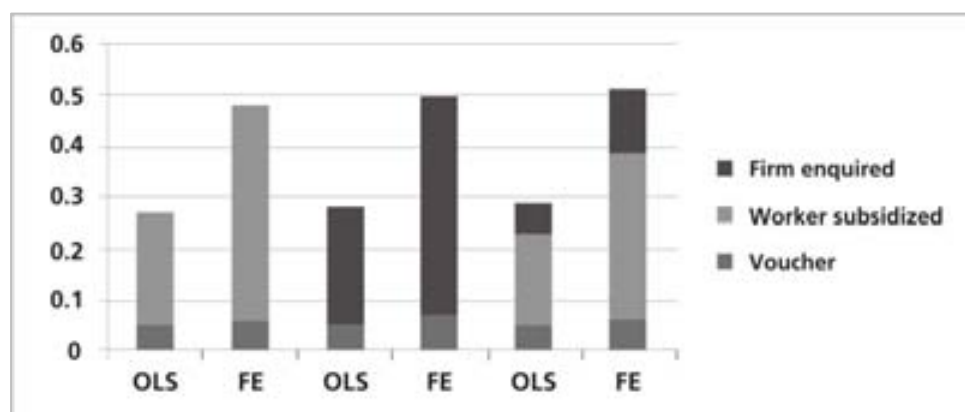
5.3 Firm take-up

In the study, very few firms actually took up the voucher (22 firms), although a greater number enquired about the voucher (an additional 16).⁹ Enquiring about the voucher may be a signal of its efficacy, since firms may have hired individuals based on the voucher but not have taken it up once they learnt of the process they had to go through. In Table E3 in Appendix E, we investigate whether it is the firms claiming the voucher, or those that enquired, that are driving the observed treatment effect. Assignment to the treatment group remains significant even after controlling for pair-wise matching. An individual whose employer has claimed the subsidy is a further 42 percentage points more likely to be employed.

The magnitude of the effect of a firm enquiring about the subsidy is similar. If both claiming the subsidy and enquiring about the subsidy are included, both measures become insignificant; however, this is due to the high correlation between the two measures. These results indicate that the observed treatment effect is not wholly due to firm responses, although the magnitude of the impact is much greater for those firms that have taken up the subsidy. This is understandable given that, at the time of interview, some of the firms were still drawing the subsidy. The reduction in the magnitude of the coefficient on the treatment variable, once we control for firm take-up or enquiry, suggests that firm-level responses, through take-up or enquiry, explain about 1 percentage point (or 15 per cent) of the observed impact.

⁹ We were able to capture information from firms that enquired about 36 individuals in the sample; however, there were some firms that enquired but that did not provide names or voucher numbers and thus we are unable to match them with individuals in the sample. Overall enquiries about the project numbered more than 100.

Figure 5 Magnitude of the impact for firm take-up or enquiry relative to the control group (2011)



Notes:

These are the coefficient estimates taken from the regression results in Table E3 (Appendix E). These are percentage point changes.

Interviews with firms and young people suggest that firm take-up was low for a number of reasons. The young people did not even get a chance to show the voucher to someone who makes hiring decisions. The administrative burden associated with claiming the money, although not onerous, could not be overcome (for example, larger firms did not have a process for accepting subsidy money, human resource functions were centralised and employees in the human resources department had little incentive to engage in the process of claiming the voucher). Another factor in low take-up was that some managers or firm owners questioned the legitimacy of the voucher. This suggests that any wage subsidy policy at a national level would need to be widely advertised and information and support provided to firms that would like to claim the subsidy. It may also be that the subsidy was too low to persuade firms to employ unskilled young people. This is something that could be investigated in another experiment.

5.4 Supply-side responses

The evidence above suggests that even after controlling for firm-level responses to the voucher, there is still a treatment effect. This suggests that the effect may be driven by a supply-side response, such as a change in search behaviour or changes in the type of job that an individual is willing to accept. There are well-known challenges with estimating the impact of a treatment on an outcome variable through a mediator, such as search behaviour in our case (see, for example, the discussion in Gerber and Green 2012). Treating the mediator as a right hand side regressor may introduce bias and, typically, it will seem that most of the effect happens through the mediator (Gerber and Green 2012).¹⁰

In order to avoid this issue, we treat search as an outcome variable and investigate whether there are any differences in search behaviour between the treatment and control groups. In the 2011 interview, respondents were asked whether and how they changed their search behaviour in the month after the

¹⁰This is indeed the case if search intensity, and search intensity interacted with the treatment, are included on the right hand side. In the fixed effects estimations, the point estimate on the voucher variable is 0.

2010 interview. They also indicated in which months between the two interviews they searched the most intensively. The coefficient estimates on the treatment variable indicate that on average there is no significant difference in search across the two groups.

Next we consider whether there is any difference between the treatment and control group in terms of whether they moved location or turned down any job offers during the period of the trial. What emerges from these results is a relationship between the voucher and turning down job offers. In the fixed effects estimations, the coefficients on the voucher group and understanding the voucher are negative and significant at the 5 percent level – those in the voucher group are almost 3 percentage points less likely to have turned down a job in the period between the allocation of the voucher in 2010 and the follow up interview in 2011, compared to the control group. Those who understood the voucher are over 4 percentage points less likely to have turned down a job offer. This is a large effect. Given the proportion of those turning down a job offer in the treatment group, it suggests that those in the control group are more than twice as likely to turn down a job offer.

This seems perverse – why would young people in a high unemployment environment turn down plausible job offers and how do these individuals support themselves given they are unemployed? We investigate this by dividing the control and treatment group between those who are (or were) in households with other employed members in 2010. In these types of households there may be transfers between members to help with search or living expenses. Given smaller cell sizes, many of the coefficients are no longer significant but the point estimates give an indication of a plausible explanation.

Those in the control group with employed members in the household are most likely to turn down job offers. These types of individuals are also least likely to be in wage employment, and if they are in wage employment then they earn the highest wages on average. These results suggest that these individuals may be waiting for higher-income jobs and can afford to do this since there are other earners within the household who can support them. Why does this not happen for those with vouchers? One explanation may be to do with the flow of information. Most information on job availability comes through networks with links into firms. Individuals in households with employed family members are thus likely to hear about more jobs than those with out employed family members (it is this flow of available jobs that respondents interpreted as job offers).

However, people will only follow up on this information if they believe that they stand a good chance of getting the job, since applying and getting to the job is expensive and often requires the individual to incur initial costs for things such as transport. These costs can usually only get repaid a few days or weeks later when the individual receives their first pay cheque. The wage voucher may have changed the perceived probability of successfully getting a job and thus those in the voucher group may have decided to follow up on this information more often. It may also have changed the perception of the individual's household and thus they would have been more willing to lend money for transport and/or more likely to insist that the young people with vouchers follow up on this information.

Another mechanism through which the voucher might have worked is that it might have given the holder some legitimacy, which improved their chances in the job application process. This might be because the official-looking documentation got them past the security guard at the gate or because the person hiring the individual assumed that they were already screened by the University of the Witwatersrand and thus did not scrutinise them as thoroughly. To investigate this, we can look at whether the individual had an interview for the job they got and the length of that interview. There is no difference in the likelihood of having a job interview, or having a brief (less than five minutes) interview, between those who obtained jobs in the treatment and control groups.¹¹

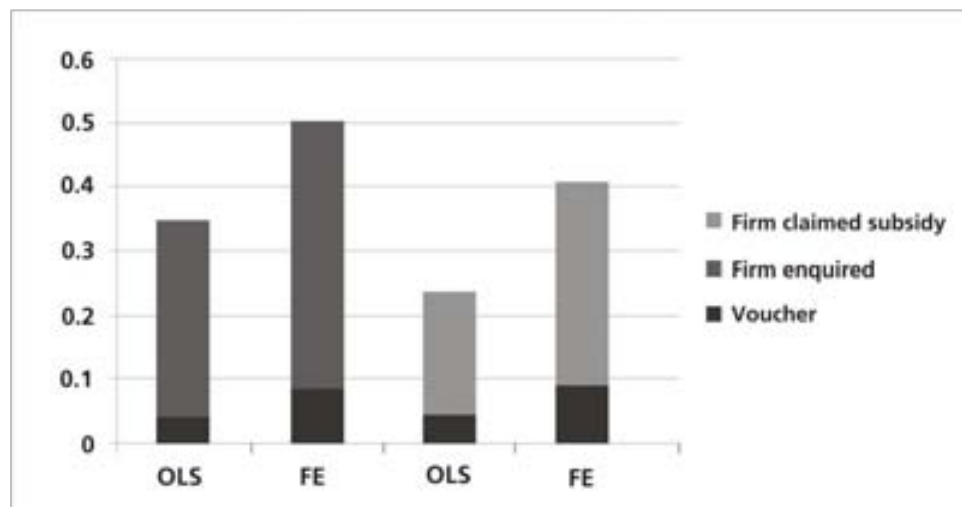
The impact of the voucher once the subsidy lapses

One important concern raised about the proposed wage subsidy is that it would lead to short-term temporary employment and young people would be replaced once their subsidy lapsed. To investigate this, individuals were re-interviewed approximately two years after the initial allocation of the voucher. Tables E6 and E7 present estimation results in terms of labour force participation, wage employment and wages. As with the midline results of 2011, there is no difference in labour force participation or monthly earnings between the two groups. However, the voucher still has a positive and significant impact on the probability of being in wage employment and is positively associated with a longer spell in the job.

An individual who approached a firm that subsequently enquired about the voucher, or someone who was employed by a firm that claimed the voucher, was more likely to be employed in 2012. These estimates are significant for those who were employed in firms that enquired about the voucher, but not for those who were in jobs where firms claimed the subsidy. As with the results in 2011, the increased employment probability for those subsequently employed in firms that enquired about the voucher or who claimed the subsidy is large. This suggests that the voucher was not interpreted as something which screened applicants by the firms which ended up employing them.

¹¹Results not shown here.

Figure 6 Magnitude of the impact for firm take-up or enquiry once the voucher has lapsed (2012)



Notes:

These are the coefficient estimates taken from the regression results in Table E7 (Appendix E). These are percentage point changes.

These results show that the voucher had, on average, an impact on the labour market trajectories of those in the treatment group that lasted longer than the validity of the voucher. Young people who found employment as a consequence of the voucher remained in employment and were not replaced, suggesting that a significant hurdle for young people in the South African labour market is acquiring their first job.

5.5 Types of firms in which people were employed

To better understand the types of firms in which people who were allocated the wage subsidy were employed, we interviewed a sub-sample of the firms where individuals in the sample worked. We also interviewed a random group of firms that did not employ people in the sample, in order to ascertain whether firms employing young people were systematically different from the broader population of firms. This broader sample was drawn from a list obtained from the South African Companies and Intellectual Property Registration Office. Table E9 in Appendix E provides comparisons between the firms that employed people in our sample (the matched firms), those who employed voucher holders (treatment firms), and those drawn from the broader population. In general, firms employing young people seem to be bigger and have higher proportions of young people in their workforce than those that do not.

However, these results also indicate that voucher holders were employed in smaller firms and firms with a lower proportion of young people in their workforce, than those in the control group, who obtained employment. This may be because those with vouchers accepted jobs in the types of companies they ordinarily would not have considered, potentially because they thought their chances of obtaining these types of jobs were low. All else being equal, smaller companies with low ratios of young people are likely to have a smaller number of vacancies than larger companies or those with high ratios of youth in their

workforce. Youth with limited information and resources to search would thus be more likely to approach bigger companies and those with higher proportions of young people, if they were looking for work.

Firms where individuals with vouchers worked were not significantly more likely to have hired new workers in the past 12 months than those where non-voucher holders worked. Further more, the ratio of young hires to total hires, and the total number of new hires, was not significantly different for firms across these groups once firm size and the ratio of young people are controlled for. However, the point estimates indicate, once firm size and the proportion of existing young people are controlled for, that there is a positive association between the wage subsidy and both the probability of hiring and the proportion of young people. Given the data, we cannot disentangle the direction of causality – it may be that these individuals with vouchers entered newly created jobs or that it was firms that were more likely to be hiring that ended up hiring these young people.

Although the differences are not statistically significant, the firm-level estimates indicate that those in the voucher group worked in firms where average starting wages were higher, that were more likely to negotiate wages, and that offered on the job training.

5.6 Non-random attrition

The presence of individuals in subsequent rounds of the surveys may be correlated with the assignment of the voucher and the outcome variables of interest. Those with the voucher may be more likely to participate in followup rounds if they believe that contact with the researchers and the voucher advantages them in the labour market. Those in wage employment may be less likely to participate, since the opportunity cost of their time is now higher and they may believe that they no longer need to participate in the research, since they already have a job.

Table E9 in Appendix E presents the results of an OLS regression of the factors associated with attrition from the sample in a future round. Between the 2010 wave (the round where the voucher was allocated) and the 2011 round, neither being in the voucher group nor being currently employed is related to whether the person participated in the 2011 wave. However, being in the voucher group is negatively associated with attrition between 2011 and 2012 – those with the voucher are more likely to have been interviewed in 2012, and being employed is positively associated with attrition. This suggests that the results for 2012 may overstate the impact, since those in the control group who were employed in 2011 are more likely to drop out of the sample.

5.7 Cost-effectiveness

Estimates of the cost-effectiveness of a wage subsidy depend crucially on whether the observed transitions in the experiment are into jobs that would not have been present without the subsidy. It is impossible to tell this given the design of the experiment. Low take-up rates by firms suggest that individuals with wage subsidies may have filled existing jobs. However, this is balanced by much higher transition and retention rates for individuals who were employed in a firm that displayed an interest in the subsidy. The continued positive impact on

employment of being in the wage subsidy group, even after the voucher lapsed, indicates that there are benefits that last longer than the initial period for when the subsidy is valid.

In order to determine the potential national impact of a wage subsidy, we use labour force data from Statistics South Africa's QLFS—and these calculations are reported in Appendix G. The QLFS is a longitudinal survey and returns to the same dwelling units each round. Every quarter 25 per cent of the sample is rotated out of the sample. This means that individuals can be followed for four quarters but that observing transitions over a period of a year is impossible.¹² In order to create transition rates over a period of one year, we fit a non-linear projection to average transition rates over one, two and three quarters between 2011 and 2012.¹³ The sample is limited to all those not in employment, since people transition into employment from unemployment, school and other labour force states classified as not economically active. We estimate that approximately 7.6 per cent of those aged 18–29 who were not employed a year ago, transition into employment. Based on the numbers of non-employed in 2011, this suggests that approximately 354,000 young people who were not employed in 2011 entered jobs in 2012.

Three scenarios are presented for the number of new jobs which a youth employment tax incentive may create. The first is based on the observed increase in transitions found in the experiment. The wage subsidy vouchers increased wage employment by 25 per cent over one year. A 25 per cent increase in transitions into wage employment means that the transition rate would increase from 7.6 per cent to 9.5 per cent and that 88,000 new jobs are created as a result of the incentive.

The second scenario is based on the observed transitions in the experiment for those who were employed in firms that showed an interest in the subsidy. These individuals were 148 per cent more likely to be in employment a year later than those without vouchers. Under this scenario, the transition rate increases to 18.8 per cent and 523,000 jobs are created.

The third scenario is hypothetical and is intended to be illustrative of low transition rates. This scenario assumes that transition rates increased by 10 per cent, from 7.6 per cent to 8.3 per cent. In this scenario, 35,000 jobs are created.

The costs to the fiscus, in terms of forgone tax revenue and the cost per job, are estimated using the R5,000 value of the subsidy in this experiment. Higher values of the subsidy would likely induce higher transition rates, but these higher subsidy values would also need to be spread across the jobs that would be created regardless of the subsidy. Thus, the impact of a higher subsidy value on the cost per new job will be the outcome of two opposing effects: an increase in transitions induced by the higher amount of the subsidy, which leads to a lower

¹² Individuals are observed for four quarters in a row (for example, quarter 1 to quarter 4) but five quarters of observations are required to observe year-on-year transitions (for example, labour force status in quarter 1 2011 and labour force status in quarter 1 2012).

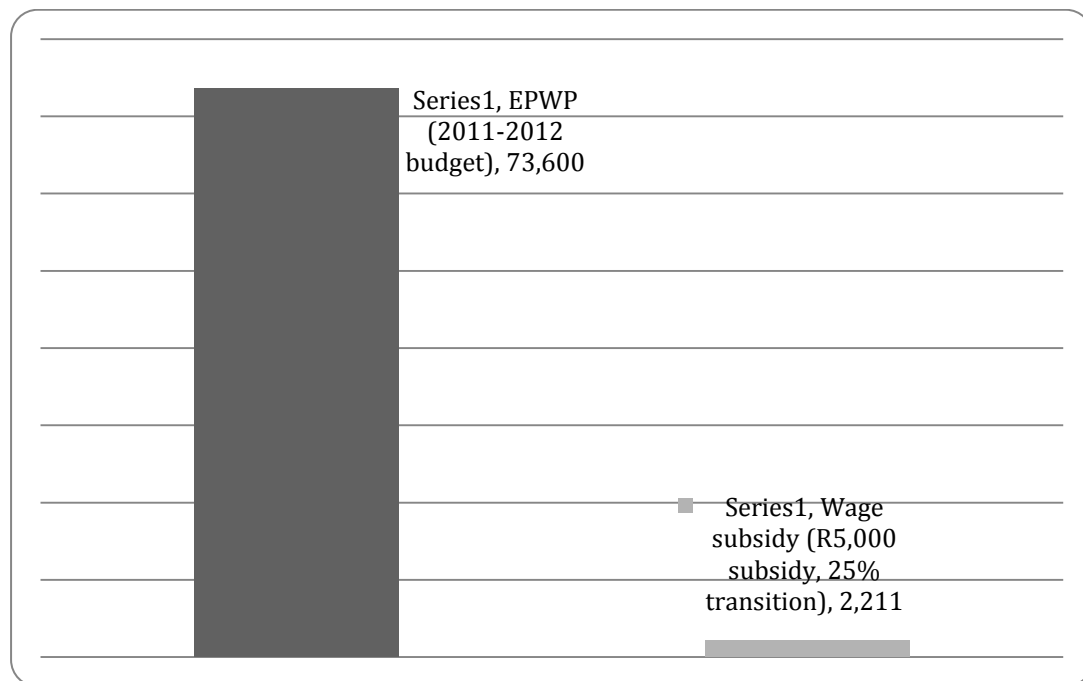
¹³ We use quarters 2 and 3 in 2011 as starting points, since these were the most recent QLFS datasets for which we have a panel dimension and for which we can look forward three periods.

cost per new job; and the higher amount of the subsidy spread across the new jobs not induced by the subsidy, which leads to an increase in cost per new job. The elasticity of the firm-level employment response to different levels of the subsidy is thus crucial in estimating what the actual cost per new job would be with higher subsidy levels. Unfortunately, we are unable to estimate this elasticity in the current experiment.

Based on the assumptions made about the likely transition rates and the amount of the incentive, estimates of the cost per new job range from R8,400 to R55,000. All of these estimates are below estimates for per job costs from the Expanded Public Works Programme (EPWP) of approximately R100,000 (CDE 2012). If the transition rates that are found in this paper are used, the cost per job is R25,000– considerably cheaper than the EPWP.

If we use the R5,000 subsidy amount with a transition rate of 25 per cent and the incentive covering all 20–29 year-olds who enter employment, the total programme will cost R2.2billion in forgone tax revenue. This is approximately 3 per cent of the current budget allocation to the EPWP.

Figure 7 Cost of the wage subsidy programme



Note: The costs are based on a subsidy of R5,000, 25 per cent transition and covering 20–29 year-olds entering employment (000,000s).

6. Policy recommendations

South Africa has high levels of youth unemployment and these levels, particularly among the most marginalised in the labour market, are getting worse. Since early entry into jobs can potentially have great, positive long-term consequences for an individual's future job trajectory, policies that enable young people to enter and keep jobs can decrease unemployment currently and in the future, and improve individual welfare. South Africa's National Treasury is considering one such policy, a temporary wage subsidy, which is part of a broader package of incentives to encourage youth employment. Given that the success of active labour market programmes is often context-specific, it is useful to know more about how young people and firms may respond to a wage subsidy in South Africa. This report summarises the findings of an RCT of a wage subsidy voucher given to young South Africans. Due to the design of the experiment, it is not a direct test of whether a subsidy would or would not work. Rather, it provides a better understanding of some of the labour market dynamics that may influence the outcome of the actual policy.

The key finding from this research is that this wage subsidy voucher had a positive, and relatively large, impact on the probability of young people being in employment, both when the voucher was valid and approximately one year after it had lapsed. Our results indicate that even two years after receiving the voucher, those in the treatment group were more likely to be in wage employment than those without a voucher. One explanation for this is that skills learnt on, or because of, the job, whether they be hard or soft, and the signalling effect which previous work experience provides, are important for success in the South African labour market. This result highlights the importance of policies, whether it is a wage subsidy or some other type of policy, that get young people into jobs.

The results from this research also suggest that take-up of the wage subsidy is likely to be relatively low. Very few firms in our study chose to take up the wage subsidy, even if they hired young people with vouchers. Interviews with firms indicate a number of reasons. For some, the administrative costs or burden of participating in our research were not worth the relatively small subsidy amount. In many large firms with numerous outlets, hiring decisions are often taken at the outlet level, while salaries are handled by a central human resources department, with low levels of coordination between the two. Some firms in the sample were also sceptical about the legitimacy of this project and whether they would actually be paid. Finally, interviewed firms also indicated that the subsidy amount was too low to compensate them for the risks of hiring a young person. This suggests that there is further scope for experimental research to examine how responsive firms are to different levels of subsidies. From a practical perspective, these results also indicate that, should the policy be implemented, it would need to be accompanied by an information programme providing details on how the subsidy would work.

The experiment also provides an indication of how the dynamics of the youth labour market work, which can inform policy design. A surprising finding is that those in the control group, especially those in households with other employed members, were more likely to turn down job offers than those who were allocated vouchers. One explanation for this is that there is some queuing in the South

African youth labour market, as young people who can wait for better-paid jobs do so. We can only speculate about why those in the treatment group did not engage in this behaviour. It may be that the voucher changed their perceptions of potential success in the job market and thus they were more willing, or able, to take these jobs. This may have been because they thought the voucher advantaged them or they were able to borrow money from their households to travel and incur the initial costs associated with accepting a job. It may also be that households with voucher holders were more likely to encourage the holder to take up the job, since it was perceived as part of a special programme. Or it may be that more information about jobs was passed onto the households of employed voucher holders, since they were linked into firms, and people in their networks may have known about the voucher.

The matched firm data, although it indicates that firms that employ young people are generally larger than the average firm, show that those with the voucher were employed in firms that were smaller than those which employed non-voucher holders. This suggests that a wage subsidy that only applies to firms below a certain size may be worth considering. Since smaller firms are likely to be less profitable than larger ones, this could avoid one of the criticisms of the policy that has been voiced by organised labour – that the subsidy is merely a transfer to already highly profitable firms. It may also complement existing government programmes, such as tax incentives for capital expenditure, which target smaller firms. The average size of a firm that employed voucher holders was 100 employees. This suggests that a size cut-off in the region of 100–200 workers would be appropriate. A wage subsidy design, bounded in terms of firm size, would provide an opportunity to evaluate the programme using a regression discontinuity design.

Simulations based on the transition rates found in this research indicate that, if these rates held for the economy as a whole, the incentive would create 88,000 new jobs. After including the costs of subsidising employment that would have been created regardless of the incentive, most estimates indicate that the cost per job would still be lower than that of programmes such as the Expanded Public Works Programme; overall, the programme would cost a fraction of that programme. However, even if the wage subsidy created the number of new jobs that the simulations indicate, youth unemployment would remain substantial. This suggests a wage subsidy is not enough, and that South Africa needs additional policies or reforms to substantially reduce youth unemployment.

Appendix A: Sample design

Table A1 Sample size and composition

Round	n	Attrition (% of previous round)	Proportion in:	
			Control	Treatment
Total sample				
2009	4,009		50.29	49.71
2010	3,064	0.76	49.25	50.75
2011	2,358	0.77	49.28	50.72
2012	1,866	0.79	48.15	51.85
EA sample				
2009	2,567		50.25	49.75
2010	1,860	0.72	48.71	51.29
2011	1,367	0.73	48.87	51.13
2012	1,058	0.77	47.16	52.84
LC sample				
2009	1,442		50.35	49.65
2010	1,204	0.83	50.08	49.92
2011	991	0.82	49.85	50.15
2012	807	0.81	49.44	50.56

Notes: EA= enumeration area; LC=labour centre

Appendix B: Survey instruments

MAIN SECTION (Directed)

0ID (Directed)

1. **Enum code store** (enum_code) - calculation, single item
2. **Survey code store** (survey_code) - calculation, single item
3. **ID store** (id) - lookup, single item
4. **Date start store** (date_start) - auto date, single item
5. **Start time store** (time_start) - auto time, single item
6. **Are you able to interview this person?** (interview_possible) - menu, single item
7. **Enumerator what is the DATE today?** (input_date) - input date, single item
8. **Is this the first time you are interviewing this person?** (first_time) - menu, single item
9. **Which section would you like to start from?** (section_start) - menu, single item
10. **Contact and other details** (Directed)
11. **Treatment** (Directed)
12. **Enumerator: You have completed the CONTACT AND OTHER DETAILS section. Are you ready to proceed?** (contact_complete) - menu, single item
13. **Education** (Directed)
14. **Enumerator: You have completed the EDUCATION section. Are you ready to proceed?** (education_complete) - menu, single item
15. **Family relationships and characteristics** (Directed)
16. **Enumerator: You have completed the FAMILY RELATIONSHIPS AND CHARACTERISTICS section. Are you ready to proceed?** (family_complete) - menu, single item
17. **Diary** (Directed)
18. **Enumerator: You have completed the DIARY section. Are you ready to proceed?** (diary_complete) - menu, single item
19. **Activities section** (Directed)
20. **Enumerator: You have completed the ACTIVITIES section. Are you ready to proceed?** (diary_complete_1) - menu, single item
21. **To thank you for participating, we would like to send you R10 prepaid airtime. Please enter in the prepaid cell number we should send the money to:** (prepaid_number) - formatted, single item
22. **Please select the prepaid-provider of {{prepaid_number}}:** (prepaid_provider) - menu, single item
23. **End time** (time_end) - auto time, single item
24. **Date end** (date_end) - auto date, single item
25. **Thank you message** - message, none
26. **Enumerator post-survey questionnaire** (Directed)

COMMON SECTION (Directed)

Working for someone else (Directed)

1. **WORKING/EMPLOYMENT FOR SOMEONE ELSE** (Directed)
2. **REMUNERATION: WORKING FOR SOMEONE ELSE** (Directed)

WORKING/EMPLOYMENT FOR SOMEONE ELSE (Directed)

1. **How many jobs (work INCLUDING UNPAID WORK) did you have at DIFFERENT employers (person/business/government/non-profit/family firms) in the LAST (PAST) month?** (howmany_jobs) - number, single item
2. **Jump if only one job** - jump, none
3. **How much income do you get per month in TOTAL BEFORE TAX for ALL these jobs?** (job_income_bt) - number, single item
4. **How much income do you get per month in TOTAL AFTER TAX for ALL these jobs?** (job_income_at) - number, single item
5. **Work for someone message** - message, none
6. **B1.1a Please enter in the name of employer (where you were working for SOMEONE ELSE) that you spend the most time working at** (b1_1a) - text, single item
7. **What year did you start this job at** {{b1_1a}}? (bjob_start_year) - menu, single item
8. **What month did you start this job at** {{b1_1a}}? (bjob_start_month) - menu, single item
9. **Is {{b1_1a}} the name of a person, a business, or a branch of government?** (personorcompany) - menu, single item
10. **Does this job at {{b1_1a}} require SPECIALIZED skills that require an academic or trade/craft qualification (registration)?** (job_skill) - menu, single item
11. **B1.1b What is {{b1_1a}}'s address?** (b1_1b) - text, single item
12. **What is {{b1_1a}}'s telephone number** (employer_telephone) - number, single item
13. **B1.2 Is this a Learnership - in other words does the respondent have a learnership agreement with a SETA?** (b1_2) - menu, single item
14. **B1.4 What type of business do you work for?** (b1_4) - menu, single item
15. **B1.4a Is this contractual work? (i.e., a job where the end of the job is specified and is not indefinite)** (b1_4a) - menu, single item
16. **How long is the contract for?** (contract_length) - menu, single item
17. **Are you sure you are a permanent employee?** (permanent) - menu, single item
18. **B1.6 What is your main method of transport to work?** (b1_6) - menu, single item
19. **B1.7 Do you have to pay for transport to work (including petrol costs, taxi fare etc.)?** (b1_7) - menu, single item
20. **B1.8 Approximately how much does it cost per month?** (b1_8) - number, single item

21. **B1.9 How long does it usually take to get to work in the morning (one direction only in minutes)** (b1_9) - number, single item
22. **B1.11 In this job are you related to the owner/manager?** (b1_11) - menu, single item
23. **B1.11s Describe your relationship** (b1_11s) - menu, single item
24. **B1.12 In this job are you related to other workers?** (b1_12) - menu, single item
25. **B1.12s Describe your relationship** (b1_12s) - ticklist, single item
26. **B1.13 What size is the company in terms of the number of employees?** (b1_13) - menu, single item
27. **How many firms did you contact in the month before you found this job?** (firms_contacted_month) - number, single item
28. **What did you do to look for work during the last month before you found this job? (Read out ALL options) Name your most important search method first!** (f1_1_worker) - ticklist, single item
29. **On average, how many days in a week did you look for a job the month before you found this job?** (days_a_week_searched) - number, single item
30. **B1.16 How did you find out that this job was available?** (b1_16) - menu, single item
31. **B1.16a How did your contact know about the availability of the job?** (b1_16a) - menu, single item
32. **B1.16b Describe your relationship with the person who told you about the job (the contact)** (b1_16b) - menu, single item
33. **B1.16c How did the contact tell you about the job?** (b1_16c) - menu, single item
34. **B1.17 How did you get this job?** (b1_17) - menu, single item
35. **B1.17a How did your contact help you to get the job?** (b1_17a) - menu, single item
36. **B1.18 Describe your relationship with the person who got you the job** (b1_18) - menu, single item
37. **B1.19 Did you have a job interview?** (b1_19) - menu, single item
38. **B1.19a How long was the interview?** (b1_19a) - menu, single item
39. **B1.19b During recruitment did the employer ask you to do any other tasks besides the interview?** (b1_19b) - ticklist, single item
40. **B1.19c Did you have to provide references?** (b1_19c) - menu, single item
41. **B1.20 Describe your relationship with the person(s) who gave the reference(s).** (b1_20) - ticklist, single item
42. **B1.21 Did you have a probation period?** (b1_21) - menu, single item
43. **B1.21a How long was your probation period?** (b1_21a) - menu, single item
44. **B1.22 Did you have any training when you started?** (b1_22) - menu, single item
45. **How long was this training in days?** (training_duration) - number, single item
46. **B1.23 Is there a union in this firm?** (b1_23) - menu, single item
47. **B1.24 Are you a union member?** (b1_24) - menu, single item

48. **B1.25 What is your job title?** (b1_25) - menu, single item
49. **B1.26 Have you received any promotions in this job?** (b1_26) - menu, single item
50. **B1.28 What is the average number of days worked a week at {{b1_1a}}?** (b1_28) - number, single item
51. **B1.29 What is the average number of hours worked a day at {{b1_1a}}?** (b1_29) - number, single item
52. **What is the average number of weeks worked in a month at {{b1_1a}}?** (weeks_permonth_wage) - number, single item
53. **Calculate hours a week** (hours_a_week_wage) - calculation, none
54. **Do you work approximately {{hours_a_week_wage}} hours in a normal week? Remember that most people work 40 hours a week** (normalweek_hours_wage) - menu, none
55. **B1.30 How happy are you at this job?** (b1_30) - menu, single item
56. **What is the MAIN reason you are {{b1_30}} in this job?** (b1_30_why) - menu, single item

REMUNERATION: WORKING FOR SOMEONE ELSE (Directed)

1. **Store firm name** (firm_namet) - calculation, none
2. **B2.1 How often do you get paid at {{firm_namet}}?**
Every: (b2_1) - menu, single item
3. **B2.2a What is the total salary per {{b2_1}} BEFORE taxes you get paid at {{firm_namet}}?** (b2_2a) - number, single item
4. **B2.2b What is the total salary per {{b2_1}} AFTER taxes you get paid at {{firm_namet}}?** (b2_2b) - number, single item
5. **Calculate taxes** (taxes) - calculation, none
6. **Jump if taxes are negative** - jump, none
7. **Has this wage changed since you started working at {{firm_namet}}?** (wage_changed) - menu, none
8. **B2.1_start How often did you get paid at {{firm_namet}} when you started working? Every:** (b2_1_start) - menu, single item
9. **B2.2a_start What was the total salary per {{b2_1_start}} BEFORE taxes you got paid at {{firm_namet}} when you started working?** (b2_2a_start) - number, single item
10. **B2.2b_start What was the total salary per {{b2_1_start}} AFTER taxes you you got paid at {{firm_namet}} when you started working?** (b2_2b_start) - number, single item
11. **Why did this wage change from R {{b2_2a_start}} every {{b2_1_start}} to R {{b2_2a}} every {{b2_1}}?** (salary_change_reason) - menu, single item
12. **B2.2c Were you able to negotiate this amount when you started your job?** (b2_2c) - menu, single item
13. **B2.3s How much does {{firm_namet}} contribute towards your medical aid per MONTH?** (b2_3s) - number, single item
14. **B2.5 How much does {{firm_namet}} contribute towards a pension scheme per MONTH?** (b2_5) - number, single item
15. **B2.6s How much does {{firm_namet}} give you as a travel allowance per {{b2_1}}?** (b2_6s) - number, single item

16. **B2.8a Does {{firm_namet}} contribute towards UIF for you?** (b2_8a) - menu, single item

ID (Directed)

1. **Please enter in your enumerator code** (enum_code_t) - number, none
2. **Please enter the respondents's survey number on the top of the prompt sheet** (survey_code_t) - number, none
3. **Name store** (a1_1t) - lookup, none
4. **Is this {{a1_1t}}?** (correct_respondent) - menu, none
5. **Date** (iddate) - auto date, none
6. **Time** (idtime) - auto time, none
7. **ID** (identifier) - calculation, identifier

Working for yourself (Directed)

1. **WORKING FOR YOURSELF** (Directed)
2. **REMUNERATION: WORKING FOR YOURSELF** (Directed)

Contact and other details (Directed)

1. **Survey code store (contact details)** (survey_codet_cd) - calculation, none
2. **Name store** (a1_1t_cd) - calculation, none
3. **How would {{a1_1t_cd}} describe how he/she feels about his/her life IN GENERAL?** (a6_1_general) - menu, single item
4. **Do you like to take risks in uncertain situations?** (risk_taker) - menu, single item
5. **What PROVINCE does {{a1_1t_cd}} currently LIVE in?** (province) - menu, single item
6. **What AREA (e.g.Orlando East, Seshego, Umlazi) in {{province}} does {{a1_1t_cd}} currently live in?** (area) - menu, single item
7. **What CITY or TOWN (e.g. Ekurhuleni, Polokwane, eThekwini) is {{area}} in {{province}} in or closest too?** (city) menu, single item
8. **What is the NAME of the street (or the closest street. e.g. Nelson Mandela Road) in {{area}} that {{a1_1t_cd}} currently lives on?** (a1_2_street) - text, single item
9. **What is the NUMBER (e.g. 10, 1010A) on {{a1_2_street}} of the dwelling that {{a1_1t_cd}} currently lives in? Use 0 if {{a1_1t_cd}} does not know, and 00 if {{a1_2_street}} is the nearest street**(a1_2_street_number) - text, single item
10. **Please enter in {{a1_1t_cd}}'s cellphone number** (a1_3b) - formatted, single item
11. **Please enter in the cellphone number of your mother, father or the family member you speak to most often** (motherfather_cellnumber) - formatted, single item
12. **Does the respondent have an email address?** (email) - menu, single item

13. **Please enter in the respondent's email address** (email_address) - text, single item
 14. **Does {{a1_1t_cd}} have a SOUTH AFRICAN ID book?** (had_SAID) - menu, single item
 15. **Why does {{a1_1t_cd}} not have a SOUTH AFRICAN ID book?** (reasonnoid) - menu, single item
 16. **Which country is {{a1_1t_cd}} from?** (country_from) - menu, single item
- Unemployed and NOT searching** (Directed)
1. **G1.1 Why are you not looking for work?** (g1_1_1) - menu, single item

All (Directed)

1. **H1.1 If you were offered a suitable job would you be prepared to start within a week?** (h1_1) - menu, single item
2. **If you were offered a suitable job would you be prepared to start within a month?** (h1_1_month) - menu, single item
3. **Why will you not accept a suitable job offer?** (never_looking) - menu, single item
4. **Jump to end of section** - jump, none
5. **H1.6 How many days per week would you be prepared to work?** (h1_6_days) - number, single item
6. **H1.6 How many hours per day would you be prepared to work?** (h1_6_hours) - number, single item
7. **Calculate hours per week** (hours_perweek) - calculation, none
8. **Jump if hours per week < 30** - jump, none
9. **Jump if hours per week > 60** - jump, none
10. **Jump over** - jump, none
11. **Are you sure that you want to work approximately {{hours_perweek}} hours per week?** (sure_hoursperweek) - menu, single item
12. **H1.5 What is the absolute MINIMUM amount of money you are prepared to work {{h1_6_hours}} hour(s) a day for {{h1_6_days}} day(s) a week for 4 weeks a MONTH - with NO other benefits?**(h1_5) - number, single item
13. **Calculate hourlyreswage again** (hourly_reswage2) - calculation, single item
14. **Jump if > 8** - jump, none
15. **Jump if < 50** - jump, none
16. **Jump over 2** - jump, none
17. **Are you sure you that R {{hourly_reswage2}} per hour is the MINIMUM you are prepared to work for?** (hourly_reswage_yesno_1) - menu, single item
18. **H1.7 What is the MAXIMUM distance you would be prepared to travel per day for this job working these hours and earning R {{h1_5}}? (in kilometres)** (h1_7) - number, single item
19. **H1.8 What is the MAXIMUM amount you would be willing to pay per month for transport for this job working these hours and earning R {{h1_5}}?** (h1_8) - number, single item

20. **How good do you think your chances of finding such a job in the next three months are?** (findjobin_threemonths) - menu, single item
21. **How good do you think your chances of finding such a job in the next year are?** (findjobin_year) - menu, single item
22. **H1.15a On a scale from 0 to 10 - What do you think is the likelihood of you getting employed in the next 12 months?** (h1_15a) - number, single item
23. **H1.16 What is the best way for someone like you with your skills/education level to get employed?** (h1_16) - menu, single item
24. **Did you do ANYTHING to look for a job in the past month, even if it was just for a few minutes (e.g. looking through the job adverts in a newspaper etc.** (look_for_job) - menu, single item
25. **What is the main reason you are searching for a job?** (reason_searching) - menu, single item
26. **F1.1 What have you been doing to look for work during the last month? (Read out ALL options) Name your most important search method first!** (f1_1) - ticklist, single item
27. **F1.2a How many days did you spend looking for work in the last month?** (f1_2a) - number, single item
28. **F1.2b On a normal day, how many hours do you spend looking for work?** (f1_2b) - number, single item
29. **F1.3 How much money did you spend last month looking for work?** (f1_3) - number, single item
30. **F1.10 How many firms did you contact last month while searching for a job?** (f1_10) - number, single item
31. **F1.10a How would you describe the firms that you contacted? Tick in the order of importance** (f1_10a) - ticklist, single item
32. **A6.4 How many employed friends/family members can you turn to who say that they may be able to find you work at their or other workplaces?** (a6_4) - number, single item
33. **A6.5 On a scale from 0 to 10: How likely do you think that anyone of your contacts will get you a job in the next six months?** (a6_5) - number, single item
34. **Do you regard yourself as:** (self_reported_status) - menu, single item
35. **F1.6 Why do you think that you are unemployed/not economically active? (Choose most suitable)** (f1_6) - menu, single item

WORKING FOR YOURSELF (Directed)

1. **How many different businesses did you run in the last month?** (howmany_businesses) - number, single item
2. **Jump if only one business** - jump, none
3. **How much income (after business expenses) do you get per month in TOTAL BEFORE TAX for all these businesses?** (self_income_bt) - number, single item

4. **How much income (after business expenses) do you get per month in TOTAL AFTER TAX for all these jobs?** (self_income_at) - number, single item
5. **Work for yourself message** - message, none
6. **C1.1a Please enter the name of your SELF-EMPLOYMENT business that you spend most of your time on? e.g. Big Spaza Shop** (c1_1a) - text, single item
7. **What year did you start {{c1_1a}}** (cjob_start_year) - menu, single item
8. **What month did you start {{c1_1a}}** (cjob_start_month) - menu, single item
9. **C1.2 Description of business?** (c1_2) - text, single item
10. **C1.5 Type of self-employment/business** (c1_5) - menu, single item
11. **Why is your business informal?** (informal_why) - ticklist, single item
12. **C1.10 Do you employ other people through {{c1_1a}}?** (c1_10) - menu, single item
13. **C1.10s How many people do you employ at {{c1_1a}}?** (c1_9s) - number, single item
14. **C1.11 Did you start this business?** (c1_11) - menu, single item
15. **C1.12 Have you ever received any support for the business {{c1_1a}}?** (c1_12) - menu, single item
16. **C1.13 How did/do you learn to do this activity {{c1_2}}?** (c1_13) - menu, single item
17. **C1.28 What is the average number of days you work in a week at {{c1_1a}}?** (c1_28) - number, single item
18. **C1.29 What is the average number of hours worked a day at {{c1_1a}}?** (c1_29) - number, single item
19. **What is the average number of weeks worked in a month at {{c1_1a}}?** (weeks_permonth_self) - number, single item
20. **Calculate hours a week** (hours_a_week_self) - calculation, none
21. **Do you work approximately {{hours_a_week_self}} hours in a normal week? Remember that most people work 40 hours a week** (normalweek_hours) - menu, none
22. **C1.19 How happy are you working for yourself?** (c1_19) - menu, single item
23. **Why are you working for yourself?** (whyworkingforself) - menu, single item
24. **How much profit (the money you receive less your business expenses) do you usually make in a day that lasts {{c1_29}} hours?** (income_day) - number, single item
25. **How much profit (the money you receive less than your business expenses) do you usually make in a week where you work {{c1_29}} hours a day for {{c1_28}} days in that week?** (income_day_1) - number, single item
26. **C1.6 What is your main method of transport to work at {{c1_1a}}?** (c1_6) - menu, single item
27. **C1.7 Do you have to pay for transport to work at {{c1_1a}} (including petrol costs, taxi fare etc)?** (c1_7) - menu, single item

28. **C1.8 Approximately how much does this cost per month?** (c1_8) - number, single item
29. **C1.9 How long does it usually take to get to work at {{c1_1a}} in the morning (one direction only, in minutes)** (c1_9) - number, single item

REMUNERATION: WORKING FOR YOURSELF (Directed)

1. **Store self name** (self_namet) - calculation, none
2. **C2.1a Total take home monetary value per month before taxes while CURRENTLY working for yourself at {{self_namet}}?** (c2_1a) - number, single item
3. **C2.1b Total take home monetary value per month after taxes while CURRENTLY working for yourself at {{self_namet}}?** (c2_1b) - number, single item

Education (Directed)

1. **A2.5 Do you think you are confident when speaking to people in English?** (a2_5) - menu, single item
2. **Are you currently still in school (even if you are on school vacation)?** (inschool) - menu, single item
3. **A4.13 What is the highest grade you have PASSED (COMPLETED) at school? If you wrote but did not pass the Matric certificate this means GRADE11/STANDARD9/FORM4.** (a4_13) - menu, single item
4. **Have you ever written the matric / senior certificate exams?** (matric_ever) - menu, single item
5. **A4.12 Do you have a Matric certificate?** (a4_12) - menu, single item
6. **Are you sure you have a university exemption?** (exemption_check) - menu, single item
7. **In what year did you FIRST write the Matric final exam?** (a4_12_firstyear) - menu, single item
8. **Have you ever written or are you busy studying for upgrade (or new subject) exams for your Matric certificate e.g. where you redo certain subjects so that you can get a higher mark?** (upgrade) - menu, single item
9. **Did you pass these upgrade/new subject exams?** (upgrade_pass) - menu, single item
10. **I1.2a Did you take Mathematics as a subject when you completed {{a4_13}}?** (i1_2a_1) - menu, single item
11. **I1.2as Did you pass?** (i1_2as_1) - menu, single item
12. **I1.2b Did you take English as a subject when you completed {{a4_13}}?** (i1_2b_1) - menu, single item
13. **I1.2bs Did you pass?** (i1_2bs_1_1) - menu, single item
14. **A4.14 How old were you when you completed {{a4_13}}?** (a4_14) - number, single item
15. **In what year did you complete {{a4_13}}?** (a4_14_year) - menu, single item

16. **Have you been part of learnership since the beginning of 2011 (which is registered with a SETA)?** (learnership) - menu, single item
17. **How many learnerships have you participated in since the beginning of 2011?** (learnerships_number) - number, single item
18. **How many learnerships have you completed since the beginning of 2011?** (learnerships_completed) - number, single item
19. **Which SETA were/are you registered under? (If more than one, please refer to the most recently completed one, or the most recent one if you have not completed the agreement)**(learnership_seta) - menu, single item
20. **What was the learnership title in this agreement with {{learnership_seta}}? (e.g. BML Learnership Level 6)** (learnership_title) - text, single item
21. **Where did you get your THEORETICAL training for this learnership agreement with {{learnership_seta}}?** (learnership_trainingprovider) - text, single item
22. **Where did you get you WORK experience for this learnership agreement with {{learnership_seta}}?** (learnership_firm) - text, single item
23. **How many months experience did you get (have you got) at {{learnership_firm}} towards your {{learnership_title}} as PART of your agreement with {{learnership_seta}}?**(learnership_firm_months) - number, single item
24. **What year did you start this learnership agreement with the {{learnership_seta}}?** (learnership_startyear) - menu, single item
25. **What month did you start this learnership agreement with the {{learnership_seta}}?** (learnership_startmonth) - menu, single item
26. **Did you complete the learnership agreement?** (complete_learnership) - menu, single item
27. **What year did you end this learnership agreement with the {{learnership_seta}}?** (learnership_endyear) - menu, single item
28. **What month did you end this learnership agreement with the {{learnership_seta}}?** (learnership_endmonth) - menu, single item
29. **What is the highest level of education that you have successfully completed?** (highest_level_education) - menu, single item
30. **What was the name of the HIGHEST certificate/diploma/degree you passed? e.g. BCOM Human Resources** (tertiary_qualification_current) - text, single item
31. **Where did you obtain {{tertiary_qualification_current}} ?e.g. The Universtiy of Limpopo** (tertiary_name_current) - text, single item
32. **What type of institution is {{tertiary_name_current}}?** (highest_institution) - menu, single item

33. **How long did it take you to complete this {{tertiary_name_current}}?** (highest_duration) - menu, single item
34. **Was this {{tertiary_qualification_current}} full or part-time?** (full_part_time) - menu, single item
35. **Who paid for this {{tertiary_qualification_current}} at {{tertiary_name_current}}?** (whopaid_qualification) - ticklist, single item
36. **Did you have to pay back this money?** (payback) - menu, single item
37. **How old were you when you completed this {{tertiary_qualification_current}} at {{tertiary_name_current}}?** (highest_age) - number, single item
38. **In what year did you COMPLETE {{tertiary_name_current}}?** (highest_year) - menu, single item

Family relationships and characteristics (Directed)

1. **Name store** (a1_1t_f) - calculation, none
2. **In which of the following months of 2011 and 2012 did the respondent live in his/her current household?** (2010_hh) - ticklist, single item
3. **Has {{a1_1t_f}} moved to a new household (i.e., with different people in the household) since he/she was interviewed last year?** (new_hh) - menu, single item
4. **Why did {{a1_1t_f}} move out of the household?** (why_newhh) - menu, single item
5. **How many people are there currently in his/her HOUSEHOLD INCLUDING {{a1_1t_f}}? (your household includes those people that share expenses and cook together with you)**(number_in_household) - number, single item
6. **How many people in {{a1_1t_f}}'s household are UNDER 15 years of age?** (a4_19b_under15) - number, single item
7. **How many people in {{a1_1t_f}}'s household are 60 or OVER 60 years of age?** (a4_19b_over64) - number, single item
8. **A4.19b How many people in this HOUSEHOLD are currently earners? (Self employed or wage/salary employed)** (a4_19b) - number, single item
9. **How many people - EXCLUDING {{a1_1t_f}} - in this HOUSEHOLD are currently earners? (Self employed or wage/salary employed)** (a4_19b_excluding) - number, single item
10. **How many - EXCLUDING {{a1_1t_f}} - people in the HOUSEHOLD are currently FULL-TIME wage/salary-employed?** (a4_19b_wage) - number, single item
11. **How many - EXCLUDING {{a1_1t_f}} - people in the HOUSEHOLD are currently FULL-TIME self-employed?** (a4_19b_self) - number, single item
12. **How many people are there in {{a1_1t_f}}'s IMMEDIATE family EXCLUDING {{a1_1t_f}} that live in this HOUSEHOLD**

- of **{{number_in_household}}**? (number_in_immediate) - number, single item
13. **Who - EXCLUDING **{{a1_1t_f}}** - is the MOST EDUCATED person in his/her IMMEDIATE FAMILY that is older than 14, even if you don't live with your immediate family?** (immediate_highest) - menu, single item
14. **Enumerator: Are you sure that this person is an orphan with absolutely NO living biological family?** (orphan) - menu, single item
15. **What is the highest level of education that your **{{immediate_highest}}** has successfully completed?** (if_highest_level_education) - menu, single item
16. **When did your **{{immediate_highest}}** get this **{{if_highest_level_education}}**?** (immediate_education_when) - menu, single item
17. **What does your **{{immediate_highest}}** currently do? He/she:** (if_highest_living) - menu, single item
18. **Approximately how much does **{{immediate_highest}}** earn PER MONTH** (if_most_educated_earning) - menu, single item
19. **Does **{{a1_1t_f}}** live in the same household as his/her **{{immediate_highest}}**?** (immediate_highest_hh) - menu, single item
20. **Is **{{a1_1t_f}}**'s **{{immediate_highest}}** the most educated person in the household - EXCLUDING **{{a1_1t_f}}**?** (immediate_highest_hh_1) - menu, single item
21. **Who - EXCLUDING **{{a1_1t_f}}** - is the MOST EDUCATED person in his/her household that is older than 14?** (household_highest) - menu, single item
22. **What is the highest level of education that your/this **{{household_highest}}** has successfully completed?** (highest_level_education_1_1) - menu, single item
23. **What does this **{{household_highest}}** currently do? He/she:** (household_highest_living) - menu, single item
24. **Approximately how much does **{{household_highest}}** earn PER MONTH?** (hh_most_educated_earning) - menu, single item
25. **A5.10 What is **{{a1_1t_f}}**'s marital status** (a5_10) - menu, single item
26. **A5.12 Do you have any children?** (a5_12) - menu, single item
27. **A5.13a How many children do you have?** (a5_13a) - number, single item
28. **How many of these **{{a5_13a}}** children currently live with you?** (children_living_with) - number, single item
29. **Was your last child planned or unplanned?** (child_planned_last) - menu, single item
30. **Who looks after your children when you are WORKING, STUDYING, or LOOKING FOR WORK?** (looks_after) - ticklist, single item
31. **For how many of your **{{a5_13a}}** children do you receive a child support grant from Government?** (no_child_support) - number, single item

32. **Jump if greater than number of children** - jump, none
33. **Approximately how much MONEY per MONTH do you GET from the father/mother of the child for looking after/maintenance of the child(ren)?** (get_maintenance) - number, single item
34. **Approximately how much MONEY do you PAY per MONTH to the father/mother of the child for looking after/maintenance of the child(ren)?** (pay_maintenance2) - number, single item
35. **What year was your first-born child born in?** (firstchild_birtheyear) - number, single item
36. **What month of {{firstchild_birtheyear}} was your first-born child born in?** (firstchild_birthismonth) - menu, single item
37. **Are you currently living with the father/mother of your first-born child?** (firstchild_livingspouse) - menu, single item
38. **Only one child jump** - jump, none
39. **What year was your last-born child (number {{a5_13a}}) born in?** (lastchild_birtheyear) - number, single item
40. **What month of {{lastchild_birtheyear}} was your last-born child born in?** (lastchild_birthismonth) - menu, single item
41. **Are you currently living with the father/mother of your last-born child?** (firstchild_livingspouse_1) - menu, single item
42. **Are you or your partner (your wife or girlfriend) pregnant?** (pregnant) - menu, single item
43. **Jump over plan child in next year (12 months)** - jump, none
44. **Do you plan to have a child in the next year (12 months)?** (planchildren) - menu, single item
45. **How many children do you want to have during your lifetime?** (number_children_plan) - number, single item
46. **Do you think having children makes it more difficult to find a job?** (children_employment_difficult) - menu, single item
47. **A6.1 How would you describe your state of health? (ENUMERATOR - DO NOT READ THIS LIST OUT LOUD)** (a6_1) - menu, single item
48. **B53.10 How do you support yourself? SELECT ALL THE APPROPRIATE ITEMS** (b53_10) - ticklist, single item
49. **B53.11 How much do you get per month (including income, value of gifts, food etc)?** (b53_11) - number, single item
50. **B53.11 How much do you get per month just from INCOME (NOT including the value of gifts/food etc.)** (b53_11_nq) - number, single item
51. **Do you get any money from ANYONE that gets a Government pension grant or any other type of Government grant?** (grant_income) - menu, single item
52. **How much money does this person/do these people give you on average every month?** (grant_income_value) - number, single item
53. **B53.13 How much do you spend on your expenses per month?** (b53_13) - number, single item
54. **NEAR TO HOME: What is the MINIMUM MONTHLY wage you are prepared to work 8 hours a day 5 days a week for NEAR to your home?** (a6_8_near) - number, single item

55. **ANYWHERE: A6.8 What is the MINIMUM MONTHLY wage you are prepared to work 8 hours a day 5 days a week for?** (a6_8) - number, single item
56. **Are you sure that R{{a6_8}} a MONTH is the MINIMUM (LOWEST) that you are prepared to work for such a full-time job?** (a6_8_check) - menu, single item
57. **Jump if < 1000** - jump, none
58. **Jump if > 10000** - jump, none
59. **Jump over** - jump, none
60. **Calculate dailyreswage** (daily_reswage) - calculation, single item
61. **Round daily reswage** (daily_reswage_round) - calculation, single item
62. **Are you sure you that R {{daily_reswage_round}} per day is the MINIMUM you are prepared to work for?** (hourly_reswage_yesno) - menu, single item
63. **If you were offered a permanent full-time job near to where you live and that pays R 1500 per MONTH for the first year, would you take it - YES or NO?** (take_min_wage) - menu, single item
64. **Jump if a6_8 less than 1500** - jump, none
65. **Why would you take such a job if you just said the minimum you would work for is R {{a6_8_near}} a month?** (why_inconsistent) - menu, single item
66. **a6_8multiplied by 1.3** (a6_8m13) - calculation, single item
67. **a6_8multiplied by 0.8** (a6_8m08) - calculation, single item
68. **R1500 - How good do you think your chances are of finding any PERMANENT FULL-TIME job in the NEXT 3 months that PAYS R1500 A MONTH, if you wanted such a job?** (dk_1_1500) - menu, single item
69. **IF YOU WERE COMPLETELY DESPERATE FOR A JOB, what is the MINIMUM MONTHLY wage you would be prepared to work 8 hours a day 5 days a week for?** (a6_8_desperate) - number, single item
70. **Would you accept a temporary job in the area you live that pays R75 a day where you work 8 hours 20 days a month for 1 month?** (temporary_day_job) - menu, single item
71. **Main survey code store** (survey_code_t) - calculation, single item
72. **Random store** (rand_store_t) - lookup, single item
73. **Minimum split duration** (min_split_duration) - calculation, none
74. **DK time stamp 1** (dkt1) - auto time, single item
75. **Invoke stopwatch first split** (is1) - stopwatch, none
76. **R{{a6_8m13}} - How good do you think your chances are of finding any PERMANENT FULL-TIME job in the NEXT 3 months that PAYS R{{a6_8m13}} A MONTH, if you wanted such a job?** (dk_1) - menu, single item
77. **First split** (s1) - stopwatch, none
78. **Jump if split less than minimum duration** - jump, none
79. **DK time stamp 2** (dkt2) - auto time, single item
80. **Invoke stopwatch second split** (is2) - stopwatch, none

81. **How good do you think YOUR chances of finding SUCH a permanent full-time job are when COMPARED to other young people who LIVE IN THE SAME AREA as you, if you wanted such a job?**(dk_3) - menu, single item
82. **Second split** (s2) - stopwatch, none
83. **Jump if second split is less than minimum duration** - jump, none
84. **Tell survey_code** (tell_surveycode) - calculation, single item
85. **Tell store** (tell_store) - lookup, single item
86. **Jump if not tell** - jump, none
87. **DK time stamp 3** (dkt3) - auto time, single item
88. **Invoke stopwatch third split** (is3) - stopwatch, none
89. **VERY low (VERY poor/VERY bad)** - message, none
90. **Explain: 'Wits University research shows that the chances of young people with the same education as you and living in your area finding SUCH work in the next 3 months are VERY low (VERY poor/VERY bad)'** (dk_4_statement) - menu, single item
91. **Third split** (s3) - stopwatch, none
92. **Jump if third split is less than minimum duration** - jump, none
93. **DK time stamp 4** (dkt4) - auto time, single item
94. **Invoke stopwatch fourth split** (is4) - stopwatch, none
95. **NOW that I have told you this, how good do you think your chances are of finding any permanent full-time job in the next 3 months that PAYS R {{a6_8m13}} a month, if you wanted such a job?**(dk_4) - menu, single item
96. **Fourth split** (s4) - stopwatch, none
97. **Jump if fourth split is less than minimum duration** - jump, none
98. **DK time stamp 5** (dkt5) - auto time, single item
99. **Why did the respondent change (or NOT change) his/her mind about his/her chances to {{dk_4}}? If he/she did not change explain why** (why_change_mind) - menu, single item
100. **DK time stamp 5_2** (dkt5_2) - auto time, single item
101. **Invoke stopwatch fifth split** (is5) - stopwatch, none
102. **R{{a6_8m08}} - What do you think the chances of SOMEBODY ELSE with the same education living in your area has of finding a permanent full-time job in the next 3 months that PAYS R {{a6_8m08}} A MONTH?** (dk_2) - menu, single item
103. **Fifth split** (s5) - stopwatch, none
104. **Jump if fifth split is less than minimum duration** - jump, none
105. **DK time stamp 6** (dkt6) - auto time, single item
106. **A6.13 Do you have a drivers license?** (a6_13) - menu, single item
107. **Have you ever had to appear in a court of law?** (appear_in_court) - menu, single item
108. **A5.27 Are you in debt?** (a5_27) - menu, single item
109. **A5.27a What type of debt is it?** (a5_27a) - ticklist, single item
110. **A5.28 Do you have any savings?** (a5_28) - menu, single item
111. **A5.28a What form of savings?** (a5_28a) - ticklist, single item

112. **Have you ever been blacklisted for outstanding debts?** (blacklisted) - menu, single item
113. **Have you ever been offered any work/job that you did not take, EVEN IF the job was unpaid and just for one day?** (nottake_joboffer) - menu, single item
114. **How many offers have you turned down?** (notake_number) - number, single item
115. **When did you last get such an offer (YEAR)?** (notake_year) - menu, single item
116. **When did you last get such an offer (MONTH)?** (notake_month) - menu, single item
117. **Was this offer made for a job working for a person, business, branch of government, non-profit organisation or a labour broker?** (notake_personorcompany) - menu, single item
118. **What type of contract was the offer?** (notake_contract) - menu, single item
119. **In this offer, how many days a week would you have had to work?** (notake_daw) - number, single item
120. **In this offer, how many hours a day would you have had to work?** (notake_had) - number, single item
121. **In this offer, how many weeks a month would you have had to work?** (notake_wam) - number, single item
122. **In the offer, how often would you have been paid? Every:** (notake_pay_period) - menu, single item
123. **In the offer, what was the total salary per {{notake_pay_period}} BEFORE taxes?** (notake_salary) - number, single item
124. **Did the offer include any other benefits?** (notake_benefits) - ticklist, single item
125. **What is the MAIN reason you did not take the job?** (notake_reason) - menu, single item
126. **Do you REGRET not accepting this offer?** (notake_regret) - menu, single item
127. **Have you ever been a union member?** (union_member_ever) - menu, single item
128. **Do you plan to become a union member?** (union_plan) - menu, single item
129. **How much work experience in TOTAL do you have working FULL-TIME for PAY at a person/business/government/non-profit/family firm?** (work_experience1) - menu, single item
130. **How much work experience in TOTAL do you have working PART-TIME for PAY at a person/business/government/non-profit/family firm?** (work_experience2) - menu, single item
131. **How much work experience do you have VOLUNTEERING FULL-TIME for NO PAY (NOT A LEARNERSHIP) at a person/business/government/non-profit/family firm?** (work_experience_3) - menu, single item
132. **How much experience in TOTAL do you have running your own business(es) (i.e. self-employment)?** (work_experience_1_1_1) - menu, single item

133. **Please describe the MAIN SKILL you have that you can offer an employer(s)?** (skill_description) - menu, single item

Treatment (Directed)

1. **Survey code store (treatment)** (survey_codet_q) - calculation, single item
2. **Treatment group store** (treatmentt_q) - lookup, single item
3. **Jump if in control group** - jump, none
4. **Name store** (a1_1t_t) - calculation, none
5. **Did {{a1_1t_t}} approach any businesses and show them the voucher or brochure since you were interviewed last year?** (treatment_approach_yn) - menu, single item
6. **Why did you not approach any companies?** (nap_reason) - menu, single item
7. **Jump to end of section** - jump, none
8. **How many businesses did {{a1_1t_t}} approach with both the voucher and the brochure?** (treatment_number_both) - number, single item
9. **How many businesses did {{a1_1t_t}} approach with just the voucher?** (treatment_number_voucher) - number, single item
10. **How many businesses did {{a1_1t_t}} approach with just the brochure?** (treatment_number_brochure) - number, single item
11. **What did the businesses say when {{a1_1t_t}} showed them the voucher/brochure?** (treatment_bus_response) - ticklist, single item
12. **Did {{a1_1t_t}} get a job from any of the businesses {{a1_1t_t}} approached with the voucher, even if they did not use the voucher?** (treatment_getjob) - menu, single item

Activities section (Directed)

1. **In the last week did you work for a wage, salary, commission or any payment in kind (including paid domestic work), even if it was for only one hour** (QLFS_1) - menu, single item
2. **Are you currently being paid a wage or salary to work on a regular basis for an employer (that is not yourself) whether full time or part time?** (NIDS_1) - menu, single item
3. **Have you done any casual work to earn money in the past 30 days?** (NIDS_3) - menu, single item
4. **Did you help other people with their business activities in the last 30 days?** (NIDS_5) - menu, single item
5. **When was the last time (YEAR) you did any PAID work for someone else including casual work or helping people with their businesses etc.** (nowork_year) - menu, single item
6. **When was the last time (MONTH) you did any PAID work for someone else including casual work or helping people with their businesses etc.** (nowork_month) - menu, single item
7. **What was the MAIN reason you left this work?** (leave_job) - menu, single item
8. **QLFS_1: How many days in the last week of working did you do this?** (QLFS1_daw) - number, single item

9. **QLFS_1: On average, how many hours a day did you do this?** (QLFS1_had) - number, single item
10. **QLFS_1: On average, how many weeks a month did you do this?** (QLFS1_wam) - number, single item
11. **QLFS_1: How much money did you take home IN TOTAL in the LAST MONTH of working for doing this for {{QLFS1_had}} hours a day for {{QLFS1_daw}} days a week over {{QLFS1_wam}} weeks** (QLFS1_takehome) - number, single item
12. **In the last week did you run or do any kind of business, big or small, for yourself or with one or more partners, even if it was for only one hour?** (QLFS_2) - menu, single item
13. **Have you engaged in any self-employment activities during the last 30 days?** (NIDS_2) - menu, single item
14. **When was the last time (YEAR) you engaged in self-employment (ran your own business)?** (nosef_year) - menu, single item
15. **When was the last time (MONTH) you engaged in any self-employment (ran your own business)?** (nosef_month) - menu, single item
16. **What was the MAIN reason you left this self-employment?** (leave_self) - menu, single item
17. **QLFS_2: How many days in the last week of working did you do this?** (QLFS2_daw) - number, single item
18. **QLFS_2: On average, how many hours a day did you do this?** (QLFS2_had) - number, single item
19. **QLFS_2: On average, how many weeks a month did you do this?** (QLFS2_wam) - number, single item
20. **QLFS_2: How much money did you take home IN TOTAL in the LAST MONTH of working for doing this for {{QLFS2_had}} hours a day for {{QLFS2_daw}} days a week over {{QLFS2_wam}} weeks** (QLFS2_takehome) - number, single item
21. **In the last week did you help without being paid in any kind of business run by your household, even if it was for only one hour?** (QLFS_3) - menu, single item
22. **In the last 30 days did you do any work on your own or the household's plot, farm, food garden, cattle post or kraal, or help in growing farm produce or in looking after animals for your household?** (NIDS_4) - menu, single item
23. **QLFS_3: How many days in the last week did you do this?** (QLFS3_daw) - number, single item
24. **QLFS_3: On average, how many hours a day did you do this?** (QLFS3_had) - number, single item
25. **QLFS_3: On average, how many weeks a month did you do this?** (QLFS3_wam) - number, single item
26. **In the last 4 weeks, were you looking for any kind of work (even if you are employed) or did you try to look for ways to or start a business?** (QLFS_4) - menu, single item
27. **What is the MAIN reason you did not search for work?** (why_nosearch) - menu, single item

28. **When was the last time (YEAR) you looked for any kind of job?** (search_year) - menu, single item
 29. **When was the last time (MONTH) you looked for any kind of job?** (search_month) - menu, single item
 30. **QLFS_4: How many days in the last week of searching did you do this?** (QLFS4_daw) - number, single item
 31. **QLFS_4: On average, how many hours a day did you do this?** (QLFS4_had) - number, single item
 32. **QLFS_4: On average, how many weeks a month did you do this?** (QLFS4_wam) - number, single item
 33. **In the last 4 weeks, would you have liked to work for pay, profit or family gain?** (NIDS_6) - menu, single item
 34. **What CURRENTLY takes most of your time?** (activity) - menu, single item
 35. **When did you start this most recent spell of {{activity}} that currently takes most of your time?** (activity_start_date) - input date, single item
 36. **What took up most of your time before you started {{activity}} on {{activity_start_date}}?** (previous_activity) - menu, single item
 37. **When did you start that particular spell of {{previous_activity}}?** (previous_activity_start_date) - input date, single item
 38. **QLFS1_Jump** - jump, none
 39. **QLFS3_Jump** - jump, none
 40. **NIDS1_Jump** - jump, none
 41. **NIDS3_Jump** - jump, none
 42. **NIDS5_Jump** - jump, none
 43. **Working for someone else Jump** - jump, none
 44. **Jump over Working for Someone Else** - jump, none
 45. **Working for someone else** (Directed)
 46. **QLFS2_JUMP** - jump, none
 47. **NIDS2_Jump** - jump, none
 48. **Working for yourself Jump** - jump, none
 49. **Jump over working for someone else** - jump, none
 50. **Working for yourself** (Directed)
 51. **Are you currently participating in any further or higher education?** (current_further_education) - menu, single item
 52. **Further or higher Education** (Directed)
 53. **Unemployed and NOT searching Jump** - jump, none
 54. **Jump over Unemployed and NOT searching** - jump, none
 55. **Unemployed and NOT searching** (Directed)
 56. **All** (Directed)
- Diary** (Directed)
1. **In which of the following months of 2011 and 2012 did the respondent do ANY PAID work even if it was only for 1 hour including peace jobs and self-employment?** (2010_paid_work) - ticklist, single item

2. **In which of the following months of 2011 and 2012 did the respondent do ANY UNPAID (VOLUNTARY) work for a business/person/family even if it was only for 1 hour?** (2010_unpaid) - ticklist, single item
3. **In which of the following months of 2011 and 2012 did the respondent do ANY FULL-TIME PAID work for SOMEONE ELSE for more than three weeks in the month?** (2010_fulltime_work) - ticklist, single item
4. **In which of the following months of 2011 and 2012 did the respondent run his/her own business(es)?** (2010_self) - ticklist, single item
5. **In which of the following months of 2011 and 2012 was the respondent a FULL-TIME student at high school\ a further education institution?** (2010_education) - ticklist, single item
6. **In which of the following months of 2011 and 2012 was the respondent a PART-TIME further-education student?** (2010_education_part) - ticklist, single item
7. **In which of the following months of 2011 and 2012 did the respondent ACTIVELY LOOK for ANY kind of work even if you were employed?** (2010_active_search_any) - ticklist, single item
8. **In which of the following months of 2011 and 2012 did the respondent ACTIVELY LOOK for any kind of FULL-TIME work even if you were employed?** (2010_active_search) - ticklist, single item
9. **In which ONE of the following months of 2011 and 2012 did the respondent spend the MOST time activitely looking any kind of work?** (2010_active_search_most) - ticklist, single item

Further or higher Education (Directed)

1. **D1.1 Name of institution** (d1_1) - text, single item
2. **D1.2 What type of institution is {{d1_1}}** (d1_2) - menu, single item
3. **D1.3 What is the name of course of the course you are studying at {{d1_1}}?** (d1_3) - text, single item
4. **D1.5 Is it currently FULL or PART time?** (d1_5) - menu, single item
5. **D1.7 What is the main subject of this {{d1_3}} you are studying at {{d1_1}}?** (d1_7) - text, single item
6. **What year did you start studying {{d1_3}} at {{d1_1}}?** (fe_start_year) - menu, single item
7. **What month did you start studying at {{d1_3}} at {{d1_1}} in {{fe_start_year}}?** (fe_start_month) - menu, single item

Enumerator post-survey questionnaire (Directed)

1. **Enumerator, was the respondent Male or Female?** (a2_1) - menu, single item
2. **Enumerator, how well did the respondent speak English?** (enum_respondent_english) - menu, single item
3. **Enumerator, how honest do you think the respondent was?** (enum_respondent_honesty) - menu, single item

4. **Enumerator, how did the interview go?** (enum_respondent_survey) - menu, single item
5. **Enumerator, how interested was the respondent in the interview?** (enum_respondent_interest) - menu, single item
6. **Enumerator, would you like to add any other comments?** (enum_respondent_comments) - menu, single item

Appendix C: Power calculations

Power calculations, sample sizes and minimum detectable effects are calculated using Optimal Design and the R^2 and standard deviation values from 2010 (the baseline survey). The R^2 (the proportion of explained variation by a level 1 covariate) is taken from a regression with wage employment as the dependent variable and gender, level of schooling, number of earners in the household in 2009, whether the person was in wage employment in 2009 or not and cluster fixed-effects as explanatory variables.

In 2011, 2,355 individuals were interviewed. Based on the delta required for a power of 0.8 and the standard deviation of 0.4 in 2010, this provides an actual minimum detectable effect of 0.044. OLS estimates using the 2011 sample provide a coefficient estimate of 0.048 (significant at the 5 per cent level) on the treatment coefficient.

The 2012 sample comprises 1,866 individuals. With this sample size we can detect 0.125 of a standard deviation for power of 0.8. Based on the standard deviation of wage employment in 2010 of 0.4, this equates to 0.05. If we assume that the standard deviation may increase with time (say to 0.5), then the actual minimum detectable effect is 0.063. These power calculations suggest that our sample sizes are large enough to detect the type of magnitudes of the impact we would expect.

Appendix D: Descriptive statistics

For a number of key covariates, the sample is balanced between the treatment and control groups across all rounds. The only variables and years where there is a significant difference between the two groups is the proportion of the sample in Gauteng in 2010, where there are relatively fewer people in the treatment group, and in the consequent increase in the proportion who are in the Limpopo province in the same year.

The increasing proportion of individuals with matric, the South African school leaving qualification, is also evident in the later rounds, as individuals finish school over the course of the study.

Table D1 Descriptive statistics of covariates and sample balance

Round	n	Proportion		Proportion in:		T-test
		Mean	sd	Control	Treatment	
Male						
2009	4,009	0.45		0.45	0.45	0.88
2010	3,064	0.43		0.43	0.43	0.99
2011	2,358	0.44		0.43	0.44	0.56
2012	2,107	0.43		0.42	0.43	0.67
Matric						
2009	4,009	0.58		0.58	0.58	0.67
2010	3,064	0.65		0.65	0.66	0.57
2011	2,358	0.71		0.70	0.72	0.32
2012	2,107	0.72		0.72	0.72	0.94
Proportion in Gauteng						
2009	4,009	0.48		0.48	0.48	0.98
2010	3,064	0.49		0.51	0.47	0.02
2011	2,358	0.50		0.51	0.49	0.43
2012	1,762	0.50		0.49	0.50	0.81

Round	n	Proportion		Proportion in:		T-test
		Mean	sd	Control	Treatment	
Proportion in KwaZulu-Natal						
2009	4,009	0.25		0.25	0.25	0.95
2010	3,064	0.21		0.21	0.22	0.52
2011	2,358	0.17		0.17	0.16	0.43
2012	1,762	0.16		0.16	0.15	0.62
Proportion in Limpopo						
2009	4,009	0.27		0.27	0.27	0.98
2010	3,064	0.30		0.28	0.31	0.06
2011	2,358	0.31		0.29	0.32	0.10
2012	1,762	0.31		0.31	0.32	0.54
Proportion in another province						
2009	4,009	0.00				
2010	3,064	0.00		0.00	0.00	0.63
2011	2,358	0.03		0.03	0.03	0.62
2012	1,762	0.03		0.03	0.02	0.27
Number of earners (current)						
2009	4,009	1.42	4.73	1.50	1.34	0.29
2010	3,064	1.77	6.47	1.60	1.94	0.15
2011	2,358	2.03	8.09	1.88	2.17	0.39
2012	1,763	1.25	1.14	1.23	1.26	0.60

Table D2 Descriptive statistics of potential outcome variables and sample balance

Round	n	Mean	sd	Proportion in:		T-test
				Control	Treatment	
2009	4,009	0.74		0.75	0.74	0.408
2010	3,057	0.81		0.81	0.80	0.572
2011	2,358	0.76		0.76	0.76	0.816
2012	1,866	0.76		0.76	0.77	0.537
2009	4,009	0.13		0.13	0.13	0.398
2010	3,057	0.13		0.13	0.13	0.586
2011	2,358	0.09		0.10	0.08	0.248
2012	1,866	0.11		0.11	0.10	0.530
2009	4,009	0.09		0.09	0.09	0.907
2010	3,057	0.20		0.19	0.22	0.060
2011	2,358	0.34		0.31	0.37	0.003
2012	1,866	0.33		0.30	0.35	0.015
2009	4,009	291	1,546	283	299	0.755
2010	3,064	776	2,162	734	817	0.286
2011	2,358	1,501	3,166	1,450	1,550	0.445

Notes: sd means standard deviation.

Appendix E: Tables and results

Table E1 Impacts on different dimensions of employment – one year after voucher allocation (2011)

Dependent variable: Estimator:	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		
	Labour force participation		Wage employment		Monthly earnings		Employment length										
	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE	
Independent variables:																	
Voucher	-0.0101 (0.0173)	-0.0106 (0.0213)	0.0538*** (0.0187)	0.0742*** (0.0233)	76.93 (135.3)	204.7 (171.6)	10.38 (10.97)	25.42* (13.90)									
Male	0.0374** (0.0181)		0.107*** (0.0206)		782.5*** (133.1)		26.08** (11.59)										
Earners in household	-0.000670 (0.00202)	-0.00465 (0.00303)	0.000025 (0.00179)	0.000892 (0.00331)	12.07 (10.17)	15.34 (24.40)	-0.0779 (0.638)	-0.0447 (1.969)									
Grade 11	0.0541 (0.0413)	0.0267 (0.0763)	0.0266 (0.0362)	0.0160 (0.0833)	212.6 (140.8)	62.00 (614.3)	-7.221 (19.30)	29.13 (49.96)									
Matric without endorsement	0.107*** (0.0371)	0.0945 (0.0870)	0.114*** (0.0337)	0.0566 (0.0949)	831.8*** (150.8)	655.9 (699.8)	57.01*** (19.96)	39.04 (56.67)									
Matric with endorsement	0.0803* (0.0429)	0.104 (0.0930)	0.179*** (0.0416)	0.176* (0.101)	1,645*** (247.4)	1,379* (748.2)	65.69*** (22.63)	77.47 (60.58)									
Sampling cluster fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358	2,358
R-squared	0.060	0.089	0.067	0.086	0.072	0.062	0.047	0.071	0.047	0.062	0.047	0.071	0.047	0.062	0.047	0.071	0.071
Number of pairs	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598	1,598

Notes: Robust standard errors in parentheses

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

Table E2 Impacts on wage employment taking into account the understanding of the voucher – one year after voucher allocation (2011)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: Estimator:	Wage employment									
	OLS	FE	OLS	FE	IV	IV-FE	IV	IV-FE	OLS	FE
Independent										
Understood the voucher	0.0585*** (0.0210)	0.0800*** (0.0297)	-0.0270 (0.0219)	0.0306 (0.0327)	0.0846** (0.0294)	0.120*** (0.0378)	0.0999***	0.127***	0.138*** (0.0312)	0.160*** (0.0479)
Used the voucher							(0.0351)	(0.0435)	-0.0254	0.0342
Understood x used the voucher									(0.0381)	(0.0598)
									-0.108** (0.0521)	-0.166* (0.0863)
Sampling cluster	Yes		Yes		Yes		Yes		Yes	
Observations	2,358	2,358	2,285	2,285	2,358	2,358	2,285	2,285	2,285	2,285
R-squared	0.067	0.083	0.066	0.084	0.066	0.080	0.053	0.0722	0.075	0.100
Number of pairs		1,598		1,576		1,598		1,576		1,576

Notes: All regressions control for gender, number of earners in the household in 2009 and education level.

Robust standard errors in parentheses

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

Table E3 Impact of the voucher on employment, through firm take-up or enquiry (2011)

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Wage employment					
Estimator:	OLS	FE	OLS	FE	OLS	FE
Independent variables:						
Voucher	0.0480** (0.0188)	0.0632*** (0.0236)	0.0502*** (0.0187)	0.0669*** (0.0235)	0.0479** (0.0188)	0.0629*** (0.0236)
Firm enquired about voucher	0.200** (0.0860)	0.348*** (0.133)			0.169 (0.124)	0.280 (0.185)
Worker subsidised			0.206* (0.108)	0.359** (0.164)	0.0562 (0.159)	0.120 (0.228)
Observations	2,358	2,358	2,358	2,358	2,358	2,358
R-squared	0.070	0.095	0.069	0.092	0.070	0.095
Number of pairs		1,598		1,598		1,598

Notes: Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table E4 Impact of the voucher on search (2011)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:	Searched more after interview				Approached more firms after interview			
Estimator:	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
Independent Voucher	-0.0356* (0.0207)		-0.0407 (0.0296)		-0.00769 (0.0233)		-0.0355 (0.0343)	
Understood voucher		-0.0520* (0.0304)		-0.0613 (0.0448)		-0.0112 (0.0340)		-0.0531 (0.0516)
Observations	1,852	1,852	1,852	1,852	1,826	1,826	1,826	1,826
R-squared	0.036	0.032	0.098		0.053	0.052	0.110	
Number of pairs			1,383	1,383			1,372	1,372

Notes: Regressions control for gender, education, wage employment in 2010, the number of earners in the household in 2009 and sampling cluster fixed effects. In the IV regressions understanding the voucher is instrumented with allocation to the treatment group.

Robust standard errors in parentheses

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

Table E5 Impact of the voucher on search (2011)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:	Changed search approach				Searched most intensively one month after the interview			
Estimator:	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
Independent Voucher	0.0233 (0.0177)		0.0214 (0.0261)		-0.000902 (0.0168)		-0.00503 (0.0214)	
Understood voucher		0.0341 (0.0259)		0.0325 (0.0399)		-0.00142 (0.0264)		-0.00814 (0.0346)
Observations	1,871	1,871	1,871	1,871	2,355	2,355	2,355	2,355
R-squared	0.041	0.037	0.114		0.030	0.030	0.049	
Number of pairs			1,392	1,392			1,598	1,598

Notes: Regressions control for gender, education, wage employment in 2010, the number of earners in the household in 2009 and sampling cluster fixed effects. In the IV regressions understanding the voucher is instrumented with allocation to the treatment group.

Robust standard errors in parentheses

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

Table E6 Impact of the voucher on whether moved location or turned down job offers (2011)

Dependent variable:	Moved			Turned down a job offer				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Estimator:	OLS	IV	FE	FE-IV	OLS	IV	FE	FE-IV
Independent Voucher	0.00429 (0.0120)		-0.00602 (0.0134)		-0.00844 (0.00857)		-0.0272** (0.0114)	
Understood voucher		0.00674 (0.0188)		-0.00974 (0.0217)		-0.0131 (0.0133)		-0.0438** (0.0183)
Observations	2,355	2,355	2,355	2,355	2,324	2,324	2,324	2,324
R-squared	0.196	0.196	0.160		0.050	0.051	0.083	
Number of pairs			1,598	1,598			1,585	1,585

Notes: Regressions control for gender, education, wage employment in 2010, the number of earners in the household in 2009 and sampling cluster fixed effects. In the IV regressions understanding the voucher is instrumented with allocation to the treatment group.

Robust standard errors in parentheses

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

Table E7 Impact of the voucher interacted with household employment (2011)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	Turned down a job offer	Wage employment	Ln(monthly earnings)	Searched more	Approached more firms	Changed search	Moved
Estimator:	FE	FE	OLS	FE	FE	FE	FE
Independent variables:							
Households containing employees – treatment	0.00834 (0.0250)	0.0341 (0.0516)	0.0731 (0.0741)	-0.0192 (0.0643)	0.0413 (0.0742)	0.0660 (0.0565)	-0.0253 (0.0298)
Households with no employees – treatment	0.0335 (0.0317)	0.0692 (0.0654)	-0.00332 (0.0947)	-0.0231 (0.0807)	0.113 (0.0922)	0.0312 (0.0712)	-0.0184 (0.0378)
Households containing employees – control	0.0516* (0.0273)	-0.0424 (0.0563)	0.0804 (0.0764)	0.0179 (0.0698)	0.123 (0.0803)	0.0466 (0.0614)	-0.0217 (0.0325)
Observations	2,327	2,358	1,054	1,855	1,829	1,874	2,358
R-squared	0.089	0.087	0.155	0.093	0.116	0.114	0.156
Number of pairs	1,585	1,598		1,383	1,372	1,392	1,598

Notes: Regressions control for gender, education, the number of earners in the household in 2009 and sampling cluster fixed effects. The base category is individuals in the control group in households with no earners in 2010.

Robust standard errors in parentheses

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

Table E8 Impact on different dimensions of employment – two years after voucher allocation (2012)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Estimator:	Labour force participation		Wage employment		Monthly earnings		Employment length	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Independent Voucher	0.0130 (0.0195)	0.0247 (0.0278)	0.0514** (0.0216)	0.0952*** (0.0303)	-173.5 (213.7)	-274.0 (394.0)	3.124 (16.06)	46.93** (21.30)
Male	0.0741*** (0.0197)		0.110*** (0.0227)		461.6* (246.0)		36.50** (15.32)	
Earners in household 2009	-0.000105 (0.00196)	-0.000355 (0.00634)	-0.000740 (0.000738)	-0.000195 (0.00692)	1.332 (7.298)	6.083 (58.50)	0.112 (0.553)	0.0742 (4.729)
Controls for school:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sampling cluster fixed effects:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,862	1,862	1,862	1,862	1,862	1,862	1,803	1,803
R-squared	0.085	0.116	0.115	0.156	0.038	0.012	0.137	0.205
Number of matched pairs		1,386		1,386		1,386		1,352

Notes: Robust standard errors in parentheses

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

Table E9 Impact of the voucher on employment, through firm take-up or enquiry – two years after allocation

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Estimator:	OLS	FE	OLS	FE	OLS	FE
Wage employment						
Independent variables:						
Voucher	0.0422* (0.0217)	0.0816*** (0.0308)	0.0477** (0.0217)	0.0875*** (0.0307)	0.0423* (0.0218)	0.0817*** (0.0308)
Firm enquired about voucher	0.266*** (0.0845)	0.350** (0.157)			0.360*** (0.104)	0.441* (0.263)
Worker subsidised			0.174 (0.114)	0.275 (0.180)	-0.160 (0.144)	-0.130 (0.301)
Observations	1,865	1,865	1,865	1,865	1,865	1,865
R-squared	0.077	0.125	0.073	0.120	0.078	0.125
Number of pairs		1,387		1,387		1,387

Notes: Standard errors in parentheses

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

Table E10a Characteristics of firms that hired voucher holders

	(1)	(2)	(3)	(4)
Dependent variable:	Ln(employment)		Youth employment/total employment	
Estimator:	OLS	Quantile regression - median	OLS	OLS
Matched firm	1.135*** (0.174)	1.109*** (0.148)	0.0955*** (0.0210)	0.0870*** (0.0213)
Treatment firm	-0.188 (0.242)	-0.511** (0.207)	-0.0507* (0.0294)	-0.0485* (0.0293)
Ln(employment)			0.00777** (0.00375)	
Constant	3.663*** (0.0589)	3.497*** (0.0510)	0.183*** (0.00707)	0.155*** (0.0151)
Observations	1,114	1,114	1,028	1,028
R-squared	0.053		0.022	0.026

Notes: Ln= natural logarithm, standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table E10 b Characteristics of firms that hired voucher holders

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Any new hires in last year? (Y/N)		Young new hires/total new hires		Ln(number of new hires)	
Estimator:	OLS	OLS	OLS	OLS	OLS	OLS
Matched firm	0.0433 (0.0441)	-0.0539 (0.0443)	0.0118 (0.0446)	-0.0076 (0.0447)	0.963*** (0.182)	0.110 (0.123)
Treatment firm	-0.0138 (0.0606)	0.0689 (0.0607)	0.0268 (0.0603)	0.0493 (0.0597)	-0.423* (0.250)	-0.0482 (0.166)
Youth employment/ total employment		0.0503 (0.0315)		0.396*** (0.0441)		0.829*** (0.124)
Ln(employment)		0.0838*** (0.00786)		-0.0101 (0.0083)		0.706*** (0.0228)
Constant	0.744*** (0.0146)	0.431*** (0.0318)	0.407*** (0.0151)	0.364*** (0.0362)	1.952*** (0.0616)	-1.021*** (0.100)
Observations	1,083	1,002	739	704	813	748
R-squared	0.001	0.107	0.001	0.107	0.039	0.590

Notes: Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table E10c Characteristics of firms that hired voucher holders

Dependent variable:	(1)		(2)		(3)		(4)		(5)		(6)	
	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Ln(typical starting wage for an unskilled worker)												
Matched firm	0.108*	0.0625	0.232***	0.223***	0.0722**	0.0126						
	(0.0573)	(0.0593)	(0.0518)	(0.0547)	(0.0355)	(0.0374)						
Treatment firm	0.0414	0.0533	-0.0953	-0.117	0.0365	0.0501						
	(0.0820)	(0.0841)	(0.0705)	(0.0746)	(0.0489)	(0.0509)						
Youth employment/ total employment		-0.0520		-0.00736		0.0566**						
		(0.0599)		(0.0375)		(0.0267)						
Ln(employment)		0.0376***		0.0206**		0.0503***						
		(0.0108)		(0.00956)		(0.00649)						
Constant	7.972***	7.835***	0.582***	0.505***	0.831***	0.638***						
	(0.0208)	(0.0485)	(0.0176)	(0.0407)	(0.0119)	(0.0267)						
Observations	644	599	930	857	1,109	1,011						
R-squared	0.012	0.032	0.026	0.031	0.010	0.069						

Notes: Standard errors in parentheses

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

Table E11 Attrition

Dependent variable: Estimator:	(1)		(2)		(3)		(4)	
	OLS	Attrition in 2011 Matched pairs - FE	OLS	Attrition in 2011 Matched pairs - FE	OLS	Attrition in 2012 Matched pairs - FE	OLS	Attrition in 2012 Matched pairs - FE
Treatment group	0.00239 (0.0148)	0.00600 (0.0165)	-0.0235* (0.0130)	-0.0337** (0.0159)				
Wage employment	0.0242 (0.0188)	0.0192 (0.0298)	0.0434*** (0.0161)	0.0749*** (0.0266)				
Wage employment - 2010			0.0147 (0.0187)	0.0130 (0.0295)				
male	-0.0171 (0.0153)		0.0247* (0.0131)					
Earners in household	0.000720 (0.00124)	0.00192 (0.00241)	-2.21e-06 (0.000492)	-0.00281 (0.00224)				
Grade 11	-0.0663** (0.0296)	-0.00516 (0.0458)	-0.00801 (0.0272)	0.00501 (0.0570)				
Matric without endorsement	-0.0834*** (0.0278)	0.0119 (0.0547)	-0.0312 (0.0246)	-0.0803 (0.0647)				
Matric with endorsement	-0.0473 (0.0335)	0.0479 (0.0622)	0.0166 (0.0299)	-0.0382 (0.0693)				
Observations	3,057	3,057	2,355	2,355				
R-squared	0.079	0.050	0.037	0.100				
Number of matched pairs		1,852		1,598				

Notes: Robust standard errors in parentheses

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

Appendix F: Potential costs

		Experiment transition rate whole sample	Experiment transition rate interested firms	Hypothetical very low transition rate
A	Number not employed		4,672,272	
B	Number employed		1,825,654	
C	Transition rate into employment over one year (%)		0.076	
D	New employees in a year	A x C	353,691	
E	Increase in transition rate due to subsidy (%)	0.250	1.480	0.100
F	New transition rate with subsidy (%)	C x (1+E)	0.095	0.188
G	Gross new jobs with subsidy	A x F	442,114	877,154
H	New jobs due to subsidy	G - D	88,423	523,463
Subsidy amount: Experimental amount – R5,000				
I	Value of subsidy (R)		5,000	5,000
J	Total cost of subsidy (R million)	G x I	2,211	4,386
K	Cost per new job (R)	J/H	25,000	8,378
				55,000

References

- Banerjee, A, Galiani, S, Levinsohn, J, McLaren, Z, and Woolard, I, 2008. Why has unemployment risen in the New South Africa? *The Economics of Transition*, 16 (4), pp.715–40.
- Betcherman, G, Daysal, NM, and Pagés, C, 2010. Do employment subsidies work? evidence from regionally targeted subsidies in Turkey. *Labour Economics*, 17(4), pp.710–22.
- Betcherman, G, Godfrey, M, Puerto, S, Rother, F, and Stavreska, A, 2007. Review of interventions to support young workers: findings of the youth employment inventory. *Social Protection Discussion Paper 0715*. World Bank.
- Bruhn, M and McKenzie, D, 2009. In pursuit of balance. randomization in practice in development field experiments. *American Economic Journal: Applied Economics*, 1(4), pp.200–32.
- Burns, J, Edwards, L, and Pauw, K, 2010. Wage subsidies to combat unemployment and poverty, assessing South Africa's options. *International Development Policy Research Institute Discussion Paper 00969*.
- CDE, 2012. *Routes into formal employment: public and private assistance to young job-seekers*.
- Galasso, E, Ravallion, M, and Salvia, A, 2004. Assisting the transition from workfare to work: a randomized experiment. *ILR Review*, 58 (1), pp.128–42.
- Gerber, AS, and Green, DP, 2012. *Field experiments: design, analysis and interpretation* (1st ed.). New York: W.W.Norton & Company, Inc.
- Gerfin, M, Lechner, M, and Steiger, H, 2005. Does subsidised temporary employment get the unemployed back to work? an econometric analysis of two different schemes. *Labour Economics*, 12, pp.807–35.
- Go, D, Kearney, M, Korman, V, Robinson, S and Thierfelder, K, 2010. Wage subsidy and labour market flexibility in South Africa. *Journal of Development Studies*, 46 (9), pp.1,481–1,502.
- Groh, M, Krishnan, N, McKenzie, D and Vishwanath, T, 2012. *Soft skills or hard cash? the impact of training and wage subsidy programs on female youth employment in Jordan*. Washington DC: World Bank.
- Katz, L, 1998. *Wage Subsidies for the Disadvantaged*. In Freeman, RB and Gottschalk, P (eds.), *Generating Jobs: How to Increase Demand for Less-Skilled Workers*. Russell Sage Foundation: New York.
- Kingdon, G and Knight, J, 2004. Unemployment in South Africa: the nature of the beast. *World Development*, 32 (3), pp.391–408.
- Levinsohn, J, 2008. Two policies to alleviate unemployment in South Africa. *Center for International Development at Harvard University Working Paper 166*.

National Treasury, 2011. *Confronting youth unemployment: policy options for South Africa, Discussion Paper*. Pretoria: National Treasury.

Pauw, K and Edwards, L, 2006. Evaluating the General Equilibrium Effects of a Wage Subsidy Scheme for South Africa. *South African Journal of Economics*, 74 (3), pp. 442–62.

Pugatch, Tand Levinsohn, J, 2011. Prospective analysis of a wage subsidy for Cape Town youth. *NBER Working Paper Series No 17248*.

Rankin, Nand Schöer, V, 2011. *Youth employment, recruitment and a youth-targeted wage subsidy: findings from a South African firm level survey*. University of the Witwatersrand: Mimeo.

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South Africa has a youth unemployment problem. This report summarises a randomised controlled trial that investigated whether providing a wage subsidy voucher to young people, which firms that employed them could claim, resulted in higher employment. The voucher was a temporary measure that reduced the cost of hiring for firms. One year later, young people with the voucher were seven percentage points more likely to be in wage employment than those without the voucher. This impact persisted even after the vouchers lapsed. Most of those who entered wage employment as a result of the voucher were able to remain in employment. The findings highlight the potential positive effects of policies that get young people into jobs earlier.

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