

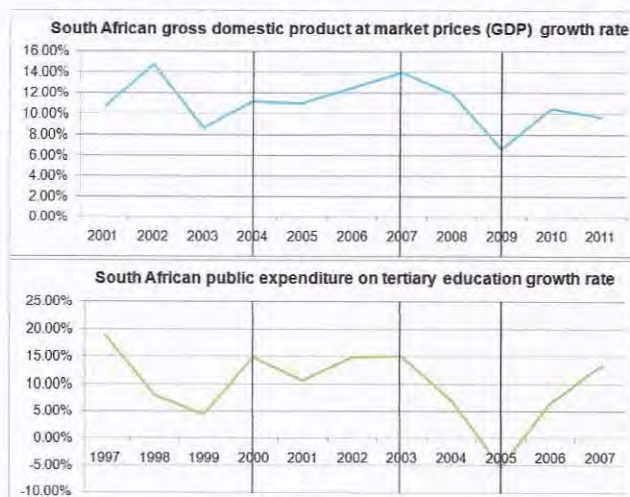
# 1

## CHAPTER

## INTRODUCTION

The benefits of higher education are not limited to the remuneration received by graduates. Society also benefits from higher levels of education since this corresponds with lower unemployment and poverty levels, greater flexibility of the labour force and increased productivity of educated workers (Morgan & David, 1963:423; Baum & Ma, 2007:2). It therefore stands to reason that there is a positive correlation between formal education and the quality of the labour force within a country. This is substantiated by the fact that education renders a significant contribution to economic growth across countries and over time (Pencavel, 1991:333-335; Turcinkova, 2012:1037). The relationship between growth in public expenditure on tertiary education and economic growth is apparent from Figure 1-1. It is apparent that there is a four year lag between economic growth and growth in public expenditure on tertiary education, the main reason being that it takes at least three to four years to complete a tertiary degree in South Africa.

**Figure 1-1: Growth in gross domestic product at market prices and growth in public expenditure on tertiary education in South Africa.**

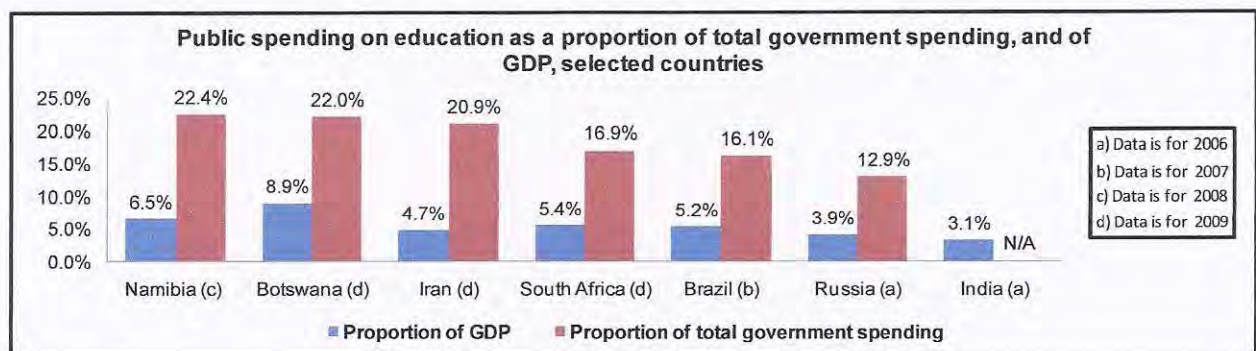


**Source: Author's (2013)**



When comparing South African public spending on education with selected countries in Figure 1-2, it is apparent that spending on education in relation to GDP is relatively high. Yet, when comparing public spending on education as a proportion of total government spending, South Africa's ratio is fair. Public spending on education in South Africa could thus be seen as appropriate in comparison to other countries. Furthermore, education's symbiotic relationship with health is especially important to developing countries, since an increase in education will contribute to increases in health, relating back to productivity and economic growth in the long run (Smith & Todaro, 2009:369-372).

**Figure 1-2: Public spending on education as a proportion of total government spending, and of GDP, selected countries.**



**Source: Kane-berman & Holborn (2011:438-440)**

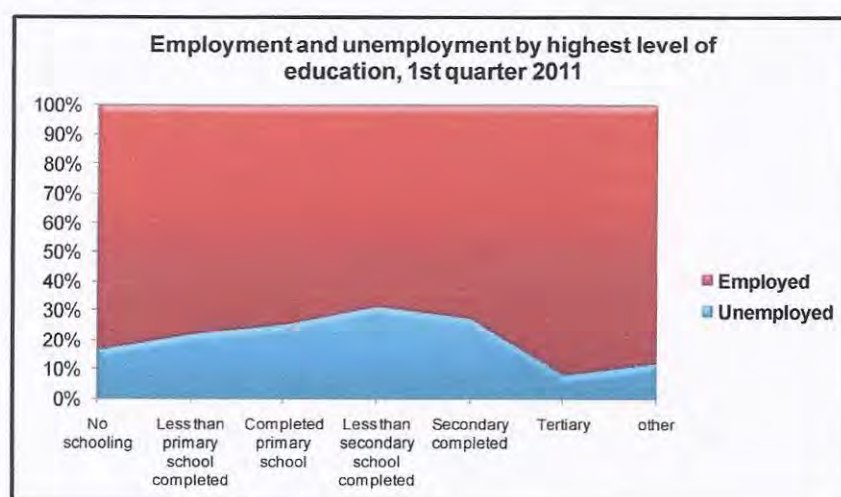
Education enrolment is an important factor in economic development, yet enrolment is dependent upon the rate of return to investment on education (Smith & Todaro, 2009:375-378). University enrolment in South Africa increased by 17.8% from 2005 to 2009, yet the proportion of people aged between 20 and 24 attending an educational institution has decreased by 5.5% for the same period (Kane-berman & Holborn, 2011:451). It can therefore be said that South Africa is facing an enrolment decrease in relation to its typical university age population. This could result in further supply shortages of tertiary educated workers and affect the employment rate of the highest level of education. Countries with high unemployment levels such as South Africa, where a quarter of the labour force is unemployed should benefit from higher levels of education (Statistics South Africa, 2012:vi). According to the Solidarity Research Institute (2012:3), South Africans who have completed high school do not fare much better than their counterparts who have dropped out at an earlier stage, while those with



some form of tertiary qualification fare much better than individuals who only have a National Senior Certificate.

During the first quarter of 2012, Statistics South Africa (2012:xvi) reported that higher levels of education are associated with lower unemployment rates. This statement is clear when considering that the South African unemployment rate for those with some form of tertiary qualification was 9.5% while those with only a National Senior Certificate was 27.1%. The higher private rate of return to tertiary education together with lower unemployment levels in comparison to secondary education indicates a higher demand for tertiary education. A graphical representation of employment and unemployment by highest level of education may be beneficial in showing the gains of a higher education in South Africa. Figure 1-3 indicates that those with a tertiary education had the lowest unemployment rate (8.5%) for the first quarter of 2011, while those with secondary education (27.5%) and those with less than secondary education (31.4%) have the largest unemployment rates for the same period.

**Figure 1-3: Employment and unemployment by highest level of education, first quarter 2011.**



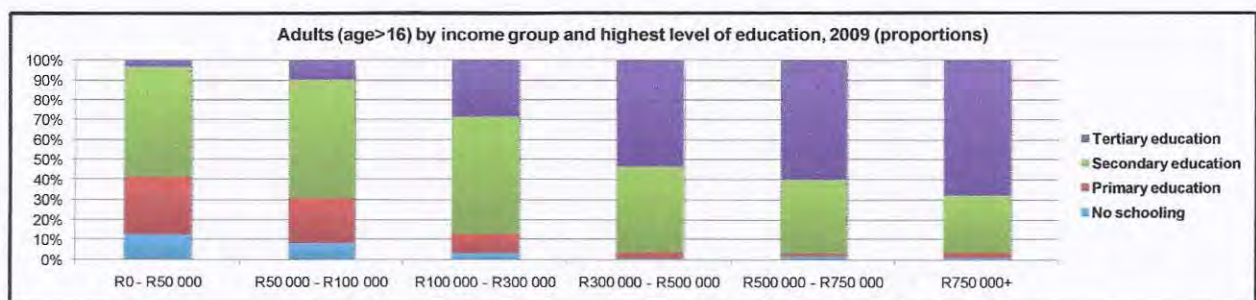
*Source: Kane-berman & Holborn (2011:525)*

Apart from the lower unemployment rate, tertiary education also renders a higher annual income compared to primary and secondary education as can be seen from Figure 1-4, where those with some form of tertiary education represented 67.4% of the population earning an annual income higher than R750 000 for the year 2009. Higher levels of education thus result in an increase in the private benefits received, yet this



may differ depending on the course of study. From 1990 to 2000, international trends indicated a decline of 18.2% in students majoring in economics degrees, the major reason being declining interest in this field of study (Siegfried & Round, 2001:211-216). These trends might indicate that potential economics graduates reacted to perceptions of declining employment opportunities or a decrease in the future private benefits. Introductory economics has been described as a problem subject (Van der Merwe, 2006:150; Fourie, 2010:7), where students find the subject matter difficult and are apprehensive about introductory economics courses (Benedict & Hoag, 2002:31). Such characteristics associated with economics as a subject matter might discourage future graduates to enrol in economics degrees.

**Figure 1-4: Adults by income group and highest level of education, 2009 (proportions)**



*Source: Kane-berman & Holborn (2011:263)*

Economics as a subject matter is important, since it provides students with the ability to access existing knowledge as well as the skills to apply existing knowledge in order to research issues and create new knowledge (Steenkamp, 2006:13). The private rate of return to higher education in economics should thus act as a motive to enrol in economics courses, where the benefit or remuneration received is dependent upon the labour market and several other factors including gender, field of study as well as the level of degree obtained (Preston, Broder & Almero, 1990:15; van der Merwe, 2011:198). To achieve a satisfactory level of social educational benefits, it is important to ensure that the private educational benefit is high enough to serve as motivation.

The level of education is not the only factor influencing a person's annual salary. Other factors influence income, including age, population group, location, and occupation as well as gender (Telles & Lim, 1998; Mwabu & Schultz, 1996; van der Merwe, 2011:198).



According to Preston *et al.* (1990:17) agricultural students with advanced degrees have higher annual salaries in comparison to students who have only obtained a bachelor's degree, while males earned significantly higher incomes than females. The initial occupation entered into may vary between students within the same major and therefore influence the annual starting salary of former economics degree students. Decker (1974:119) identified two primary occupational categories for students majoring in economics. These are economic analyst and business management positions. It is therefore important to identify the primary occupational categories and whether these have a significant influence on the initial annual salary of economics degrees graduates. Information regarding entry into the labour market for students studying economics degrees could provide valuable insight, since imperfect competition characterises virtually all labour markets (Preston, *et al.*, 1990:13).

Firstly, this study will consider the factors influencing the income of tertiary educated individuals and whether the different level of tertiary education plays a significant role in increased income. Secondly, this study aims to estimate the factors influencing the income of majors within the School of Economics for the North-West University, Potchefstroom campus. A special focus will be placed on the significance of the level of tertiary education as a factor of influence on income.

## **1.1 Problem statement**

The expected private returns to education are typically expected to increase at a higher rate than the private costs involved, especially within developing countries (Smith & Todaro, 2009:389-390). This statement argues that the expected private benefit of education is positive and generally increases as the level of education increases. Is this true for all levels of tertiary education and for students of different majors?

In December of 2012, the Solidarity Research Institute (2012:3) reported on the South African labour market and found that there is a significant increase in the private benefits from secondary to tertiary education. Furthermore, the results indicated that the private benefit for each additional level of secondary education is positive, yet the benefit does not increase significantly as the level of secondary education increases. Does the private benefit significantly increase with each additional level of tertiary education, in contrast to secondary education? A significant increase in the private



benefits received for each additional level of tertiary qualification would serve as a motivational factor for South African students to continue their tertiary education.

The private benefit received could also differ depending of the type of tertiary qualification obtained. It therefore stands to reason that the private benefits received by students of a specific major could differ from the national average. Do the private benefits of the School of Economics alumni of the North-West University's Potchefstroom campus increase with each additional level of tertiary education? South African literature describes economics as a problem subject (Van der Merwe, 2006:151), while international trends during the 1990s demonstrated a decline in economics degrees (Siegfried & Round, 2001:203). It therefore becomes important to focus on the influence of education on income as well as identifying other factors that might influence the income of students who major in economics degrees.

This study will consider the factors influencing the income of tertiary educated individuals and whether the different level of tertiary education plays a significant role in increased income

Firstly, this study aims to measure whether education significantly influences the income of South Africans who have completed a tertiary qualification, irrespective of their majors. Secondly, this study aims to measure whether education significantly influences the income of former graduate and undergraduate economics, risk management and international trade students of the School of Economics within the North-West University, Potchefstroom campus for the period 2009-2012. Other factors influencing income will also be considered in both cases. Some of these factors include age, gender, population group, work experience, occupation, and location of employment.

## **1.2 Motivation**

According to the human capital theory, an individual will pursue higher education to the extent that the monetary rewards exceed the costs involved (van der Merwe, 2011:181). Consequently, the anticipated private returns to education are significantly associated with an individual's enrolment selection for additional levels of education (Menon, 1998:251). It therefore stands to reason that a lower rate of return for higher levels of tertiary education would negatively impact the enrolment for those additional levels of education. Where enrolment can be seen as the demand for tertiary education, the



absorption rate can be seen as the demand for labourers with some form of tertiary education. The absorption rate for those with some form of tertiary education is important since it could assist in predicting whether education is significant in determining the income of those individuals.

South Africa's labour force absorption rate of 41.3% is relatively weak when compared to the average absorption rate of 64.8% for the member countries of the Organisation for Economic Cooperation and Development (OECD). Yet the absorption rate for those with some form of tertiary education is approximately 80% (Solidarity Research Institute, 2012:5-10). It therefore becomes important to measure the private rate of return for each additional level of tertiary education to establish whether higher levels of tertiary education render significantly higher private rates of return in comparison to lower levels of tertiary education. Higher private returns would thus imply an increase in enrolment, which would be beneficial for South Africa's economic development. The rate of return to education differs from each major or course of study and as a result the rate of return to tertiary economic education may differ from the average private rate of return to tertiary education within South Africa.

Economics issues both in South Africa and abroad have become more prevalent in recent years. Tertiary economic education provides students with the ability to access existing knowledge and skills in order to explore these issues and create new knowledge (Steenkamp, 2006:13). It therefore stands to reason that tertiary economic education may provide students with the skills to attain solutions for current economic issues. Trends in American undergraduate economics degrees have shown a 14.31% decline from 1990 to 2000, while a 38.67% increase in undergraduate economics degrees was recorded from 2001 to 2010 (Siegfried, 2012:335). International trends have also shown a decline in students majoring in economics degrees during the 1990s, where a decline of 18.2% was recorded (Siegfried & Round, 2001:211-216). Such trends might respond to changes in the future private benefits received by students majoring in economics degrees, it therefore becomes important to measure the future private benefit since it could serve as a motivational factor for students aiming to complete an economics degree.

Determining the factors which might assist in improving future income of current economic graduates will assist both economic educators and future students majoring in



economics degrees. This study aims to provide valuable information which can assist in estimating factors that could increase potential future income of current students majoring in economic degrees at the North-West University. Secondly, this study aims to establish whether higher levels of tertiary education for South Africans would significantly increase income, as well as identifying those factors influencing tertiary educated individuals' income.

### **1.3 Research objectives**

The research objectives for this study are twofold:

Firstly, the primary objective for the macroeconomic part of this study is to determine whether the level of tertiary education significantly influences the income of tertiary educated individuals within South Africa. The secondary objective is to identify other factors which might influence the income of tertiary educated individuals. Some of these factors include age, gender, population group, occupation, and the location of primary employment.

Secondly, the primary objective of the microeconomic part of this study is to determine whether the level of tertiary education significantly influences the income of alumni of the School of Economics at the North-West University, Potchefstroom campus. Secondary objectives are associated with the primary objective on the basis of income and include:

- Identify those factors that might influence the income of graduate and undergraduate alumni, as well as estimating the significance of specific factors of influence.
- Identify the primary occupations for the School of Economics alumni, as well as determining whether occupation is a factor of influence.

The purpose of this study is to contribute valuable information regarding factors that could assist in improving future income of current economic graduates.

### **1.4 Method**

Firstly, a literature overview is provided on international and South African literature regarding the private rate of return to tertiary education as well as the factors influencing



tertiary educated individuals' income. Literature on student's expected private rate of return to education and the private rate of return to tertiary economic education will also be given. Special emphasis will be placed on the significance of tertiary education on income.

Secondly, primary data will be sourced from the National Income Dynamics Study (NIDS) which is a national panel study implemented by the Southern African Labour and Development Research Unit (SALDRU) based at the University of Cape Town's School of Economics. NIDS sourced a nationally representative sample of primary data from approximately 28 000 individuals across South Africa, the survey is repeated every two years with the same individuals. This study used the adult wave 2 data set which was completed during 2010 and 2011. The primary data will be used to establish whether education significantly influences the income of tertiary educated individuals in South Africa. Furthermore, the data will be used to establish other factors of influence on income of tertiary educated individuals in South Africa.

The empirical study for the microeconomic part of this study will entail the distribution of a questionnaire to obtain the data required to complete this study. The questionnaire was distributed to former bachelor's, honours, master's degree and Ph.D. students of the School for Economics at the North-West University's Potchefstroom campus. The questionnaire comprised multiple choice questions concerning income, demography and academic history. It is important to note that the bachelor's degree alumni used for this study only includes alumni who studied either one of two popular economics degrees. These were Economics & Risk Management and Economics & International Trade. The honours and master's degree alumni who participated in this study only includes alumni who have studied either one of three popular degrees within the School. These were Economics, Risk Management and International Trade. The methodology and empirical results of this study will be discussed in chapters 3 and 4, respectively.

Thirdly, cross-tabulations will be used to establish whether there is a statistically significant relationship between the earnings an individual receives and the level of tertiary education obtained. Multinomial Logistic Regressions will be used to establish the degree to which the influential factors contribute to the relative annual starting salary of bachelor's, honours, master's and Ph.D. alumni of the School for Economics, as well as for the NIDS data set.



## **1.5 Delimitation**

The microeconomic part of this study only focuses on Economics, Risk Management and International Trade alumni for the period 2009-2012 at the North-West University's Potchefstroom campus. The questionnaire responses are restricted to alumni and feedback and cannot be verified independently due to accessibility, availability and ethical constraints. Fulltime post graduates who have obtained their degree between 2009-2012 are considered to be income dependent and are therefore excluded in the first questionnaire.

## **1.6 Defining the concepts**

This section comes to define and explain certain concepts that are used throughout this study.

### **1.6.1 Private rate of return to education**

To define or explain the private rate of return to education, it is important to consider the two components of this concept. These are the costs and benefits of education realised by the individual who has invested in his or her education. The benefits can be seen as the income earned by the individual and the costs are seen as both the monetary and opportunity costs involved in obtaining education (Patrinos and Psacharopoulos, 2010:305-306).

What is important to note is that although the rate of return to education does have a cost component, this cost component is not accounted for in the Mincerian earnings function, which is the benchmark model for the estimation of the rate of return to education (Kenayathulla, 2013:381). The Mincerian earnings function is frequently used in literature and remains a credible method for estimating the rate of return to education (Ren & Miller, 2012:158; Kenayathulla, 2013:381; Sohn, 2013:42).

### **1.6.2 North-West University (NWU)**

The North-West University (NWU) has three campuses of which the Potchefstroom campus, located in the North-West province within South Africa, is the largest and houses the head office of the university. The university is a newly merged institution since 1 January 2004, while its other two campuses are located in Mafikeng and



Vanderbijlpark, South Africa. Since its merger, the university has over 64 000 students including both full-time and distance education. The Mafikeng and Potchefstroom campuses are seen as the main centres of the university, where the latter caters to Afrikaans speaking students and where the former is broader in orientation.

## **1.7 Summary and structure**

In this chapter, a brief overview was provided on the private and social benefits of higher education, and the positive relationship between education and income. Furthermore, the importance of tertiary economic education was highlighted and a brief overview was provided on international enrolment trends in economics degrees.

*Chapter 2* provides international and South African literature on the private rate of return to tertiary education and tertiary economic education. Literature on the factors influencing the income of tertiary educated is also provided.

*Chapter 3* centres on explaining the questions that were asked in the questionnaire and how this can be used to determine the significance of education and the other factors of influence on income for the microeconomic part of this study. Furthermore, the primary data sourced from NIDS will be explained as well as the way in which it can be used to measure the rate of return to tertiary education in South Africa. Chapter 3 also reports the raw primary data that was obtained from a questionnaire which was distributed to former economics degrees students.

*Chapter 4* comes to determine whether education and the other factors of influence are statistically significant in determining the income of tertiary educated individuals within South African and also for School of Economics alumni at the North-West University, Potchefstroom campus. In chapter 4, the factors influencing the income of tertiary educated individuals will be estimated to test whether the factors are statistically significant in explaining differences in income. A multinomial logistic regression model will be used to determine the relationship between the dependent variable (income) and the independent variables (education, age, gender, etc.). Cross-tabulations will also be used to determine the significance of level of tertiary education obtained when considering an individual's income.

*Chapter 5* will conclude this study with a summary of these chapters and will provide recommendations.