Determinants of Youth Earnings: The Case of Harare

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Abstract

This article investigates the factors that are important in determining youth earnings in the formal sector in Harare. The theoretical approach adopted is the human capital theory. Youth earnings are regressed against a number of human capital variables, personal characteristics variables as well as socio-economic variables. The model is applied to a particular age group. The results suggest that human capital variables are important determinants of youth earnings in the formal sector. These include the number of years spent in education, the highest level of education achieved and the choice of subjects at GCE 'O' level.

Introduction

Early classical models of wage determination argued that firms simply take the market wage rate as given when making employment decisions. According to these models wages are determined through the interaction of market forces. The argument is that if workers were underpaid in one industry they simply withdraw their labour services and go to those industries offering higher wage rates. This would continue until equilibrium is reached.

The above classical models of wage determination are based on two crucial assumptions, that workers are identical and that mobility between jobs is costless. Recent theories of wage determination recognise that workers have different characteristics. For example, theories of wage discrimination argue that workers are judged by factors which have nothing to do with their productivity. These factors include gender, race and religion among others. On the other hand, human capital theory argues that individual wages differ because workers possess some acquired characteristics. According to human capital theory, individuals invest in themselves through

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schooling and training. Through such investment individuals attain certain characteristics which will have an influence on their productivity and hence on their remuneration as well.

This article sets out to investigate the determinants of earnings in Harare's formal sector.[2] The article uses a sample cohort of 21-year olds who were observed in 1996. The survey collected information on the individual's earnings, employment history, education, occupation and training and socio-economic characteristics. Hence, our model incorporates human capital variables as well as personal and socio-economic variables. The results should not be interpreted more broadly for the following two reasons. First, because the sample used is confined to Harare. Second, because the study is confined to a particular age-group.

The analysis of the determinants of wages is important because of the assertion by human capital theory that individual characteristics acquired through education and training have a significant impact on earnings. Hence, the analysis has important implications on private investment in education. The investigation of the determinants of earnings is undertaken by estimating an earnings equation. The results obtained show that human capital variables are important in explaining youth earnings.

Most of the research on earnings determination has been confined to developed countries. Studies from developed countries include those by Dolton and Makepeace (1986, 1987, 1990), and Dolton, Makepeace and Klaauw (1989) among others. The limited number of similar studies in developing countries is because data on human capital variables is sketchy. In Zimbabwe, not much research has been done on earnings determination. Velenchik (1994) estimated an earnings function for Zimbabwe's manufacturing sector with hourly earnings as the dependent variable. The results suggest that human capital variables, race and sex have a significant influence on earnings.

This article is different from the Velenchik study in that it concentrates on a particular age group. The article assesses earnings determination during the individual's youthful career.

The article is organised into five sections. Following this introductory section, Section 2 describes the Methodology. Sections 3 looks at the data set. Section 4 presents and discusses the research findings. Finally, Section 5 concludes the article.

Methodology

As noted above, human capital theory argues that an individual acquires human capital in order to increase his/her future expected earnings. Human

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2.   Harare is defined here to include Chitungwiza.

capital is defined as the stock of personal attributes which increase the individual's productivity and hence the individual's earnings. Important determinants of earnings according to human capital theory would include such factors as the time spent in education and the individual's work experience.

A framework for specifying the relationship between earnings and schooling and work experience was given by Mincer (1974). Thus, following Mincer's framework it has now become standard in labour economics to express the earnings equation as,

$$1n(w)_i = \alpha + \beta_i X_i$$

where i indexes the individual, X is a vector of individual characteristics which include the number of years spent in education and work experience and β_i is a vector of coefficients to be estimated. We expect the coefficient for the number of years spent in education to be positive. Human capital theory also argues that an individual's earnings initially rises and then falls. This implies that the coefficients of the variables *work experience* and *work experience*[2] should be positive and negative respectively.

The quality of the individual human capital can be measured by the individual's highest level of education. Three variables indicating the respondent's highest level of education are included in the model namely, *Primary, Zimbabwe Junior Certificate (ZJC), Ordinary Level ('O' Level), Advanced Level ('A' Level)* and *Higher Education.* It is important to point out that human capital is not homogeneous. For example, two individuals with the same level of education could earn different wages because they studied different subjects. Thus, the labour market could value some subjects more than others. The survey collected information on some subjects studied at GCE 'O' level. Hence, we include in our model the subjects obtained at 'O' level. Other human capital variables used are the number of jobs and on-the-job training. The number of jobs is used as a proxy for the individual's work experience.

The demographic variables included in our model, g*ender, marital status* and *dependents* have been found in other studies to have a significant influence on earnings (Miller 1987, De Beyer and Knight 1989). In particular, the variable *gender* is meant to test the hypothesis involving gender discrimination in the labour market. The variables **SClass1** and **SClass2** can have two interpretations. First, they can be interpreted as human capital variables as they indicate the type of human capital that the respondent possesses. Second, they can be interpreted as socio-demographic variables since they provide an indicator of certain advantages that the individual can enjoy. For example, an individual whose parents are well educated can have certain social networks while boarding secondary education is generally

considered superior to day secondary education. The full list of the variables is given in the next section.

Data

In 1996 researchers from the School of Economics, University of Hull and the Department of Economics, University of Zimbabwe, conducted a survey of 21-year olds in Harare. The survey was undertaken under the project 'School-to-Work Transition and Youth Unemployment in Zimbabwe.' Households were identified with the assistance of the Central Statistical Office. A sample of 100 enumeration areas was randomly selected and enumerators were sent to conduct the survey. At each household the enumerators asked if there was a 21-year old. Once a 21-year old was identified the individual was asked a series of questions about his/her personal details, current earnings, labour force experience, expectations after leaving school and social background.

A total of 660 individuals were identified and interviewed. The survey covered the employed, the unemployed and those who were still in education. In this article we have decided to focus on those who were formally employed. Other groups will be considered in subsequent articles. Most of the information used in this article such as earnings, marital status and academic qualifications was obtained directly from the answers of the respondents. The full list of the variables used in the estimations is as follows:

Gender: A dummy variable taking value 1 if the respondent is male and 0 if female.

Marital Status: A dummy variable taking value 1 if the respondent is single and 0 otherwise.

Dependents: A variable indicating the number of dependents that the respondent has.

Educate: A variable indicating the number of years spent in education.

Subject1: A dummy variable taking value 1 if respondent passed English at GCE 'O' Level and 0 otherwise.

Subject2: A dummy variable taking value 1 if respondent passed either Shona and/or Ndebele at GCE 'O' Level and 0 otherwise.

Subject3: A dummy variable taking value 1 if respondent passed Mathematics at GCE 'O' Level and 0 otherwise.

Subject4: A dummy variable taking value 1 if respondent passed Science at GCE 'O' Level and 0 otherwise.

Primary: A dummy variable taking value 1 if respondent's highest level of education is primary education and 0 otherwise.

ZJC: A dummy variable taking value 1 if respondent's highest level of education is the Zimbabwe Junior Certificate and 0 otherwise.

'O' Level: A dummy variable taking value 1 if respondent has 5 'O' level subjects and 0 otherwise.

'A' Level: A dummy variable taking value 1 if respondent has 3 'A' Level subjects and 0 otherwise.

Higher Educate: A dummy variable taking value 1 if respondent has either college or university education and 0 otherwise.

Work Experience: A variable indicating the number of jobs the respondent has had.

Training: A dummy variable taking value 1 if the respondent had received or is receiving on-the-job training and 0 otherwise.

SClass1: A dummy variable taking value 1 if respondent attended a boarding secondary school and 0 if the respondent attended a day secondary school.

SClass2: A variable indicating the social status of the respondents' parents. Professional parents have a score of 4, skilled parents 3, semi-skilled parents 2, and unskilled parents 1.

Unfortunately, not all respondents answered all questions. In some cases although respondents indicated that they were formally employed, they did not give all the details. Thus, after confining ourselves to the formally employed respondents and ignoring those who gave inconsistent answers and those who did not answer all questions, we ended up with a sample of 194 observations. The 194 respondents consisted of 38 women and 156 men. All the 194 individuals included in the analysis had received some formal education. Since all the individuals included in our sample were black Zimbabweans, it meant that the racial discrimination hypothesis could not be tested. Table 1 below gives the summary statistics of the resultant sample.

Table 1: Summary of Statistics

	Average	Observations
Earnings (Primary)	747.80	5
Earnings (ZJC)	878.05	77
Earnings ('O' level)	1 884.39	89
Earnings ('A' level)	2 036.36	11
Earnings (Higher Education)	3 329.16	12
Total Earnings	1 553.66	194
Years of Schooling	11.25	194
Number of Dependents	1.22	194

Empirical Findings

Unfortunately, due to degrees of freedom constraints it was not possible to include all the variables in a single estimation. Our first estimations included all the variables defined above minus the subjects obtained at 'O' level. The human capital variables; *Educate, 'O' Level* and *Higher Educate* had a positive and significant influence on earnings. The variables *Primary, ZJC* and **'A' Level** were not statistically significant. The variable *ZJC* even had a wrong negative sign.

Contrary to our expectations the variables *Work Experience*, *Work Experience*[2] and *Training* were not statistically significant. The demographic variables as well as the socio-economic variables were also not statistically significant. It is important to note that the insignificance of these variables might be due to some omitted variables or some mispecification errors.

In the second estimation we introduced the subjects studied by the individual at 'O' level. As noted above we had information for the following subjects: English, Shona or Ndebele, Mathematics and Science. We had to drop some variables in order to accommodate the new variables. The obvious candidates for removal were the insignificant variables that is, *Primary*, *ZJC* and *'A' Level*. The results obtained are presented in Table 2 below. The variables *Educate*, *'O' Level*, *Higher Educate* and *Subject1* have the right positive signs and are statistically significant. The other three subjects, though having the right signs, are statistically insignificant. Again the demographic and socio-economic variables were statistically insignificant.

The fact that *Primary, ZJC* and **'***A' Level* are not significant determinants of earnings is consistent with the experiences in the labour market. Few if any firms in Zimbabwe use either primary education, the Zimbabwe Junior Certificate or 'A' level for recruitment processes. These have become irrelevant to employers. They are simply used to screen those who wish to proceed with their education. Employers use 'O' level as a screening devise for the recruitment process. After 'O' level the relevant information used by employers is contained in diplomas and degrees offered by institutions of higher learning.

Table 2: Regression Results and their Interpretations

Variables	Coefficient	t-ratio
Constant	5.66	17.14
Gender	0.08	0.82
Marital Status	0.02	0.17
Dependents	0.03	1.16
Educate	0.07	2.15
'O' Level	0.25	2.48
Higher Educate	0.46	2.63
Subject1	0.36	3.47
Subject2	0.11	0.98
Subject3	0.08	0.76
Subject4	0.12	1.17
Work Experience	-0.05	-0.97
Work Experience^2	0.003	0.67
Training	0.10	1.23
SClass1	0.02	0.70
SClass2	0.12	1.24
Adjusted R^2	0.47	
Number of observations	194	

From the results in Table 2 we can consider two individuals with identical values for all the variables except for earnings and the highest level of education achieved. We note that the earnings for an individual who has 5 'O' level subjects will be earning 25% higher compared to a similar individual without the 5 'O' level subjects. On the other hand, earnings for an individual who has higher education will be 46% higher than an individual without higher education. We can also draw some conclusions between the earnings differentials for two individuals, one with 5 'O' level subjects and one with higher education. The individual with higher education will earn approximately 21% higher than the one with 5 'O' level subjects. If we compare two individuals, one with English at 'O' level and one without, we note that the individual with English at 'O' level will earn approximately 36% more.

Our results compare well with other studies from both the developed and developing countries. For example, Jones and Teal (1993) and Velenchik (1994) estimated earnings equations for Ghana and Zimbabwe respectively using the *Regional Programme on Enterprise Development* data and found that human capital variables have a significant influence on earnings. Our findings are also consistent with Velenchik's findings in that the returns to education are larger at higher levels of education. Velenchik also found supporting evidence of gender and racial discrimination. We however, find no evidence to support the gender discrimination hypothesis. The Jones and Teal study found that returns to education are highest at low levels of education. De Beyer and Knight (1989) found evidence in support of human capital theory in Kenya and Tanzania. In Tanzania, they also found evidence of discrimination in favour of men and non-Africans.

Conclusions

The main objective of this article was to determine the factors that influence youth earnings in Harare's formal sector. This was achieved by estimating a youth earnings equation. The results indicate that the number of years spent in education, 'O' Level and higher education are important determinants of earnings. English at 'O' level is also found to have a major influence on earnings. After 'O' level the results suggest that higher education lead to higher wages. Thus, the results presented in this article confirm the predictions of the human capital theory. The results are also generally similar to those found in other countries. However, contrary to evidence found in other developing countries, we found no evidence to support the gender discrimination hypothesis. This could be a result of Government policy which since independence has been aimed at correcting both gender and racial discrimination in the labour market.

The results presented in this article have important implications for private investors in education. The results imply that there are benefits to

private investment in education. Confirming our expectations is the finding that private returns to education are larger for those with higher education. As noted above these results have to be treated with great care because; firstly, the study concentrates on a particular age group and secondly, the sample is confined to Harare. Nevertheless, the results make an important starting point in further research in this area. For example, with a larger sample it will be important to estimate two separate earnings equations, one for males and the other for females. In addition, post-secondary school training could be separated into different categories.

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