THE PREDICTORS OF YOUTH EMPLOYMENT IN RURAL SOUTH AFRICA: THE POVERTY ALLEVIATION PILOT STUDY

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Abstract

Objectives: Explore predictors of employment among 18-24 year olds in Mpumalanga, South Africa to inform intervention development.

Method: The Poverty Alleviation Pilot collected quantitative data from 18-24 year olds randomly sampled from the Agincourt Health and Demographic Surveillance site in rural South Africa. Logistic regression models were estimated to identify demographic, qualification, and psychosocial predictors of youth employment.

Results: Youth with working skills were significantly more likely to report employment and youth reporting greater life dissatisfaction also had slightly greater odds of employment. Having training was also significantly positively associated with employment, but for males only.

Conclusions: To decrease youth unemployment, rural youth need access to training and entrepreneurship development programs and employers need incentives to hire youth.

Table of Contents

Problem Statement

Nearly 50% of South African youth (15-24 years old) are unemployed, among the highest proportion in the world. Youth unemployment in South Africa disproportionately affects youth who are Black, female, and/or living in a rural area.[1–4] Risk of HIV infection also peaks during youth (18 to 24 years of age) in South Africa.[5] Understanding the economic environment young South Africans face when they leave school and attempt to enter the workforce is critical for designing poverty alleviation interventions that can decrease both unemployment and HIV risk among young adults in South Africa.

Research Question

What are the predictors of employment among 18-24 year old males and females in Mpumalanga, South Africa?

This research question is relevant to maternal and child health because unemployment in South Africa is higher for young women and increasing. From 2000 to 2008, the percentage of young women looking for work increased from 30 to 50%.[2] It is well documented that socioeconomic vulnerability among women in South Africa also increases their vulnerability to HIV by increasing their dependence on male partners and potentially increasing unsafe sexual behaviors.[6] In general, young women are 3-4 times more likely than males their age to become infected in South Africa.[5] Thus, improving the employment options for youth in rural South Africa could have the added benefit of decreasing HIV risk, particularly for young women.[7]

Literature Review

Youth unemployment is a global problem. In 2010, 90% of youth (15-24 years old) in the world were living in developing countries and two thirds were unemployed.[8] High youth unemployment is of greater magnitude in Africa where two thirds of the continent's population is under 30.[9] In South Africa in particular, youth make up 20% of the workforce and have the fifth highest unemployment percentage in the world at 49.8%.[1,10] Youth unemployment in South Africa varies by certain demographic variables with unemployment being highest among youth who are Black, female, and/or living in a rural area.[2–4] High youth unemployment has negative consequences in both the short and long term. In the short term, youth unemployment is correlated with increases in crime, substance use, and discouragement (no longer seeking work).[11] In the long term, a gap between youth finishing school and finding a first job significantly harms their employment trajectory and wages.[11,12]

Though youth unemployment is very high in rural South Africa, there are youth who manage to find employment. Previous studies have found numerous predictors of youth employment in South Africa. Starting with sociodemographic characteristics, an analysis of the 1999 October Household Survey data, based on a national sample that included 15,453 households with youth (15-30 years of age), found that being married increased the likelihood of both wage employment and self-employment. In contrast, being a parent increased the likelihood of being self-employed but inhibited wage employment, possibly due to limited schedule flexibility. A potential explanation for the associations between being married and/or a parent and employment is that both characteristics would increase responsibilities and incentivize entry into the labor market. Also, employers may prefer to hire people with said responsibilities as they may seem

more likely to stay with the company in the long-term.[4] Though this data is nearly 15 years old, the study remains one of the most cited investigations of youth employment in South Africa and so is important to include.

The relationship between education and employment in South Africa is far less clear. Data from the 1999 October Household Survey indicate only education beyond high school (technical training or university) is significantly associated with employment.[4] However, analyses of data from the Cape Area Panel Study (collected from 2002 to 2006) of nearly 5,000 14 to 22 year-olds in Cape Town found completing grade 12 in high school was associated with a 69% higher hazard rate of finding a job, compared to those who only completed grade 10. For Black South African males however, completing grade 12 did not make a difference in employment until 20 months after graduation.[3] Though these data came from an urban area, similar results have been found in rural areas. A 2013 study of the connection between rural youth employment and old age pensions in KwaZulu-Natal found young men who had passed matriculation (the exam required to complete grade 12) were 8% more likely to migrate and find work compared to men without matric, once the elderly members of their households began receiving old age pensions.[13] In short, there seems to be a positive association between education and employment, though the level of education required and how soon after graduation the association appears are debated.

The connection between education and employment also relates to the skills youth have and employers' perceptions of those skills. For example, the Cape Area Panel Study found that high scores on numeracy tests (from the self-administered Literacy and Numeracy Evaluation in the study) were significantly related to employment.[3] However,

because of quality issues in South Africa's education system having a matric certificate may not necessarily be correlated with high numeracy scores. In fact, four of five youth completing high school in South Africa are considered functionally illiterate, meaning they lack the skills necessary to attend university.[4] As employers face high retrenchment costs (the costs of employee layoffs) in South Africa's relatively inflexible labor market, they want to verify a worker's productivity before hiring them.[11] Given the quality issues in the education system, it is perhaps not surprising that data from the 2005 Labor Force Survey found unemployment for youth under age 35 was 46.7% for those who had passed matric but only 27% for those who hadn't passed matric but who had extra diplomas or certificates.[14] Perhaps in this instance the diplomas and certificates, likely from training programs, were better proof that the applicants had the necessary skills for employment than a matric certificate. Such is the motivation behind the Further Education and Training (FET) college tradition in post-Apartheid South Africa.[15,16] Though most vocational and technical training is provided through colleges and universities, FET colleges in rural areas provide vocational certificates and can connect students with learnerships, or paid internships designed to lead to employment.[16]

Before an applicant can present their qualifications to an employer, of course, they have to know of job openings. Data from the Labor Market Entry Survey in Gauteng, KwaZulu-Natal and Limpopo found 66% of respondents reported hearing about job vacancies from social contacts.[11] Further, an econometric analysis of professional networks and youth employment in South Africa found having employed household members increased employment probabilities among youth by 3-12%.[17] This effect may vary by the type of employment. Another analysis found having an employed household

member increased the chances of wage employment but decreased chances of self-employment.[4] Overall, it seems the social networks of youth, including family, are an important aspect of youth job-seeking (e.g., through providing information on job opportunities).

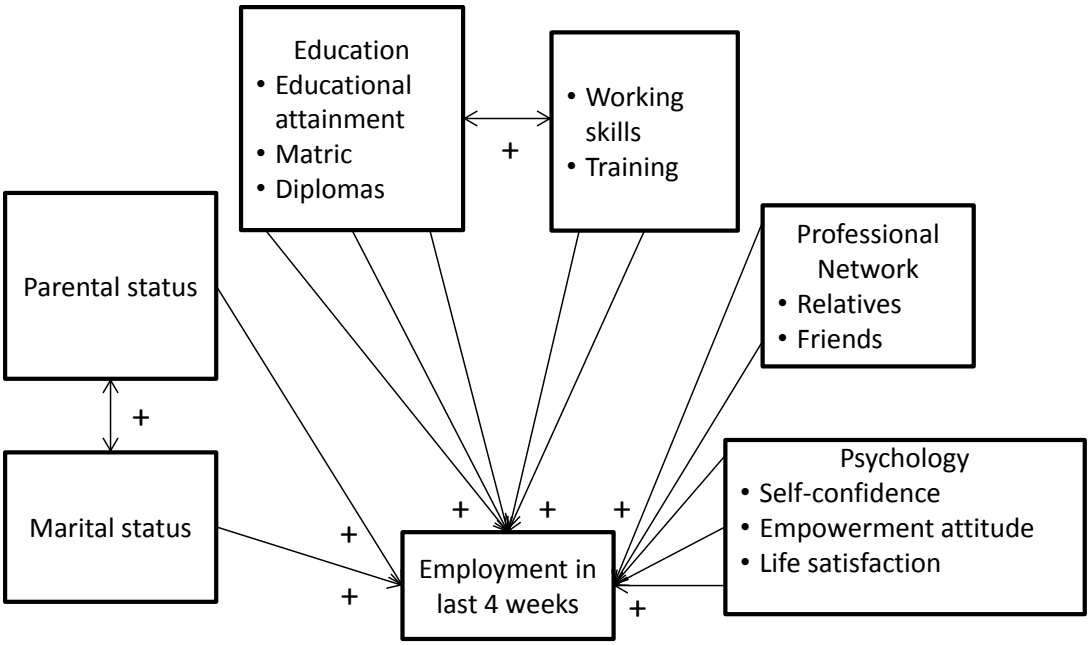
Finally, perhaps proximal to all other relevant employment predictors, are psychological traits of the applicant. In developing countries, including South Africa, youth tend to be employed in informal sectors or via self-employment.[8,11] As self-employment requires initiative and confidence in your skill sets, youth who are employed in South Africa likely have greater self-confidence in entrepreneurship and more empowered attitudes. Finally, youth who are employed would also likely have higher life satisfaction. Studies of unemployment in South Africa have found lower subjective well-being among those who are unemployed.[4,18,19] For example, of a sample of 381 unemployed people (most between 17 and 30 years of age) from the North West Province of South Africa, over 80% reported unemployment as unpleasant or very unpleasant. More specifically, boredom, loneliness, uncertainty about the future, financial concerns, emptiness and conflict seemed to be key contributors to the unpleasantness. Also, 96% of the respondents reported work as important, mostly because of the meaning it can provide.[19]

In short, based on findings from previous studies, it appears there is a wide range of potential predictors of youth employment. For demographics, being married or being a parent could increase the odds of youth employment.[4] Completing high school and passing matric are also likely to increase youth's ability to obtain work.[3,4,13] Though, due to inadequacies in South Africa's education system, training certificates or diplomas may

be a more important predictor of employment as it can signal to the employer the presence of more concrete skills.[4,11,14] Beyond qualifications, job-seeking behavior is also important to consider and it seems youth with relatives or friends who are working may have more information on job vacancies thus increasing their chances of employment. Finally, with regards to psychology, youth who are more confident in their entrepreneurial skills are probably more likely to be employed, as employed youth in South Africa are concentrated in self-employment.[8,11] Also, employed youth likely have higher life satisfaction compared to unemployed youth.[4,18,19]

This paper is an exploratory analysis of the potential demographic, qualification, and psychosocial predictors of youth employment in the rural Mpumalanga Province of South Africa. Figure 1 outlines the conceptual model guiding these analyses. The model is constrained by the available data source, a quantitative survey conducted with 187 males and females 18-24 years of age in the summer of 2013. Based on the findings of studies outlined previously, a positive relationship is hypothesized between each of the predictor variables and employment. It is also likely some of the predictor variables will be positively associated with each other (e.g., being a parent and being married), and these relationships are also identified in Figure 1.

FIGURE 1 – Conceptual model of predictors of youth employment



Though youth unemployment in South Africa has been studied numerous times in the past decade, this study addresses several gaps in the literature. First, several previous studies used data from urban provinces.[3,11,14] As youth unemployment is acknowledged to be worse in rural areas, the data for this study allow for new and valuable insights to the field as they were collected in two villages in the rural Mpumalanga Province. Second, many previous studies used much broader definitions of youth. For example, Mlatsheni et al. included people up to age 30 as youth and Burns et al. included persons up to age 35.[4,14] Though the government definition of youth in South Africa was expanded in 1994 to range from 14 to 35 years, economic analyses identify the more narrow time of the transition from school to the first job as a critical time period.[12,16] This study, focusing on youth 18 to 24 years old, provides a more targeted analysis of the school to work transition period. Third, the present study, as an exploratory analysis, includes a broad range of potential predictors of employment ranging from demographic characteristics like parenthood to qualification variables such as training to psychological measures of

self-confidence and empowerment. Though previous studies have included some of these predictors, none have included them all.

Methods

Sampling

Data for the Poverty Alleviation Pilot Study were obtained using quantitative surveys conducted in two different villages in Mpumalanga Province, South Africa. The two villages were strategically chosen to represent one of the largest (in terms of population size) and one of the smallest villages, respectively, in the Agincourt Health and Demographic Surveillance site (AHDSS). The AHDSS conducts an annual census to collect demographic information on all residents in the study area. The database of households in this site was used to randomly sample, using random numbers, eligible households from both villages in a 3:2 ratio to reflect differences in population size. Inclusion criteria for enrollment were: 18-24 years old and not enrolled in school. The final sample included 81 males and 106 females for a total sample of 187 youth. The target sample size was between 150 and 200 to have sufficient power for the analyses. Of those asked to participate in the study, none refused, yielding a participation rate of 100%. The gender ratio among the 100 respondents from Village A was nearly 1:1, but in Village B there were over twice as many females sampled as males due the high prevalence of labor migration among males.[20] To increase the probability of capturing youth who were employed, we included periods of data collection on weekends and evenings.

Design

The Poverty Alleviation Pilot Study was approved by the Institutional Review Board of the University of North Carolina at Chapel Hill. The content of the quantitative survey was informed by the items used in the World Bank Urban Youth Employment Project Eligibility Screen, the Brac Uganda Adolescent Development Program, the Urban Youth Baseline Survey Questionnaire from Liberia, and finally the EnCoDe Long-Term Impact of Nutrition survey from Gambia.[21–23] The completed survey included eleven sections including: a household roster; household assets; demographics; education history (e.g., educational attainment, passing matric, diplomas outside of school, etc.); employment history (items for 15 different types of employment); job environment perceptions and expectations; professional network (a list of up to three friends who are working); loans and savings (e.g., access to banking and loans, saving behaviors, etc.); job skills and training; a test of financial literacy; and three scales to assess self-confidence in entrepreneurship, empowerment attitude, and overall life satisfaction.

The survey was written in English and then translated into Shangaan, the local language. The pilot study lacked sufficient time and resources for formal back translation of the questionnaire but during training the fieldworkers were asked to verbally translate the questions from Shangaan into English as a proxy.

Data collection

Once the household samples were obtained, packets were put together containing a tracking sheet identifying all eligible members of the household and their asset quintile, two informed consents, and a survey. Each household in the census area had a census

identification number and this was used to order the survey packets by their geographic distribution in the village. From this distribution, the survey packets were organized into walkable "neighborhoods" for each fieldworker to maximize the efficiency of data collection. After identifying a household, the fieldworker was to approach the head of the household and verify whether the first eligible household member listed on the tracking sheet was indeed eligible. Specifically, the fieldworker double-checked that the household member was not enrolled in school, was between 18 and 24 years of age, was a permanent resident of the village (lived there at least six months out of the year), and was mentally competent. If a household member was determined to be ineligible, for example they had moved away to find work, the fieldworker inquired about the next eligible household member listed on the tracking sheet, if there was one. If instead the household member was confirmed eligible but was not available to complete the survey, the fieldworker obtained the phone number of the potential respondent and tried to set a specific appointment with them for the next day. If they were unable to set an appointment, the fieldworker was to return to the household the next day at a different time if possible. If a potential respondent was deceased or refused to participate, the fieldworker was to proceed to the next household. In total there were five fieldworkers, all adult women from the region and fluent in the local language, and it took them one month to conduct the semi-structured interviews (surveys) with 187 respondents.

Measures

Outcome: Employment. Employment status was assessed by asking participants whether they had performed a range of employment activities in the past four weeks (e.g., skilled trade, transportation, etc.). If a participant responded 'yes' for any activity, they were considered to be employed. Though wage employment was included as an option, the vast majority of the employed respondents were self-employed, meaning they did not work in an office or for a formal employer, so the two categories were collapsed in analyses.

Demographic Predictors: Marriage and parenthood. As a very small proportion of the sample reported being widowed, divorced or cohabiting, we collapsed marital status into a binary variable and only counted those who reported being currently married as married. Being a parent was also a binary variable generated from responses to the question of *"How many living children do you have?"*

Qualification Predictors: Educational attainment, passing matriculation, diplomas outside of school, having working skills, and training. Educational attainment was assessed on a range from no education at all to university attendance. The majority of the sample clustered around less than high school or completing high school and so education was coded as a binary variable with less than high school used as the referent. Passing the matriculation exam (matric) was assessed separately and included passing with and without university exemption, meaning qualifications to enter a South African university. As university attendance was very low in the sample, everyone who passed was coded the same, regardless of university exemption. Respondents were also asked if they had or were currently completing a diploma, likely through an FET college or

similar institution connecting training and employment.[15] Two binary variables were generated for completed diploma and work towards a diploma in progress. For working skills, respondents were asked if they possessed any of a range of skills (e.g., computer skills) and were also able to list others. The skill list was adapted from the World Bank Urban Youth Employment Project Eligibility Screen; respondents who listed any working skills were counted as having working skills in a binary variable.[22] Finally, respondents had the opportunity to list two training or apprenticeship opportunities they had completed and one completed business training. Respondents who completed any training opportunity in these categories were identified as receiving training in a binary training variable.

Psychosocial Predictors: Professional network, self-confidence in entrepreneurship, empowerment attitude, and overall life satisfaction. To assess the professional networks of respondents and their association with employment, two variables were created .The first is intended to measure the professional network respondents have among relatives. This variable was created from the household roster at the beginning of the survey that asked about employment in the past week for all household members. Though the relationship to the respondent was not collected in the household roster, if a household member reported employment the respondent was identified as having a professional network among relatives. Counting employed household members as a respondent's professional network is consistent with previous analyses.[17] The survey also asked respondents to list up to three friends who were working. If a respondent listed at least one friend who was working, the respondent was coded as having a professional network among friends.

The three psychological constructs (see Table 1) used in the survey were obtained from the Brac Uganda Adolescent Development Program.[21] The first scale assessed self-confidence in entrepreneurial tasks (Cronbach's alpha=0.83) by asking participants to rank, on a scale of 1-10 (10 being high), their ability to do ten tasks (e.g., "manage financial accounts"). Using the same scaling system, the empowerment attitude scale (Cronbach's alpha=0.76) asked respondents to rank how true ten statements were for themselves (e.g., "I often make plans for the future"). The overall life satisfaction questions (Cronbach's alpha=0.58) asked participants to rank on a scale of 1-7 (1 being high) their happiness with certain aspects of their lives (e.g., friends, house, etc.). For each of the three psychology scales, answers were summed. As a higher summed score on the life satisfaction scale indicates greater dissatisfaction, in this paper it will subsequently be identified as the life dissatisfaction scale. Information on scale validity is not available.

Sociodemographic characteristics: Age, asset quintile, and gender. Age, asset quintile and gender were used as control variables in these analyses. The asset quintile gives a score ranging from one to five (one being the lowest quintile) to households based on their assets; this serves as a proxy measure for socioeconomic status and was pre-populated from the AHDSS census records. Though racial identity data were collected, they were not used as all respondents identified as Black/African and all but two identified as South African. Also, data were collected from two villages but as all respondents reported no job skills or business training in their communities, the data from the two villages were analyzed as one sample.

TABLE 1 – Items in psychology scales, Poverty Alleviation Pilot, 2013

Self-confidence in Entrepreneurial Tasks (10-100)
Rate your ability to do task from 1-10, 1: cannot do activity, 10: definitely can
Run your own business
Identify business opportunities to start up new business
Obtain credit to start up new business or expand existing business
Save in order to invest in future business opportunities
Make sure that your employees get the work done properly
Manage financial accounts
Bargain to obtain cheap prices when you are *buying* anything for business (inputs)
Bargain to obtain high prices when you are *selling* anything for business (outputs)
Protect your business assets from harm by others
Collecting the money someone owes you
Empowerment Attitude (10-100)
Rate how true each statement is to yourself, 1: not at all 10: a lot
If I start working on a task, I definitely see the end of it no matter how difficult it is.
While doing any task, it is important for me to do it better than others.
If I have the chance, I would make a good leader.
I want to be a respected person in my village.
I do not care what others think about my success or failure
I am in control of what happens in my life
I save regularly
A person can get rich by taking risks[a]
I often make plans for the future
I believe that my future is determined by luck no matter how hard I work[a]
Overall Life Satisfaction (7-49)
Rate how happy you are with each aspect of your life, 1: completely happy, 7: not at all happy
Your education level?
Your family?
Your friends?
Your job or employment prospects?
Your earnings/income?
The house you live in?
Life as a whole?

[a] Reverse coded to align with overall scale

Data analysis

Both bivariate associations and logistic regression models were used to analyze these data. For the bivariate associations between the predictors and employment, Fisher's Exact Test was utilized due to the small cell counts in several of the cross

tabulations. To maximize cell counts many of the previously ordinal variables were made into binary variables, as outlined previously. Fisher's Exact Test was also used to test for associations between certain predictor variables expected to be associated (e.g., being married and being a parent) to identify the possibility of collinearity in the regression models.

Logistic regression models were built to test the association between each individual predictor and employment. Each model included control variables and a separate model was used for each individual predictor both to avoid potential collinearity between the variables and to capture the largest possible pool of relevant predictors. This method also provides a better answer to the research aim, which is to identify all possible predictors of unemployment, rather than the relative strengths of some predictors over others. Next, the models were stratified by gender. The referent groups for the logistic regressions were chosen as the variable expected to share the least positive relationship with employment (e.g., not passing matric is the referent to examine the effect of passing matric on the odds of being employed).

Results & Interpretation

More than half of the sample was female (54%) and the average age was 22.3 years. Though 56% of the sample had passed matric, fewer than one quarter of respondents were employed. The national average of unemployment (just under 50%) is significantly lower than the 75% unemployment in this sample but this higher estimate aligns with analyses of census data in South Africa that revealed 76.39% of 15-24 year-old Xitsonga speakers, the dominant language in the study area, were unemployed.[17] The

largest difference between males and females was seen on the parent variable; over 70% of female respondents reported having at least one child compared to only 14% of males. The most likely explanation for this discrepancy is that it is common for females to partner with older men meaning the fathers of the female's children are likely not represented in this sample due to age constraints, also a greater percentage of females reported being married.[24] Other notable gender differences included a higher percentage of men reporting completing high school or being in university compared to females. Men were also much more likely than females to report having working skills and receiving skills or business training. Relatedly, the proportion of males reporting current employment (38.27%) was more than twice as high as the proportion for females (12.26%). Table 2 provides further descriptive statistics on the sample.

TABLE 2 -- Characteristics of the Sample, Poverty Alleviation Pilot, 2013

	Total No. (%) or Mean ±S.D.	Males No. (%) or Mean ±S.D	Females No. (%) or Mean ±S.D
CONTROLS[a]			
Age	22.3 ± 1.8	22.1 ± 2	22.4 ± 1.7
Asset Quintile			
1	20 (10.7)	5 (6.17)	15 (14.15)
2	47 (25.13)	24 (29.63)	23 (21.7)
3	37 (19.79)	17 (20.99)	20 (18.87)
4	23 (12.3)	13 (16.05)	10 (9.43)
5	40 (21.39)	13 (16.05)	27 (25.47)
Missing	20 (10.7)	9 (11.11)	11 (10.38)
PREDICTORS			
Marital Status			
Never Married	149 (79.68)	69 (85.19)	80 (75.47)
Married	24 (12.83)	5 (6.17)	19 (17.92)
Cohabiting	11 (5.88)	5 (6.17)	6 (5.66)
Divorced/Separated	3 (1.6)	2 (2.47)	1 (0.94)
Number of Living Children			
0	95 (50.8)	67 (82.72)	28 (26.42)

1	61 (32.62)	8 (9.88)	53 (50.00)
2	27 (14.44)	6 (7.41)	21 (19.81)
3	4 (2.14)	-	4 (3.77)
Educational Attainment			
Some primary	5 (2.67)	2 (2.47)	3 (2.83)
Completed primary	6 (3.21)	5 (6.17)	1 (0.94)
Some high school	69 (36.9)	25 (30.86)	44 (41.51)
Completed high school	102 (54.55)	46 (56.79)	56 (52.83)
University or technikon	5 (2.67)	3 (3.70)	2 (1.89)
Passed matric	105 (56.15)	45 (55.56)	60 (56.6)
Completed diplomas outside of school	40 (21.39)	15 (18.52)	25 (23.58)
Completing diplomas outside of school	19 (10.16)	5 (6.17)	14 (13.21)
Employment			
Currently employed	44 (23.53)	31 (38.27)	13 (12.26)
Seeking work in past 3 months	129 (68.98)	64 (79.01)	65 (61.32)
Have working skills	86 (45.99)	50 (61.73)	36 (33.96)
Received skills training	47 (25.13)	30 (37.04)	17 (16.04)
Received business training	42 (22.46)	23 (28.4)	19 (17.92)
Network			
Relatives working	168 (89.84)	74 (91.36)	94 (88.68)
Friends working	75 (40.11)	40 (49.38)	35 (33.02)
Psychology			
Self-confidence in entrepreneurship	81.5 ± 13.6	82.7 ± 13.9	80.6 ± 13.4
Empowerment attitude	84.2 ± 11.4	84.0 ± 13.4	84.3 ± 9.7
Life dissatisfaction	31.0 ± 9.7	30.6 ± 9.7	31.2 ± 9.7

N=106 Females, 81 Males
[a] The entire sample identified as Black or African eliminating the need to control for race;

The results of the bivariate associations between the predictor variables and being employed are in Table 3. Having working skills was significantly associated with being employed for males. Also, life dissatisfaction was significantly associated with employment for females.

TABLE 3 – Demographic, qualification, and psychosocial characteristics of employed and unemployed males and females, Poverty Alleviation Pilot, 2013

	Males		Females	
	Employed	Unemployed	Employed	Unemployed
	No. (%)	No. (%)	No. (%)	No. (%)
Demographic Predictors				

Married	2 (6.45)	3 (6.00)	3 (23.08)	16 (17.20)
Have children	6 (19.35)	8 (16.00)	12 (92.31)	66 (70.97)
Qualification Predictors				
Completed high school	16 (51.61)	33 (66.00)	7 (53.85)	51 (54.84)
Passed matric	14 (45.16)	31 (62.00)	6 (46.15)	54 (58.06)
Completed diplomas	5 (16.13)	10 (20.00)	3 (23.08)	22 (23.66)
Diplomas in progress	1 (3.23)	4 (8.00)	1 (7.69)	13 (13.98)
Have working skills	24 (77.42)*	26 (52.00)*	6 (46.15)	30 (32.26)
Received training	19 (61.29)	19 (38.00)	5 (38.46)	25 (26.88)
Psychosocial Predictors				
Relatives working	15 (48.39)	31 (62.00)	7 (53.85)	51 (54.84)
Friends working	14 (45.16)	26 (52.00)	6 (46.15)	29 (31.18)
Psychology[a]	Mean ±S.D.	Mean ±S.D	Mean ±S.D	Mean ±S.D
Self-confidence in entrepreneurship	81.4±13.0	83.5±15.5	84.2±11.0	80.1±13.7
Empowerment attitude	73.9±9.29	75.9±8.3	75.6±7.02	75.5±8.69
Life dissatisfaction	32.4±10.9	29.6±8.78	38.6±9.00*	30.2±9.44*

*≤0.05, **≤.01; Fisher's Exact Test; N=13 Females, 31 Males
[a] Two-sample t-test with equal variances used to compare the means

The associations among some of the predictors are outlined in Table 4; only the predictors that were hypothesized to be connected to each other, as outlined in to the conceptual model, were tested. Being married and being a parent were significantly associated with each other, both in the total sample and for males. Also, passing the matriculation exam and reporting having working skills were associated for females. Finally, diplomas completed outside of school were strongly associated with self-report of both receiving training and having working skills, though this association went away for respondents who reported diplomas in progress. These associations confirm the decision to include only one predictor in each regression model.

TABLE 4 – Bivariate associations between predictor variables, Poverty Alleviation Pilot, 2013

	Total %	Male %	Female %
Marital status and Children	87.5**	80**	89.47
Education and Skills			
Less than high school	40.0	62.5	25.0
High school	50.0	60.87	41.07

University/technikon	60.0	66.67	50.0
Education and Training			
Less than high school	30.0	40.63	22.92
High school	40.2	50.0	32.14
University/technikon	60.0	66.67	50.0
Passed matric and Skills	50.48	57.78	45.0**
Passed matric and Training	39.05	48.89	31.67
Completed diplomas and Skills	85.0**	100.0**	76.0**
Completed diplomas and Training	62.5**	66.67	60.0**
Diplomas in progress and Skills	47.37	60.0	42.86
Diplomas in progress and Training	52.63	80.0	42.86

*≤0.05, **≤.01; Fisher's Exact Test; N=106 Females, 81 Males

Table 5 presents results for the overall adjusted logistic regression analyses, as well as those stratified by gender. In the adjusted model, if a respondent reported having working skills, they had 2.29 times the odds of being employed. In the gender-stratified adjusted model, it seems this association was driven largely by the males in the sample. Similarly, if a male respondent reported receiving training he had 3.01 times the odds of being employed. Finally, greater life dissatisfaction was significantly associated with employment, though this relationship seems to be driven mostly by the females.

Though most of the predictor variables did not show a significant association with employment, some of the point estimates were markedly different for males and females and warrant some attention. For example, the ORs for being married and for having children were in the expected direction of increasing the odds of employment, but the gender-stratified models revealed marriage may be relevant only for males and parenthood may be more relevant for females than males. Also, the ORs for completing high school and having diplomas in progress were only above one for females. However, it is important to note the confidence intervals for these associations were quite wide, especially for females.

Interestingly, some predictors in Table 5 produced ORs that indicated an inverse relationship with employment, contrary to the hypotheses. For example, passing matric produced consistent ORs less than one in the overall and gender-stratified models with tight confidence intervals indicating decreased odds of employment among youth who passed matric. Finally, having relatives or friends who are working seems to be associated with decreased odds of employment in the overall model and for males, though not for females.

Overall, the differences in these point estimates indicate that for females, being a parent, completing high school, and working towards a diploma may be important predictors of employment. For males, it appears being married, having skills, or receiving training may be important predictors of employment. It is important to note that some of these associations may be endogenous. For example, men who are married may be more attractive to employers and therefore more likely to be employed or men who are employed may be more attractive to potential partners and thereby more likely to be married.[4]

TABLE 5 – Odds ratios for odds of employment for demographic, qualification and psychosocial predictors, Poverty Alleviation Pilot, 2013

	Adjusted OR (95% CI)[a]	Males Adjusted OR (95% CI)	Females Adjusted OR (95% CI)
Demographic Predictors			
Marital Status			
Not Married	1.00	1.00	1.00
Married	1.15 (0.33, 4.00)	1.94 (0.25, 15.2)	0.88 (0.17, 4.62)
Number of Living Children			
None	1.00	1.00	1.00
At least 1	1.66 (0.60, 4.62)	1.44 (0.36, 5.76)	3.63 (0.43, 30.7)
Qualification Predictors			
Educational Attainment			
Less than high school	1.00	1.00	1.00

High school or more	0.78 (0.36, 1.70)	0.52 (0.19, 1.43)	1.77 (0.47, 6.7)
Did not pass matric	1.00	1.00	1.00
Passed matric	0.53 (0.25, 1.15)	0.52 (0.20, 1.38)	0.76 (0.20, 2.85)
No completed diplomas	1.00	1.00	1.00
Completed diplomas	0.62 (0.22, 1.76)	0.53 (0.14, 2.05)	0.77 (0.14, 4.21)
No diplomas in progress	1.00	1.00	1.00
Diplomas in progress	0.49 (0.10, 2.44)	0.30 (0.03, 3.07)	1.17 (0.12, 11.9)
No working skills	1.00	1.00	1.00
Have working skills	2.29 (1.02, 5.12)*	3.22 (1.06, 9.83)*	1.76 (0.48, 6.49)
No training	1.00	1.00	1.00
Received training	2.03 (0.94, 4.40)	3.01 (1.07, 8.46)*	1.57 (0.40, 6.12)
Psychosocial Predictors			
Network			
No relatives working	1.00	1.00	1.00
Relatives working	0.82 (0.39, 1.74)	0.65 (0.25, 1.70)	1.24 (0.34, 4.51)
No friends working	1.00	1.00	1.00
Friends working	0.95 (0.44, 2.05)	0.85 (0.32, 2.29)	1.78 (0.48, 6.56)
Psychology			
Self confidence in entrepreneurship	1.00 (0.97, 1.03)	0.99 (0.96, 1.03)	1.04 (0.98, 1.10)
Empowerment attitude	0.98 (0.94, 1.03)	0.98 (0.92, 1.03)	1.00 (0.93, 1.08)
Life dissatisfaction	1.05 (1.00, 1.09)*	1.03 (0.98, 1.08)	1.11 (1.02, 1.21)*

*≤0.05, **≤.01; N=81 Males, 106 Females

[a]Covariates in adjusted model were age, asset quintile, and sex though only sex was significant at p<0.001 and in the inverse direction with male as the referent; age and asset quintile remained covariates in the models stratified by sex and remained non-significant.

Though these data are cross-sectional and thereby preclude us from making causal inferences, the associations reported here lend themselves to informative interpretations. First, males who reported having working skills or receiving training had increased odds of being employed. This association was not significant for females. As these data are cross-sectional, this association could go in either direction. In South Africa, learnerships, or paid training provided by employers, are a common way for youth to find employment.[16] In this way, the training would precede the employment. For working skills, youth could obtain these through employment or past employment changing the directionality from employment to skills. It is important to note that due to the high

prevalence of labor migration to urban centers, especially among males, many of the most-skilled youth were probably not captured in the sample.[20]

Second, for females only, greater life dissatisfaction was associated with higher odds of employment, contrary to the hypothesis. Again, the directionality could lead from or to employment. Perhaps youth who are more dissatisfied with their lives are more likely to seek opportunities like training or employment to improve their lives. Other analyses of the data revealed most of the sample expected to be in clerical work when they were thirty. Thus, it is also possible that youth currently in informal employment consider it underemployment or that they are not on track to meet their goals thus leading to dissatisfaction. A 2012 report from the International Labour Office (ILO) emphasizes that youth who are employed in developing countries are often 'working poor' meaning they are working for survival and are stuck in low-wage and low-productivity jobs in the informal sector. The ILO goes on to say that employed youth in developing countries often fare worse than youth who are not in education, employment, or training because employed youth can be stuck in a cycle of poverty.[8] As the majority of the employed youth in this study sample were in the informal sector, perhaps their membership in the 'working poor' contributed to their dissatisfaction. Though the association was only significant for females, the lower limit of the confidence intervals was 1.02 for females and 0.98 for males indicating the association between life dissatisfaction and employment is modest and does not seem to differ substantially between males and females.

The remaining majority of predictor variables were not significant in the logistic regression models, violating the hypotheses of a positive association between the predictor variables and employment. Much of this could be attributed to the small sample

size. While the sample included sufficient numbers of youth per the initial power calculations, unemployment in the sample was 50% higher than expected thereby constricting the proportion of the sample who are employed. The limited sample size, especially of employed youth, likely widened the confidence intervals of the associations thereby decreasing their precision and chances of being significant. It is also possible, however, that some of the predictor variables are not associated with employment, which would be contrary to previous studies.

It is interesting to note, however, that some OR point estimates indicate negative associations between the predictor variable and employment. For example, the OR for passing the matriculation exam indicated that this decreases respondents' odds of being employed, though not significantly so. A possible explanation is that the vast majority of employed respondents worked in informal sectors or were self-employed (e.g., braiding hair), a common situation in South Africa even into young adulthood.[11] In Mpumalanga, South Africa most formal employers require a matriculation certificate (verifying a passing score) from all applicants.[11] Unfortunately, in the villages where the respondents were living, there were few formal employers. Thus, if the respondents who passed their matriculation are targeting the limited formal employment opportunities, their odds of employment might be lower than respondents without a matriculation certificate whose only option is informal or self-employment, which were much more common in the sample. Also, as South Africa's economy has shifted to value more skilled, rather than unskilled labor, entry level positions are rare and competitive. A 2010 study from the International Food Policy Research Institute hypothesizes that a matriculation certificate is no longer adequate to ensure employment in South Africa.[14] Though passing matric

produced OR point estimates less than one for both genders, the OR for completing high school for females was greater than one indicating a possible differential effect by gender. This may be because, compared to males, female youth in the sample were less likely to complete high school and overall there is a lower proportion of females participating in the labor force in South Africa.[25] Together, these factors may combine to mean completing high school, even without matric, may still give females an edge on qualifying for employment.

Finally, the point estimates were less than one for having friends or relatives who are working in both the overall model and for males, indicating an inverse relationship with employment, contrary to the hypothesis. However, the point estimates of these measures were greater than one for females and the estimate for working friends was noticeably higher than that for working relatives. Similar results on differences between friends and relatives have been found in other studies. For example, analyses of data from the Labor Market Entry Survey in South Africa in 2010 found friends were identified as the contact for finding work much more often than a household family member, 34% vs. 13% respectively.[11] Further, analyses of data from the 1999 October Household Survey discovered having an employed household member actually decreased a respondent's odds of being self-employed, which was most of the employment reported in this sample.[4] A possible explanation for these differences is the employed friends identified by the respondents were likely working in youth-friendly industries or self-employment and thus better able to connect the respondents to employment than working household members who may be in more formal, and less youth-friendly, industries. Alternatively, youth with household members working may be experiencing less financial strain and

thus less pressure to seek employment. Previous analyses of these data revealed that of the 83 respondents without a household member working, 63.85% reported their household financial situation as poor or extremely poor. By comparison, only 31.07% of the 103 youth with employed household members reported being poor or extremely poor, most reported "just getting by."

Policy Implications

Identifying predictors of youth unemployment can have important implications for policy development in South Africa. In all, the South African government has 114 policies related to unemployment and yet youth employment has remained consistently high for nearly a decade.[1,26] From these analyses, the significant predictors of employment were having working skills, greater life dissatisfaction, and, for males only, receiving training. The importance of skills and training is an intuitive finding, though the fact that 30% or 45 of South Africa's unemployment policies are focused on skills development and nearly 50% of the sample reported having working skills and less than half of these were employed indicates there are other factors at play.[11] Also, the positive relationship between greater life dissatisfaction and employment is not an intuitive finding and merits further investigation.

A 2012 report from the ILO examining youth unemployment in 46 developing countries encountered eight common barriers to youth employment, including: slow economic growth, low quality jobs for youth (e.g., temporary), deficient skills among youth, inadequate job matching (e.g., employers don't advertise available positions, youth don't know how to share qualifications, etc.), youth lack work experience, youth

lack access to capital for entrepreneurship, limited youth involvement in policy formation, and social discrimination.[8] Starting in 1994, after the end of Apartheid, South African policymakers took many positive steps to reduce some of these barriers including improving and unifying the education system, designing and implementing a national skills development framework, and setting quotas for youth participation in some government interventions.[16] Unfortunately, unemployment in South Africa is considered structural. The new economy needs fewer workers with greater skills and thus there are millions of lower-skilled unemployed. Also, due to increases in worker protections and labor unions, wages for low-skilled workers have increased dramatically, outpacing productivity gains and increasing market rigidity.[14,25] When these factors are combined with sluggish economic growth in South Africa youth unemployment seems nearly intractable.

If these analyses are correct in that having working skills is the most significant predictor of employment for youth, it seems increased focus on youth skill development in South Africa is a good intervention as demand for low-skill workers will likely remain low in the long-term.[14,25] A 2007 meta-analysis by the World Bank on youth employment interventions from 84 countries found skills training programs, the most common intervention, can increase employment and be cost effective.[26]

However, youth skill development will not work in isolation. Employers face high retrenchment costs, especially in a slow economy, meaning they are understandably wary to hire youth without previous employers to verify their productivity.[11] This is why the ILO has recommended wage subsidies that incentivize employers to hire by decreasing their labor cost and thereby their prices, which can then stimulate an increase in

consumption demand in a slow-growing economy.[8,14] In 2011, a bill was crafted in South Africa that gave a tax break to employers for hiring youth. For the past few years this bill has been tabled as a battle has ensued between the Treasury and trade unions who are fearful the bill would encourage employers to fire older workers in favor of young ones. In late October, 2013, a diluted version of the bill was passed (1.3 billion Rand tax break, less than the original 5 billion Rand proposal) and is expected to take effect in January. The National Union of Metalworkers of South Africa vows to strike if the bill is implemented so the conflict is far from over but South Africa is taking a step in the right direction.[27] Unfortunately, in rural areas, the lack of formal employers who could benefit from this tax break could minimize the bill's impact on rural youth unemployment.

To navigate a dearth of formal employers, promoting youth entrepreneurship is a growing trend in areas with high youth unemployment. The Entrepreneurship Development Programme in Nigeria extols the benefits of youth entrepreneurship as: youth will employ other youth; gain meaning; develop skills, resilience, and innovation; provide more goods and services in communities; and be more flexible to demand in the market.[9] In the World Bank meta-analysis, entrepreneurship programs had the highest positive impact rating, though few of these interventions were included, thereby inhibiting generalizability to other similar interventions.[26] Despite the potentially positive results of increased youth entrepreneurship, a 2010 study of unemployment in South Africa from the International Food Policy Research Institute says "job creation in the formal sector is crucial to the well-being of South Africans today" because earnings are higher in formal sectors compared to informal sectors and past experience in the formal market decreases one's future chances of unemployment.[14] Further, the ILO stresses that

the success rate for youth enterprises remains low as do the wages. Also, it is not always reasonable to expect high risk-taking among youth, who often have low access to capital.[8]

Regarding how to increase skill training for South African youth, two key issues emerge. First, what skills should youth have? The ILO recommends demand-driven training or training that is informed by South African employers and industries.[8] The Monyetla training initiative is a good current example of this. Through this initiative, South African youth are being trained in communication technology to handle business process service outsourcing for companies looking to decrease costs.[10] The second key issue in providing skills training to youth is how they will access it. In the sample for this pilot, all of the youth reported no training programs available in their communities. In rural areas especially, searching for work is capital-intensive because it necessitates travel to use computers, attend trainings, etc. So training programs will need to ease transportation issues and/or cost if rural youth are to participate in a meaningful way.

Conclusions

From these analyses, it seems South Africa is making good strides to reduce youth unemployment by focusing on youth skill development.[11] However, as evidenced by the consistently high youth unemployment, the current policies are inadequate.[1] The youth employment meta-analysis from the World Bank found programs that target disadvantaged youth are as good, if not better, than general programs.[26] As youth unemployment is highest among rural, Black, and female youth, more programs need to be targeted at these populations.[3] In rural areas, skills and training programs will need to

invest extra resources into increasing access to the program for rural youth by decreasing transportation costs and making sure their advertising reaches the youth. The World Bank meta-analysis also found youth employment programs were made less effective by inflexible labor markets so introducing measures, like the recent wage subsidy bill, could incentivize more hiring by employers and stimulate demand in the economy.[11,14,26] Finally, the lack of formal employers in rural areas could keep youth unemployment high even if youth have more skills and employers have incentives to hire them. Promoting and supporting entrepreneurship among youth could be an effective measure to decrease youth unemployment while rural areas continue developing. However, youth entrepreneurship provides low wages and concentrates risk in a vulnerable population meaning it cannot be a broad or long-term solution to youth unemployment in South Africa.[8,26] In 2010, 90% of the 15-24 year olds in the world were living in developing countries. South Africa and many other developing countries stand poised to benefit from the youth dividend, or a large new generation of workers, if they can facilitate meaningful training and employment opportunities for today's youth.[8]

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