UNIVERSITY OF THE WESTERN CAPE

DEPARTMENT OF ECONOMICS

A comparison of South Africa's colonial education system with other African countries

by

Dumine Tocknell (3690471)

A full dissertation submitted in fulfilment of the requirement of the degree of Master of Commerce in the Department of Economics, University of the Western Cape.

Supervisors: Dr Christie Swanepoel and Ms Rochelle Beukes

November 2021

DECLARATION

I, Dumine Tocknell, hereby declare that the work on which this dissertation, entitled "A comparison of South Africa's colonial education system with other African countries", is my original work (except where acknowledgements indicate otherwise) and that neither the work documented, nor any part of it has been, is being or is to be submitted for another degree or examination in this or any other university. I authorise the University of the Western Cape to reproduce for the purpose of research either the entire or any portion of the contents in any manner whatsoever.

Signature:

Date:

ABSTRACT

Past historical events are crucial for understanding economies and answering imperative questions such as why economic inequalities persist, why certain countries experience economic growth or lag behind, and how societies and institutions shape economic performance. Past events such as colonialism, where colonial powers rooted themselves in the African continent for the aim of economic dominance, are said to have left lasting effects, especially with regards to the development outcomes within the colonised country.

Colonising powers realised that they could gain more control through mental means rather than through physical control. One way in which a country could achieve this dominance over another was through education and the education policy imposed by the colonial power. Education is seen as one of the most vital factors that facilitate advancements and contribute to it by encouraging technological innovation, leading to generating greater income growth as labour and capital become more productive. The investment in education, therefore, fosters the human capital of a nation. Investing in education is fundamental for a country as its 'stock of skills' matters significantly for its growth and prosperity

This study provides a local case study of South Africa in the broader context of Africa. The study serves to identify the impact of the colonial education system employed in South Africa by means of data obtained from the early nineteenth-century census records. A crucial element of economics is understanding the history; therefore, this study sheds some light on the education legacy in South Africa. The population census of 1911 was the first census on the newly formed Union and is vital in building our understanding of South Africa.

This study shows that education inequalities continued to persist even with the union of South Africa forming in 1910. A review of the past uncovers that residents of the Union were still being discriminated against due to their race. Education in the Union was making progress, but unfortunately, White residents were reaping the benefits. Even though literacy rates did increase for non-White individuals during this time, numerous laws still allowed for considerable education disparities among races.

Keywords: Human Capital, Education, South Africa, Africa, Census, Educational attainment, Measuring education, Colonialism, Schooling development, Racial inequality.

JEL codes: A10, D69, F45, I20, I21, I24, J24, N00

ACKNOWLEDGEMENTS

I stand here today on the shoulders of many. This journey has not been easy and has tested me more often than not. However, with the right people in your corner, I have learnt that anything is possible. I, therefore, wish to express my heartfelt gratitude and appreciation to the following individuals.

Firstly, Prof. Ewout Frankema generously shared his data with me. Without him, this paper would never have been possible. The kindness of a stranger has allowed me to achieve one of my biggest goals, and I am extremely grateful.

Dr Christine Swanepoel and Ms Rochelle Beukes. My supervisor and co-supervisor made this journey not only doable but enjoyable. Their continuous patience, guidance, and dedication each step of the way is deeply appreciated. They have allowed me to develop and grow throughout the process, and it has been an honour to work under their supervision.

To my parents, Mr Geoffrey Joseph Henry Tocknell and Tersia Tocknell, I fail to find the exact words to express how extremely grateful I am to have your unwavering support throughout not only this journey but life. You have encouraged and supported me in every avenue of life, and for that, I will always be indebted to both of you. Thank you for your unconditional love. If I could choose once more, I would without hesitation choose you to be my parents again.

My siblings, firstly Geoffrey Joseph Henry Tocknell Jr., you have been such an inspiration to me. Thank you for being a voice of reason and never allowing me to dream small. You are the best big brother. My twin, Beniska Tocknell, you have been my best friend since birth and always remind me that no matter how many times I fall, I always have a hand to help me up. Thank you for always being a source of laughter.

I would furthermore like to give a sincere thanks to the University of the Western Cape, who allowed me this opportunity. Lastly and most importantly, I thank God Almighty, who has guided me and been my internal source of strength. This journey would not have been possible without You. For it is my faith that carries me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

1.1. Introduction

Trying to determine how historical events affected societies is a strong area of study among economic history researchers. For example, past historical events such as the 'scramble for Africa' and colonialism, where colonial powers rooted themselves in the African continent for economic dominance, have lasting effects, especially regarding the development outcomes within the colonised country.

Colonialism is defined as one country having direct domination over another by state power, controlling a foreign power (Ocheni and Nwankwo, 2012). Colonialism in Africa took place roughly between the 1800-1960s. Colonialism is also defined by Nwanosike and Onyije (2011) as a practice or policy by a foreign country used to acquire full or partial control over a specific country by exploiting its economy and having settlers occupy the land. This raises the question of whether such historical events could encourage or retard the economic performance/development of a colony. Austin (2010) states that colonialism is heterogeneous and can take on different forms in different regions or under different rulers.

Past historical events are crucial for understanding economies and answering crucial questions such as why economic inequalities persist, why certain countries experience economic growth or lag behind, and how societies and institutions shape economic performance. Studying economic history allows us to frame questions about complex social, economic, and political issues. In addition, it allows for the ability to investigate outcomes and patterns of past events, which in turn permits one to answer similar questions about current economic developments. Nunn (2009) considers the importance of historical events by analysing numerous studies[1] that explore the relationship between current economic development and history, concluding that history matters. Craft (2012) believes that directing questions and research towards a policy perspective is necessary to realise the total value that economic history has on economics.

Furthermore, adding that archival work allows for more real expertise and the ability to answer insuperable challenges encountered by nations. This point is illustrated by Craft (2012) using

[1] Studies include: La Porta et al (1997), Engerman and Sokoloff (2002), Acemoglu *et al* (2001, 2002), Banerjee and Iyer (2005), Dell *et al* (2008), Nunn (2009), Munshi and Wilson (2008), Feyrer and Ascerdote (2009).

famous episodes in history, such as the Marshal Plan, which was seen as effective postwar plan for European growth and similar plans are frequently demanded today. However, looking back in history and archival work, the Marshal Plan was more a structural adjustment program than just a donation of large amounts of unconditional aid. Another example used is the 1930 American Great Depression where it is believed that the 1929 Wall Street Crash was the main cause. However, economic historians disagree, suggesting "that financial crisis in the form of bank failures was the heart of the matter" (Crafts 2012:3). This highlights that well documented archival work allows economist to know a great deal about what has and what has not worked in the past and why.

Once more, studying history gives immense detail, which allows for a better understanding of why events occurred, how these events affect nations of an economic level, and how to respond effectively in the future. Hopkins (2009) also agrees that history matters for studying development in Africa and how economies and societies operated in the past. Delving into these types of research allows researchers to extrapolate into other contexts and make better development policies.

Africa has had a tumultuous and extensive road of colonisation, leaving deep-rooted wounds that persist in the 21st century. This is notably true for South Africa, which the World Bank report (2018) considers one of the most unequal. The extreme disparities can be partly due to colonialism's legacy and the implantation of various land dispossession regimes, racial segregation, and vastly unequal education. The long-term consequences of colonialism are countless and have been studied by a variety of researchers. For example, Nunn and Wantchekon (2011) study investigated the longstanding consequences of the slave trade, finding that it had a substantial adverse effect on economic development and led to a culture of mistrust in the countries colonized. Their study also states that those individuals with ancestors of slaves are more prone to disapprove of their local government leading to the deterioration of political and legal institutions. Michalopolos and Papaioannou (2016) builds on the literature by exploring the long-term effects of ethnic portioning resulting from the scramble of Africa. They do this by analysing whether "partitioned ethnicities differ systematically from non-split groups across several geographic- ecological traits" (Michalopols and Papaioannou, 2016:1803). Their findings show that political violence is dominant in 'partitioned homelands' who encounter deadly incidents over prolonged periods

of violence. In addition, observing that ethnic partitioning is also associated with increased violence against the civilian population.

Other researchers like Acemoglu *et al.* (2001) and Bolt and Bezemer (2009) explore the morality rates of Europe to evaluate the consequences of institutions on economic performance. Acemoglu *et al.* (2001) infer the variances in colonial experience are a "source of exogenous differences in institutions" and reducing expropriation risk does cause a noteworthy gain in income per capita. Bolt and Bezemer (2009: 34), however, take a "colonial human capital" approach to explain long-term growth, controlling for geography and legal origins. Their findings conclude that instrumented human capital better describes growth from a long-term perspective, showing greater stability over time than "instrumented measures for extractive institutions." Furthermore, finding that long-term growth is fostered by colonial education through two main channels. Firstly, colonial education affects present education levels (Bolt and Bezemer, 2009). Therefore, it is clear that the colonisation of Africa has left various effects on long-term growth and development. Education is at the forefront and will be the focus of this thesis.

Colonising powers realised that they could gain more control through mental means rather than through physical control. One way in which a country could achieve this dominance over another was through education and the education policy imposed by the colonial power. This includes the colonising nation implementing its own form of schooling within their colonies to strengthen their control. Altbach and Kelly (1984) state that colonial powers used schools and education to extend their foreign domination and increase the economic exploitation of their colony. The main economic goal is to maximise the economic benefit to the colonising power at the lowest possible price.

Education is crucial in any society and is universally accepted as the engine for growth. It is the foundation for higher living standards and a vital aspect in eradicating poverty in the long term. Education provides an individual with the knowledge and information needed for desirable changes in the way one thinks. Education's effect on economic development has also been debated for years, with literature in economic development concluding that a more educated society translates into a nation having higher economic growth rates and a strong influence on increasing economic development. Education is recognised as a key agent in facilitating advancements and encouraging technological innovation, which in turn generates a

significant increase income growth as labour and capital become more productive. The investment in education, therefore, fosters the human capital of a nation. Investing in education is fundamental for a country as its 'stock of skills' matters significantly for its growth and prosperity (Burgess, 2016). Human capital in colonial Africa increased not using implementing institutions but rather through the colonists bringing their 'human capital' and sharing it via schooling systems (Bolt and Bezemer, 2008). As stated above, education plays an intricate part in an economy and economic theories.

The study of education is essential for determining economic development processes, understanding human capital concepts, and establishing approaches for human development and investment returns of education. Studies by Schultz (1992) analyses education in the Solow's residuals framework, arguing that inequalities in development can be traced to a country's level of human capital. His study also concludes that education directly affects a nation's income growth via increased skills and knowledge. Becker (1964) and Miner (1974) take another approach, analysing human capital in increased opportunity for private gains. Nelson and Phelps (1966) also contribute to the human capital theory, agreeing that it is 'stocks of human capital' that drives growth, as it stimulates a country's capability to innovate and generate technological progress. However, a key disadvantage of the theory is that it overlooks the need to empower beings, particularly their participation in the development process. Sen, therefore, pioneers the participation of individuals in his approach to human development. Sen (1999) defines human development by the following core components, sustainability, equality, productivity, and multiculturalism. The capabilities approach, human capital and growth theory are at the forefront when linking education to economics and will be reviewed in more detail in Chapter 2.

1.2. Problem statement

During the colonial era in Africa, two dominant Colonising powers were present, the British and the French. Both practice vastly different approaches to educating their colonies (Benavot and Riddle, 1988; Lee and Schultz, 2012; Dupraz, 2015; Jedwab *et al*., 2018) The first aspect of this thesis is, therefore, to review the literature on colonial education systems and distinguish differences in schooling systems in the colonial period. From this literature, a gap was identified that is a primary objective of this study – how South Africa's colonial systems differed and compared to the rest of Africa's colonial experience. Additionally, while many

African countries are included in studies like Benavot and Riddle (1988), Bolt and Bezemer (2009), Frankema (2012), Schultz (1975), South Africa is often excluded.

South Africa is unique in its colonial history due to being colonised by two major colonial powers: the Dutch and later the British. In 1652 The Dutch East India Company established a permanent settlement under the command of Jan van Riebeeck who founded the Cape Colony. The initial purpose of this settlement was not for a full-fledge colony but merely to function as a refreshment station for vessels between the East and Europe. However, the shortage of goods quickly arose, and it was decided to build a colony (Boshoff and Fourie, 2017). This focus on supplying ships meant the Dutch paid little attention to public services like education. However, despite this, the vast amount of information that has survived from the Dutch period have made many economic history studies possible. These studies include studies on the wealth of the settlers (Fourie, 2013), living standards and wages (de Zwart, 2011; du Plessis and du Plessis, 2012), demography (Cilliers and Fourie, 2012), and the productivity of slaves (du Plessis, Jansen and von Fintel, 2015; Fourie and Green, 2015; Links, Fourie and Green, 2020).

It was after the Napoleonic wars in Europe that the Cape Colony became a British colony. The British were more concerned with public services and events. By 1806 the British seized the colony from the Dutch. Studies that have studied the British impact on the Cape Colony include the aspects of fiscal policy (Gwaindepi and Siebrits, 2020), public expenditure and social savings (Herranz-Loncan and Fourie, 2018), the emancipation of slaves in 1834 (Ekama and Ross, 2021; Ekama, Fourie, Heese and Martin, 2021), and national accounts (Magee, Greyling and Verhoef, 2016).

What has remained behind with four exceptions is education. While these four studies are fully reviewed in Chapter 2, these studies are Fourie, Ross and Viljoen (2014) that investigated the 1849 mission stations' census and the impact on literacy; Fourie and Swanepoel (2015) that compare the education rates from these missions stations to modern outcomes; Christopher (2015 and 2010) that studies the sources on educational outcomes and the census information used here as well. Therefore, it is also imperative to continue investigating the education system in South African history and determine how it compares to the rest of Africa. This could also shed light on the colonial legacies in education in South Africa.

1.3. Research question and objective

The general intention of this paper is to investigate the educational policies of colonial powers through the literature review and compare South Africa's educational outcomes, more specifically primary school enrolment, with those of the rest of Africa. Furthermore, given the inequality in educational outcomes (both today and then), I study the White and Coloured population.[2] The main research question therefore is:

- How did South Africa's colonial education outcomes differ from other African countries during the colonial period?

The main research objective is to:

- Determine the educational outcomes of South Africa in the early twentieth century and how it compared to other colonies in Africa.

1.4. Significance of the study

African economic history has gained renewed interest over the last decade. With that, there is growing research and literature on the effects of colonial education systems on the development of African economies. Many studies offer a focus on variation in institutions, human capital formation or gender roles and the effects from a long-term perspective (Ndille and Litt, 2018; Nwanosike and Onyije, 2011; Fourie *et al*., 2014; Haas and Frankema, 2018; Meier zu Selhausen, 2014; Nunn, 2009).

Meier zu Selhausen (2019) has most recently pioneered the use of data retrieved from the archives of African missionary churches, exploring the mission's role of mass educational expansion across colonies and between genders. Meier zu Selhausen (2014) also investigated the role of education by missionaries and the influences they had on socio-economic position's for women within the colonial household and economy by using Anglican marriage registers available in Uganda from the colonial era. Whereas, studies by Frankema (2012) used data

[2] I follow suit of historians by using the term Coloured for the population of non-European descent in South Africa. There are problems with primary sources and how individuals were classed by race and there it remains the simplest to use the term Coloured. This can include Black/African individuals but also modern Coloured individuals.

from British colonial blue books, focusing on British rule in sub-Saharan Africa by using a demand and supply framework to explore the origins of formal education.

This study would focus on the local case study of South Africa in the broader context of Africa. The study would identify the impact of the education systems that colonial authorities enforced in South Africa using data obtained from the early nineteenth-century census records. These records were chosen as the closest available South African sources to those of Frankema (2012). Frankema gracefully shared his data to allow South Africa to include the results with the rest of Africa. The data covers the impact of British education policies while controlling for specific explanatory variables. To remain as close as possible in comparison with Frankema, I use educational attainment and attendance. This will enable the comparison of South Africa to the rest of Africa – the primary aim of this study.

Such analysis into the colonial history of South Africa is crucial, not only adding to the understanding of the past but also enabling constructive cross-country comparisons with other former colonies.

1.5. Outline of the study

In pursuit of exploring educational policies in colonial Africa and establishing how South Africans education outcomes were different to other African countries in the early twentieth century, the thesis is segmented into five chapters. The first chapter introduces the study. Next, it provides the background and problem statement of the study and why it is essential to add to economic history studies with a focus on education. This includes the research question and objective. Finally, with the gap in the literature identified, it states why the study is significant.

This second chapter provides an in-depth literature review. It starts with the conceptual framework in order to bring a general understanding of the area of study. The literature follows the theoretical aspects of colonial educational outcomes like missionaries' and British colonial influence. Secondly, the chapter discusses key concepts and theories like the growth theory, human capital theory and rights theory. Finally, the chapter reviews the education system in South Africa until the early twentieth century, where this study fits in.

Chapter 3 focuses on the data and methodology of the study. It discusses data from the 1910 and 1921 census that was collected for this study. The methodology closely follows Frankema

(2012) to compare South Africa with the rest of Africa. This methodology is an OLS estimation of the impact of British rule on gross enrolment rates in various African countries. I add to this by adding both Coloured and White South Africans. I separate this given the differences in educational outcomes via. primary school enrolment rates and study if there are different impacts by race.

Chapter 4 presents the results. First, comprehensive insight is offered of the 1911 Population census of the Union of South Africa through descriptive analyses. The results show how South Africa continued to face inequalities and disparities between racial groups, with the White population far outperforming the Coloured population. Furthermore, South Africa was included in Frankema's data and regression analysis to determine the role of the White and Coloured population compared to other African countries. This was further investigated by comparing all the regression generated and visually presenting it in the form of a fitted graph.

The final chapter outlines the key findings, defines the critical contributions of the study, and lastly offers recommendations for forthcoming studies.

2. LITERATURE REVIEW

2.1. Introduction

The conceptual framework (Section 2.2) discusses the key concepts to provide a better understanding of the area of study and how the theoretical framework will be applied to the South African context. The end of this section also unpacks education in South Africa, where colonial education in the early twentieth century is discussed. The conceptual framework is followed by the theoretical framework (Section 2.3) where four main theories relating to the subject of the study is reviewed. These theories include growth theory, human capital theory, capability approach and lastly, the rights-based approach to education. Next, in Section 2.4, past empirical studies that have been conducted on the topic is reviewed. Lastly, Section 2.6 concludes the chapter.

2.2. Conceptual Framework

The conceptual framework focuses on providing a background on human capital, colonial education and the roles missionaries had in facilitating education expansion. The section also focuses on narrowing the views to education in Africa and in South Africa from colonial times till the early twentieth century. It concentrates on the colonial experience of these countries with education in history. Before this description, I discuss the concepts and how human capital and education are related to human development. The conceptual framework follows into the theoretical framework which offers a good guideline for measuring education and its outcomes on the economy.

2.2.1. Human capital and education

Human capital, often as measured through education, forms part of the broader notion of human development. Human development is a broad notion, which includes all areas of social-human life. It is defined by Baru (1998) as “a process of enlargement of the capacity of people’s choice” where knowledge becomes the most fundamental factor in creating human development.

Human development is a multidimensional concept that creates more freedom and opportunities for individuals by enhancing their capabilities. The measurement of human development is done through the Human Development Index (HDI). The HDI is a

measurement done through literacy rates, life expectancy, living standards, and education. Given the scope of the study, I focus only on education here.

Education plays a central part in human development as it builds the foundation for development and an increase in economic efficiency. This is done by rising the efficiency and value of labour; this helps lift the poor from poverty. Ozturk (2001) points out that without extensive investment in human capital no country has been able to achieve constant economic development. Additionally, stating that no economic development is feasible without good education systems. Therefore, a balanced education system stimulates not just productivity but also development that generates income per capita.

Human capital is characterized as the skills and knowledge a human being attains through education and training, which is seen as a form of capital, this capital being a product of measured investment which produces gains (Schultz, 1961). Lucas (1988) defines human capital as the knowledge an individual receives through education, with the two most important factors for developing human capital being education and learning by doing. Developing human capital via education leads to productivity and increased income, which in turn progresses the wellbeing of individuals and, on aggregate, an economy too (Nielsen and Axelsen, 2017).

Human capital and education are two intertwined terms that cannot necessarily be separated. The World Economic Forum describes human capital as "the stock of competencies, knowledge, skills, social and personal attributes, including creativity embodied in the ability to perform labour to produce economic value" (World Economic Forum, 2013). Education is relevant to human capital theory since it views education as the ability to help create skills and aids in acquiring knowledge. This education then functions as an investment in the productivity of the individual as an economic production factor. Economic historians generally see literacy as the most accurate indicator for human capital. Additionally, literacy is deemed as one of the main movers of what is typically defined as economic progress (Mankiw et al., 1992).

A nation's education system is seen as the most crucial element needed to produce human capital. Both Psacharopoulos (1994) and Odden and Clune (1998) researched the significance of education in achieving human capital. Their findings show that many nations have modified their systems to try and remove the gap between rich and poor households by increasing nation

budgets. Therefore, spending on education is vital to achieving the ideal human capital stock (Psacharopoulos, 1994). However, understanding education purely as human capital can be restrictive (Robeyns, 2005), as it seems to ignore the intrinsic importance of education. For that reason, it is essential to acknowledge that there is more to education than only human capital.

Education is the method through which accumulated knowledge, values and skills are spread by societies and nations to new generations of people. Whilst education is immensely beneficial. It should be noted that the transfer of knowledge typically through formal education systems are shaped by those who plan, deliver, and fund the content of the school programmes. This relates to the growth theory discussed in the first section of this chapter. The inputs of education are essential for the output. While the information is relatively easily obtainable for most countries from the 1960s onwards, the historical patterns are less clear before then. More recently, and as discussed below, research on the period before 1960 has increased.

Babalola (2003) presents three main arguments behind the rationality of investing in human capital:

1. The new generation should be educated on how prevailing knowledge can be used to progress new products, to establish innovative production techniques and social services.
2. Persons ought to be urged to develop completely new ideas, processes, approaches and products via creative methods.
3. New generations should be provided suitable segments of knowledge that preceding generations have previously accumulated.

Agreeing that it is the notion of human resources, not the material resources or its capital, that in the end determines the pace and character of the social and economic development. Human resources, therefore, accounts as the ideal basis of the wealth of a nation. Natural and capital resources are simply passive factors of production, whereas beings are the functioning agencies who exploit resources, accrue capital, construct social, political and economic organisations and subsequently brings forward national development.

Education is one of the most powerful explanatory factors influencing multiple economic phenomena. However, education measurement can be challenging given the vast differences

in education systems and uses (Connelly et al., 2016). Educational attainment is used most often but is merely a narrow snapshot of the possible measures that can be used to determine an individual's education experience (Smith, 1995). In history, this is also problematic, where sources often rely on literacy rates rather than attainment. This will be discussed in more detail below.

Educational attainment is expressed as the highest level of educational qualification successfully completed by an individual (Connelly *et al*., 2016). This is typically calculated by the number of years completed in an educational system used as an indicator of the level of competence of an individual. Building on the hypothesis that "the longer someone is exposed to education, the more skills and knowledge he or she can acquire, and the more he or she is socialised, directly or indirectly" (Braun and Müller, 1997).

Mean years of schooling is one method of measuring educational attainment. The measurement is commonly referred to as "the population older than 15 or 25 years". This is because a large proportion of the younger population is still often attending educational institutions and is therefore excluded. Another method used to measure educational attainment is by "population by the highest level of education." This focuses on the highest level of education achieved by a specific human being.

2.2.2. Missionaries and education in African history

There is an abundance of information on education from the colonial period in Africa. Anderson (1970) states that the idea of education was not brought to Africa by the Europeans as many African societies already had traditional forms of schooling long before their arrival. Missionaries were undoubtedly the first to establish European-style education in Africa, with mission societies often expanding into regions well before colonial power did. Missionaries continued to be pivotal in providing education even after colonies established rule. This was because of practices such as grouping students into teaching spaces for daily classes and emphasising the significance of reading and writing. Europeans thus had a considerable influence on formal schooling in Africa. The record-keeping of the Europeans on various aspects of African life has also enabled researchers to study this effect more easily retrospectively.

Europeans' first formal schooling attempts in Africa were by the Portuguese missionaries and dated back to the mid sixteenth century. Unfortunately, not many missionaries and schools are known, as almost none of their work remains (White, 1996). Therefore, the focus is on the British and French establishments, given their strong tradition of missionaries and the survival of source documents. Their formal education systems have a continuous history of around 150 years in Africa (Cowan, O'Connell and Scanlon, 1965). Britain favoured outsourcing their education institutions to private voluntary agencies such as missionaries, whereas France opted for public schools, which their colonial government-financed.

Christian missionary efforts facilitated Africa's unique historical mass conversions in the 18th and 19th centuries. There are two main reasons for missionaries' involvement in education. First, missionaries' (both Anglican-Protestant and Roman Catholic) primary purpose was to convert as many African souls as possible to Christianity (Fourie and Swanepoel, 2015). However, they believed that providing formal education would be the most successful way to attract new Christians (Meier zu Selhausen, 2019). A second reason is that many faiths believed that a basic education like the capability to read the Bible was essential for obtaining salvation (Fourie and Swanepoel, 2015). Even though missionary activities varied across different colonial powers, Woodberry (2004) notes that missionaries supplied over 90% of Western education in sub-Saharan Africa throughout the colonial period.

The British colonial administration focused on keeping costs low by embracing an open-door policy. Therefore, they outsourced the supply of formal education by welcoming missionaries from all denominations, which fostered competition. Nevertheless, some influence was kept by the British colonial using grants-in-aid to subsidise mission schools (Frankema, 2012). However, most of the finances and construction of mission schools was founded from African congregations, who contributed both their resources and labour (Summers, 2016). In 2014, the Phelps-Stokes report observed that financing via collections by local churches amounted to twice the "grand in aids" by colonial governments (Hanson 2010).

In contrast, the French chose schools funded by the colonial regime. It allowed the French government to keep a much tighter grip on the education system and its developments than the British. Hence, the French decided on public schools funded by taxes and only subsidising some Catholic missions. Furthermore, France emphasised the quality of education for a minor

fragment of the populace to subsequently train an administrative elite (Cogneau and Moradi, 2014). This contrasts with intending to convert as many Africans as possible.

Gallego and Woodberry (2010) note that religious liberty fostered more missionary activity within British colonies from an institutional perspective. Therefore, Protestant missionaries' higher interest in providing education combined with favourable institutional features provides a possible reason for the differences in educational outcomes among African countries. Additionally, they show that regions with a history of Protestant missionaries tend to have a greater level of schooling today than areas where Catholic missionaries settled. Bassey (1999) also expresses that competition among Protestant and Catholic missionaries often led to innovation in schooling. Similar results were presented by Kalinga (1985) for Malawi and Kitaev (1999) for regions of Uganda and Kenya. Likewise, Iannaccone (1998) suggests that market conditions affected missionary behaviour and was strongly influenced by competitive incentives.

Missionaries' location choice was highly unpredictable as they had limited knowledge of the continent (Woodberry and Gallego, 2010). However, a more current analysis by Jedwab et al. (2018) found missionaries favoured the best areas first, going to healthier, safer, and more developed locations. Due to the primary purpose of converting as many souls as possible, missionaries tended to go to more densely populated areas. Furthermore, Maxwell (2015) acknowledges the demand for teachings of Christianity to Africans initially developed nearby coastal European trading societies. Therefore, missions naturally settled near their location of entry along the coast, avoiding hostile African kingdoms and pre-colonial trade routes. However, Meier zu Selhausen (2019) notes that colonial pacification allowed missionaries to safely move into formerly hostile regions.[3] This allowed for the expansion of Christianity into Africa and was amplified with European colonial rule all through the 19th century.

By the end of the colonial era, missionary schools were substituted by government schools. Barro and Lee (2010) found in sub-Saharan Africa that the average schooling years increased from 1.2 to 5.3 between 1950 and 2010, indicating that even though schools by missionaries were responsible for the original increase in mass education, the majority of the progression in education was accomplished by modern Africa. However, colonial powers' investments in

[3] This excludes Muslim dominant regions.

missionary schools have proven to have had a long-lasting impact (Gallego and Woodberry, 2010; Baten and Fourie, 2015; Wantchekon et al., 2015). This would prompt the question if a specific type of missionary schooling system had a more positive effect than another.

2.2.3. British and French colonial education policy

British colonial rule took a more benign approach to mass education in its colonies, allowing Christian missionaries to develop mission schools freely. The British followed a more "indirect rule" approach in Africa, attempting to negotiate with traditional chiefs and keeping traditional structures and institutions intact. There was no centralized policy introduced within the colonies, leaving the education of the population mainly entrusted to the missionaries and their mission schools (Crowder, 1970).

The main purpose of schooling by the British regime was to supply the African population with only minimum levels of education and building the administrative competencies of traditional chiefs (Sutton, 1965; Lloyd *et al*., 2000). Subsequently, colonial officers opposed general education further than the primary level to avoid an educated indigenous elite. British missionaries' main focus was conversion and to provide basic reading abilities so that indigenous people could interpret the Bible (Gifford and Weiskel, 1978). Cost considerations likewise played a part in the British administration, therefore adopting an "open door" policy, allowing missionaries from all denominations to outsource the supply of formal education. However, most of the funding and construction of missionary schools originated from African congregations who made payments or contributed their labour and resources (Summers, 2016).

The distinct difference in the British approach can be linked to their attitudes toward missionaries and indirect rule principles. The British established large numbers of primary schools (not just in settlement colonies) teaching in the vernacular language, by the means of the education system's "grant-in-aid" to sponsor the Protestant missions. Research conducted by Benavot and Riddle (1988: 192) calculated and concluded "enrolment rates per school-age population for different years before 1940 and found on average considerably higher figures in British Africa compared to French West Africa."

Benavot and Riddle (1998), and Brown (2000), found that between 1870 and 1940, British colonies had higher primary school enrolment rates than the Spanish, Portuguese, and French territories. In accord, Bolt and Bezemer (2009) argue that the long-term growth disparities in

Africa can be explained by colonial education, where former British colonies grew faster than other former colonies due to their educational lead.

Frankema (2012) tested several hypotheses using multivariate regression models, including observations from at least 42 sub-Saharan countries between 1938-1950. The study found that primary education access was crucially dependent the activities of missionaries, which consequently relied upon the African native's cooperation to do more "than just passively accept the infiltration of foreign missionaries in their homeland." The regression results also showed that local conditions (such as rate of malaria, presence of Islam, the receptiveness of peasants to commercial agriculture or the ethnic composition of the population) explained the cross-colony variation in primary school to a much larger extent enrolment rate than differences among policies.

In contrast to the British, France imposed an assimilation policy with the primary purpose being to provide non-Western people with "cultural characteristics that would make them acceptable as citizens as their European fellow at home" (Sutton, 1965:62). An assimilation policy meant the infliction of direct, centralized French rule, which included centralized education policies. By the twentieth century, teaching in French and adopting French curriculum was an obligation for all institutions (Lloyd et al., 2000). Brown (2000) notes that the obligation to teach in French was seen as a key aspect for the delay in teaching development throughout the colonial era for French colonies and, therefore, hindered the development of primary education. The French also disregarded the enhancement of primary education as they were to a greater extant more concerned with teaching a limited indigenous elite to become professional administrators (Crowder, 1970).

While France did subsidise the operation of a few Catholic missions, a larger portion of African pupils attended government-run schools (public schools), which the colonial government-financed. France could thus keep a much firmer hold on developing its educational systems within their territories than that of Britain. Coherent with the French imperial philosophy of assimilation, colonial administration demanded that French be the vernacular of teaching and that schools' curriculum and teachers' qualifications be regulated (White, 1996). Separating the church from the federation necessitated that mission schools played a less important part in French territories (Congeau, 2003).

Under French rule, schools were run and controlled by the government, favouring separation between state and church, explaining their reluctance to missionary fieldwork. In addition, Frankema (2012) states that the French neglected primary education development at the sacrifice of tertiary education as their primary interest was to train a native elite to employ them as professional administrators.

2.2.4. Education in colonial South Africa and the early twentieth century

Europeans first settled in South Africa in 1652, when the Dutch East India Company (DEIC) founded a station in present-day Cape Town, governing the bulk of what became the British Cape Colony first in 1795 and then again in 1806. In 1793 Britain was at war with France for the duration of the French Revolution, which led to the British occupation of the Cape in 1795, known as the first British occupation. The British handed the Cape back to Holland in 1803, but occupied it once more in 1806, known as the second British occupation (Keltie, 1896).

During the Dutch rule, schooling consisted primarily of religious training for conversion to Christianity. During the Dutch's arrival, several native groups were discovered residing in the southern tip of Africa. The Xhosa groups were found to the east of the Cape, and the north was the Nguni (Omer-Cooper, 1994), groups known by the names San (bushman) hunters and the Khoikhoi (Hottentot) herders were also found living in the Cape Colony at the time. The first contact mainly came between the Dutch settlers and the Khoikhoi and San groups. The Dutch policy was not to enslave the local population, but due to labour shortages, imported slaves from the east coast of Africa, Madagascar, Sri Lanka and Southern India to be employed as manual workers on white farms (Armstrong and Worden 1989).

The DEIC was primarily interested in trade. Therefore, little was done regarding education in the colony for inhabitants. However, in 1658 a Dutch ship carrying 170 Portuguese slaves reached Cape Town, and a slave lodge was established to house these slaves. For this group, the first school was started, focusing on the slave's moral and intellectual wellbeing (Du Plessis, 1965). The lodge continued to educate generations of slave children, with some evidence that shows basic literacy and numeracy was taught (Fourie and Swanepoel, 2015). The second school was established in 1663 to provide the children of colonists with primary education (Molteno, 1984).

After the settlement of the Dutch in the Cape, various missionary societies also migrated to the Cape to establish their work. Soon missionaries discovered that to preach the word to natives, it was necessary first to teach, therefore introducing formal schooling as part of their evangelistic work. In 1676 the Cape Church Council suggested that it would be more beneficial if separate schools were established for slaves, and in 1685 the first separate school for Whites and Coloureds was started. Consequently, during 1652-1806 the missionary influence set the basis out of which evolved a system for education for Coloureds. It was the missionary societies that first recognised the need for education within the Bantu population. Bantu is the collective name for the indigenous people on the African continent. Frankema (2012) likewise shows in his study that school enrolment rates across Africa are almost entirely attributable to missionary activities.

The missionaries known as the Moravian Society were the first protestant church to plan foreign mission work. In 1737 the first Moravian missionary, known by George Schmidt, arrived in the Cape to set up a mission station in Genadendal. The London Missionary Society was established in 1795, with its primary mission being to uplift the oppressed people in foreign countries. The first group of missionaries from the London Missionary Society arriving in the Cape in 1799. The South African Missionary Society was also founded in 1799, being the first indigenous society. The South African Missionary Society in 1804 established its own building in the Cape known as the 'Groote Oefeningshuis' where general elementary education and religion was taught to the slaves. Their work successfully continued within the Cape Province, where other institutions were started at Graaf-Reinet, Rodezand, Bechuanaland, Wellington, and Stellenbosch.

The Wesleyan Missionary Society first arrived at Namaqualand in the Cape in 1816, founding the first mission station and school by the society. During 1843-1846 extensive work was done in the Cape for slaves who were emancipated by The Rhenish Missionary Society, with their mission school growing to 408 learners and was supported financially by the government. Many other societies and mission organisations continued to enter Southern Africa, establishing many other mission schools and stations along the way. The study by Fourie *et al*. (2012) mentioned above also revealed that the Wesleyan Society, the London Missionary Society, the Free Church of Scotland and the Rhenish Society were more effective at providing their subjects with the ability to read and write than the Moravian Society and the South African Missionary Society, which had the greatest number of occupants. In 1821 the mission station,

Lovedale, was set up in Tyume Valley to further promote primary education (Christie, 1992). Later in 1841, the Lovedale institution was established, accepting White, Coloured and Black students, and offering secondary and elementary schooling (Keltie, 1896).

The missionaries William Edwards and David Livingstone of the London Missionary Society set up missions in 1842 at Mabotse in the Transvaal (Thompson, 1990). Additionally, around the 1860's operations by the Berlin Missionary Society also started in the Transvaal among the Sotho, Pedi and Venda tribes. Whereas missionaries from the Swiss Missionary Society, Paul Berthoud, and Ernest Creux, began mission schools amongst the Valdezia and Tsongas groups in the Northeastern Transvaal (Iannaccone, 1998). After that, missionary educational activities were furthered by other missionary societies until 1910. Before 1910, missionary societies primarily established, administrated, supervised, and controlled Black mission schools in four separate regions of South Africa: Orange Free State, Cape Province, Transvaal and Natal. These regions existed and functioned independently, each with its own government and legislature (Welsh, 1998).

Despite attempts during the Dutch rule to educate Black people, it was not until the beginning of the 19th century that various mission societies in South Africa made concerted efforts to bring education to Black people. However, Horrell et al. (1964) highlight that it was the devoted work by early missionaries who served in isolated rural regions that started to equip Black groups to play a valuable role alongside members of other races. In accord, Fourie et al. (2014) noted it was because of the missionary stations, that the first generation of South African black and coloured literates obtained their skills, which is seen among the Batswana, the amaXhosa, the AmaZulu, the Basotho and many other clusters in the northern provinces of South Africa.

In 1839, James Rose-Inners was selected as the first Superintendent General of Education and played a pivotal in the history of education in the Cape. His appointment led to mission establishments coming under the control of the Education department, however, with restricted fiscal assistance. For that reason, the educating of Black communities continued by missionaries for many years in the rural parts of the Cape with barely any financial assistance from the governing authorities. Schools that received extensive monetary support were schools

educating White pupils, Coloured pupils[4] and emancipated slaves (Behr, 1984a). Only a few black schools in the urban areas of the Cape were catered for by the Government, where the majority of the students were coming from Coloured communities. Trends of education segregation among races have been evident since colonists arrived in the Cape colony (Molteno, 1984). James also introduced a new three-tier school system in 1839, which was made up of three types of schools. The first-class schools offered both elementary and secondary schooling, while in smaller towns, second-class schools were established purely providing primary schooling. Third-class farm and mission schools were instituted in rural areas, teaching basic literacy and arithmetic (Pretorius, 2019). The duties of the Superintendent are outlined by Malherbe (1925). The general Inspector was expected to "visit every public school one a year, to examine the ordinary routine of daily instruction, the arrangement of subjects, classification of pupils, and institute a strict inquiry into the state and progress of the schools" (Malherbe, 1925:100). He was also a general Register, which meant he had to account for the monthly returns of each school. Additionally, he was the Representative of Education for the Government and in charge of making the curriculum.

However, 1854 was a turning point for Black education when Sir George Grey was selected as governor of the Cape. Sir George viewed education as an essential factor in suppressing non-White individuals and urged the British government to subsidise mission institutions. Education was used to maintain peace and stability between racial groups by training the Black adolescence to act as evangelists, translators, and schoolmasters among their people. Aronowitz and Giroux (1987) emphasise that mission schools were created for colonists to preach industrial labour to the indigenous people of South Africa. Students were not trained or even encouraged to be analytical thinkers but rather to remain committed and honest servants to their employers. In agreement was Ramagaga (1988), who viewed mission schools as partially promoting native education so that they could not compete with Europeans and merely play a secondary role in the social order.

Superintendent Sir Langham Dale in 1863 also advocated for a "peaceful subjugation" policy advising the British administration that the spread of civilisation by access to schools and encouraging industrial habits amongst black communities was crucial to social progress and

[4] Colored and Black people were classified as "Colored" until 1907. Afterwards, until 1910, Coloreds were grouped with Whites, whereafter they received separate education from White and Black people (Behr, 1984a). As mentioned before, I follow suit and just refer to Coloured in this study.

political security within the colony. This encouraged schooling among Black people to uphold stability and peace in border districts (Pell, 1938). During the 1860's education, however, was still divided by race and economic lines under British rule. Subsequently, in 1865, the Education Act of 1865 was established, changing the funding model from a grant-in-aid system to a pound-for-pound system (Fourie and Swanepoel, 2015). In addition, schools were categorised into A, B, C and D schools. Missionary schools belonged to category B, which generally consisted of schools that were deemed incapable of sustaining themselves. In addition, the Education Act No.13 was passed by the Cape Parliament. This formalised the system of state subsidies for private schools, with state funding being separated into three types: mission, public and native funding. The act solidified the £ for £ rule, which continued to be the main source of assistance for all 'undenominational' Public schools throughout the succeeding half-a-century (Malherbe, 1925). In 1887 additional efforts were made to bring education to isolated areas with the introduction of the Circuit Teachers. Malherbe (1925) also states the Dutch Reformed Church as a powerful agency in bringing the success of the grant-in-aid systems.

The segregation in schools among Black and Whites became deep-rooted after 1903 when the first "Education Ordinance of 1903" was realised. The Education Act of 1907 was later passed, encouraging the former Transvaal Government to establish aid and maintain institutions that belonged to people of colour. Despite this, Section 29 of the Act banned Black citizens from having access to schools built for White individuals (Welsh, 1998). It was observed by Pell (1938) that it was not until the establishment of the Union of South Africa in 1910 that there was hardly any forms of schools for Black communities in most regions.

In 1910 the Boer generals in the Orange Free State, Natal, and Transvaal, surrendered the Republics to the British Empire. This formed a new Union from the previous four provinces: Cape, Natal, Transvaal, and Orange Free State. Louis Botha became the first Prime Minister of the Union, but it was not a democratic system. The South Africa Act of 1910 stated that the South African parliament would be an all-White institution. Hence South Africa became a self-governing state within the British Empire. In 1910 the Union was characterised by a series of legislative Acts imposing segregation policies, restricting and removing Black people's rights in almost every possible sphere. This restriction included education.

Administration of education for the Orange Free State, Natal, Transvaal, and the Cape fell under the heads of Provincial Education Departments. All four provinces had separated education departments for Black education, each with its own inspectors (Seroto, 1999). With the unification came the South Africa Act of 1909, which entrusted primary and secondary education to the Provincial Authorities and was no longer under the management of the central government. The Education Ordinance of 1921 also introduced private schools, the law explicitly providing different schools for 'European' and 'non-European' learners, and as a result making school attendance obligatory for Europeans but not for non-Europeans.

With the Union established in 1910, education (excluding tertiary education) came under the Provincial Councils control for five years or up until parliament stated otherwise. During the Union of South Africa, Black education was appalling (Horrell, 1968). The Welsh Commission's Report (1936) revealed that Black individuals in predominantly rural regions were exposed to a fixed pattern of education that disadvantaged and limited Black societies' altogether. The education system was intent on providing elementary levels of reading and writing. Education for Black communities during the Union of South Africa suffered severe deficiencies. In a study by Wolheim (1943:39), it was stated that "native education has been in an appalling condition. Buildings in most cases consist of tin shanties or wattle and daub huts into which are crammed two or three times the number of pupils which the room should hold. The equipment is correspondingly pitiful, and teachers are expected to educate children without adequate maps, pictures, books, desks, or blackboard." This highlights the state of black education after the creation of the union between the four previous colonies.

Shingler (1973) states that the Union Government reinforced a structure of domination and differentiation with various educational policies. Education in rural areas, mainly under missionaries, depreciated considerably because of these policies by the state and influenced education for Black people. In 1948, Dr D.F. Malan passed laws based on colour, implementing official policies for separate development (also known as apartheid) and racial segregation. A series of segregation legislative Acts were immediately implemented by the National Party Government, for example the Bantu Education Act of 1953, the Authorities Act of 1951 and the Promotion of Bantu Self-Government Act of 1959.

Behr (1984b) found that education for Black people was inadequate in comparison to White education. This supports the Welsh Commission who in 1935 was appointed to study Black

education in South Africa. The minister of education appointed the Commission. It also found that 70% of children who were of school age in Black communities did not attend school, and while many wanted to, they could not because of limited resources. Fedderke et al. (2000) used time-series analysis to study South Africa's schooling systems from 1910-1993 and found that South Africa had a modernisation trajectory that was distorted, partial and fundamentally dysfunctional. This is because, even though a large number of pupils were drawn into the schooling system, outcomes were not maintained. The study also indicated that all inputs into the educational process were strongly differentiated by race and that race (rather than class) was the primary determinant of educational opportunities before 1910.

The first census for the Union of South African is studied by Christopher (2010), who regards the census of 1911 as an under-utilised landmark in South Africa's history. The Union of South Africa was established in May 1910 as an integral part of the British Empire. The imperial government instructed the newly formed government to conduct a census in 1911. Christopher (2010) summaries the 1911 census concluding that it can be claimed to be of Domesday status. This is due to its comprehensive coverage and scope; the census of 1911 was the first to include the whole country with a standard questionnaire.

Christopher's (2015) study examines educational attainment using the South Africa census of 1865-2011. He notes that educational attainment has been recorded widely over this period, at first quantifying literacy and later the completed level of education. These indicators reveal the profound long-standing inequalities faced by societies in South Africa. In his findings, he also notes that most colonial administrations' census records have been destroyed, with only a few still available. In addition, uncovering that only the enumerators' summary volumes have survived for the Union, and therefore, no sets of colonial-era censuses are available. In 1996, he states that there was still a stark contrast between population groups as 40% of Africans over 15 was still being considered functionally illiterate, while Whites only showed a 1.9%. However, by the 2011 census, illiteracy rates for Africans have almost halved to around 22%. He concludes that there is a substantial amount of statistical data to support historians in their research, especially regarding assessing the outcomes of educational systems and policies. It should also be noted that 1926, 1931, and 1941 censuses of South Africa only enumerated the White populace, and as a result, no questions were asked regarding educational attainment. The 1936 census did include the entire population but did not include any education data.

2.3. Theoretical Framework

Most economists agree on the abundant benefits of human capital towards growth and development. There are four main theories of human capital and education in economics. This first section reviews these theories. The first is a human capital theory (Theodore Schultz, 1961; Gary Becker, 1964; and Jacob Mincer, 1974), growth theory pioneered by Solow (1957), the capabilities approach (Sen, 1980) and the rights approach. However, the emphasis will be placed on the human capital theory since this is the theory to which the data, methodology and results in the following chapters will contribute to.

2.3.1. Human capital theory

The theory of human capital was first suggested by economist Adam Smith in his work *The Wealth of Nations* (1776) and was later popularised by Theodore Schultz (1961), Gary Becker (1962), and Jacob Miner (1974). It became known as the Becker-Schultz-Mincer model, which views human capital as an array of competences that increase workers productivity. The human capital of a state is considered amongst the most critical factors affecting the economic growth and development of a country, and therefore, education is perceived as an essential component to improving the quality of human capital. Furthermore, as a private investment choice, to invest in education allows individuals with more years of schooling to increase their lifetime earnings, reduce their time in the unemployment market, and a faster transition to career prospects (Maringe, 2015). Riddell (2007) states that the root of this theory comes from investing in human resources, which leads to improved productivity.

Human capital theory displays how education contributes to increasing workers productivity and efficiency by increasing their cognitive skills (Ali and Alam, 2016). The theory is built on the supposition that formal education is very much contributory to progressing the productive capacity of a populace. Becker (1962) and Rosen (1983) reason that every individual has a set of skills and abilities that can be improved or accumulated through education and training. Human capital theorists believe that the greater the provision of schooling in a society, the greater the increase of a nation's productivity and economic growth. Nelson and Phelps (1966) view the process of education as an act of investment in people, and that educated individua's are bearers of human capital. Economists also recognize human capital as an essential input into economic models. The Becker model, as mentioned above, shows that the production function is directly influenced by human capital. More explicitly, a worker's productivity in all tasks increases through human capital gains. Even though in this view, human capital may be

complex in the production process, it can be thought of as a "stock of knowledge" and being directly part of the production function.

On the other hand, the Schultz and Nelson-Phelps view mostly perceives human capital as the ability to adapt. Additionally, this approach views human capital as helpful in dealing with 'disequilibrium' situations, or more commonly, in which there is changing environments and workers have to adapt. Thus, despite some differences, the views are pretty similar regarding human capital as valuable in the market.

Moreover, human capital acts as an essential role in poverty reduction and economic growth. From a macroeconomic perspective, the accumulation of human capital enhances labour productivity, rises returns to capital, facilitates technological advancements, and leads to more sustainable growth which subsequently aids poverty reduction. From a macroeconomic level, human capital is a key component in an economy's production function. From the perspective of microeconomics, an individual's probability of being employed in the labour market increases due to education and as a result boosts the individuals earning capacity.

Since human capital accumulation can be an imperative part in the growth and development of an economy, it justifies an analysis of human capital theory. As mentioned, human capital is understood to be knowledge, a form of capital (Schultz, 1961) and is a considerable product of deliberate investment. Both endogenous growth theory and the Augmented Solow model offer a role for human capital in the growth process. Human capital can be measured through education, usually collected through the number of years an individual attended school.

Psacharopoulos (1994) did a cost-benefit analysis of education in thirty-two countries showing that not only is education profitable, but in many instances, especially in developing countries, the rate of return to education is generally higher than the rate of return to physical capital. He further shows that primary education generally yields a greater rate of return than the return on secondary or higher education. Additionally, Trostel, Walker and Woolley (2002) did a study using comparable cross-sectional data from twenty-eight countries to estimate the economic returns of schooling from 1985-1995. Their study complements Psacharopoulos' (1994) findings, suggesting that a universal schooling average rate of return is just under 6% for women and 5% for men, supported by OLS estimates. Therefore, deeming education as an investment as it provides individuals with the skills and knowledge to improve their

employability and productive capabilities, which leads to greater earnings in the future. Schultz (1961) and Becker (1962) also applied human capital to the economics of education through the notion that capital is mainly formed through investments in education.

Much of the initial research conducted on human capital theory explores the link between earnings and educational experience with longitudinal studies drawing comparisons amongst high school and university graduates. A study by Schultz (1961) revealed that college graduates, on average, earn more than high school graduates, therefore arguing that the cost of education can be regarded as an investment in human capital which offers later returns in the form of moderately higher earnings. Studies confirms that monetary returns for resources and time devoted to training and education can be understood to be a method of investment, paying dividends later by means of higher income. Education, therefore, no longer being regarded as "consumption" but instead as an investment.

A second fundamental feature in the initial human capital theory was introducing a qualitative aspect to the workforce. Classical economics is inclined to interpret the workforce purely in quantifiable terms: the number of workers. Education and training were perceived to be the most effective way to enhance the quality of a workforce and therefore yielding broader economic returns than just individual earning power. Schultz (1961) suggests that Germany and Japan's quick recovery after World War II may perhaps be supported by their high levels of pre-existing human capital. Developing human capital is thus seen as a valuable way to grow, recover and survive after economic setbacks. It is also argued by Becker (1992) that, beyond the Eastern Block, human capital investment by means of educational opportunities was a pivotal element in allowing these countries to experience quicker economic growth from 1960. Thus, it is maintained that the theory, in its appropriated form, can account for economic growth.

The main observation on colonial Africa's growth from a human capital angle is not that colonists bought with them "institutional fundamentals", but rather that they bought themselves and their human capital. As a result, the means to rapidly increase human capital and education through their systems of education (Bolt and Bezemer, 2008). As accounted for by Acemoglu *et al*. (2001), there is a linkage with the density of settlement by colonisers. However, it does not proceed via extractive establishments. The reason being that they bought far less of their human capital to areas where hardly any settlers went to live. Hence, the notion that the initial

colonisers' endowment and its proliferation did affect economic development in the long-term. Krueger and Lindahl (2001), who reviewed literature on education-growth, also links, concluding that "the initial level of education is positively correlated with economic growth." Early literature reasoned that education could broaden a person's outlook, enabling one to "understand the need for norms of tolerance, restraints from endearing to extremist doctrines and increasing one's capacity to make rational electoral choices" (Lipset, 1960). Glaeser *et al*. (2004) discovered in their research a robust effect of initial education on institutional changes, supporting the link. Lipset (1960) concurs that highly educated populations are almost always stable democracies and less educated populations usually are not.

Hence, the human capital theory emphasises an individual's education as a fundamental channel by which material advantage is accumulated and an economy progresses. Consequently, education is promoted by the theory as a pivotal instrument to boost a country's economic growth.

2.3.2. Growth theory

Robert Solow first pioneered growth theory in the 1950s. His work led the way for the formulation of growth accounting as well as the discovery of the 'residual'. The residual describes the proportion of economic growth which researchers cannot explicate by the increase of physical productive factors like several workers, hours or weeks worked, and capital stock. As a result, it revealed that the accumulation of physical capital did not actually account for much of the growth and that something else did (Solow, 1957). Much research has been generated to understand what could explain the Solow residual, including ideas of human capital and education (Romer, 1986; Barro, 1991; Barro and Sala-i-Martin, 1995; Jones and Romer, 2009).

As claimed by modern growth theory, the accumulation of human capital is a crucial contributor to economic growth. Many researchers have explored educational attainment and whether it substantially contributes to overall output in an economy. Mankiw, Weil and Romer (1992) presented an expanded interpretation of the Solow growth model, namely the augmented Solow model. They augment the initial model to include human capital as a factor in the production function. Romer (1990) and Lucas (1988) introduced the endogenous growth model, another extension of the growth model. The theory states that internal factors such as capital investment, an expanding workforce and policy decisions are responsible for increased

economic growth within a country. Subsequently, human capital is suggested to be an essential part in the growth process by both the Solow model and endogenous growth theory, even though both theories are built on different conceptual arguments.

Odit *et al*. (2010) investigated Mauritius's economic growth and the effect that investments in education had through the Cobb-Douglas production function, they treated human capital as an impartial production factor in the augmented growth model. Their study revealed that human capital acts as an engine for improved output levels and therefore plays an imperative part in economic growth. This suggests that education is productivity-enhancing and not solely used by individuals as a tool to indicate their ability level.

In addition, Mankiw *et al.* (1992) and Barro (1991) considered the linkage among economic growth and education, examining disparities in school enrolment rates, by pursuing a single cross-section of the less-developed countries and the industrialised. Both studies concluded that the rate of growth of real GDP was positively impacted by schooling. Finally, Barro and Sala-i-Martin (1995) examined the effect of expenditure in education, also discovering a great positive impact. They used instrumental variable techniques to control for simultaneous causation, suggesting a twenty per cent annual return on public education.

Benhabibi and Spiegel (1994) compared models that treated human capital as intermediate inputs into acquiring knowledge and skills against models treating human capital as an absolute input. The former suggests a connection between average stock of human capital and output growth, whereas the latter infers a connection amongst output growth and educational growth. Their results favour the former model, revealing that a workforce that is more educated can more effortlessly identify, implement, and adapt to new notions.

Underlying both theories is the notion of human capital and that without knowledge embodied in individuals, there cannot be technological change. Nelson and Phelps (1966) found that the education rate of return is higher as an economy becomes more technologically progressive. They further emphasise that human capital is an imperative key in adopting and implementing new technologies. Schultz (1975) later argues that labourers who have more human capital can cope with economic structure changes and implement new technologies. This study also provided sufficient evidence to support his hypothesis. He concludes that "the ability to deal successfully with economic disequilibria is enhanced by education and that this ability is one

of the major benefits of education accruing to people privately in a modernising economy" (Schultz, 1975: 62).

Education continues to be regarded as a fundamental determining factor of economic growth. This is because technology acts as a pivital role in economic growth, and education is a necessity for the stimulus of technology. Moreover, there is a compelling correlation between technological innovation and an educated population. This links to terms like 'investments in humans' because workers require skilled education to utilise new technologies, which increases their total productivity and stimulates growth in the economy. Therefore, human capital accumulation fosters economic growth through on-the- job training and education, improving labour productivity, prompting technological adaption and innovation. Barro and Lee (2010) used comparable statistics to approximate the current stock of human capital, focusing on populations aged 15 years and over, covering 146 countries during 1950-2010. The study estimated that a one-year increase in average years of schooling leads to an increase in capital GDP from 1.7% to 12.1% (depending on the specification and other factors of the economy). Likewise, Cohen and Soto (2007) calculated a 12.3% to 22.1% returns to years of schooling.

Human capital has as a result been deemed one of the most distinctive features in the economic system, with numerous empirical works proving educations positive impact on productivity. The World Economic Forum (2016) proposes that there are three main channels through which education affects a country's productivity—firstly, having the capability to increase workforce output more rapidly. Secondly, secondary and higher education facilitates knowledge transfer of new technologies and information (Barro and Lee, 2010). Lastly, having the capability to increase creativity and boost a nations ability to generate new knowledge and technologies (Grant, 2017). IIASA (2008) indicated that improved education also leads to an increase in individual's income and is a vital precondition for economic growth in the long run. A study by UNESCO (2012) indicated that if 75% of 15-year-olds in the world's forty-six poorest countries were able to attain the lowest OECD benchmark for mathematics, economic growth may possibly progress by 2.1% from their baseline, and roughly 104 million individuals could be raised out of abject poverty (Grant, 2017).

It should be noted that investment in secondary education delivers a much greater boost for economic development than primary education does alone. For that reason, primary education should be complemented by having the majority of a country's population completing

secondary education. In accordance is the Sustainable Development Goals, who have set targets which include that "by 2030 all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes." This reiterates the awareness and importance of secondary education. However, in the same breath, it is important to echo the fact that completing primary and secondary education is not the only component. The quality of teaching in schools is vitally important as well. A study by Hanushek and Woessmann (2012) shows that the quality of schooling, not merely the years of schooling, has a noteworthy association with economic growth. A study by Easterlin (1981) also revealed that economic growth disparities between countries are due to the differences in technological progress, which is consequently underpinned by a nation's educational process. It is proposed that the more exposure a country's inhabitants have to formal schooling, the easier it is to grasp new technological knowledge. However, Easterlin (1981) proposes that primary education has the greatest effect on sustained economic growth, and therefore, primary education needs priority before secondary and tertiary education follows.

2.3.3. Capability approach to education

The research at hand teaches us that it is very valuable to look at the deeper structures of a society. The insights we gain can be of great help for introducing equity in education and working towards inclusion and inclusive education. The capabilities approach is therefore considered, as looking back in history can give better understanding to why certain population groups face greater obstacles and why education is important for policy decisions. It is also important to consider as it gives an understanding of why it is so imperative to making sound economic policies today. The capability approach as concerns education is larger in scope than the human capital approach which narrows down the contribution of education to a limited range of indirect livelihood skills mainly related to production and income generation. However, the capability approach can be used to assess human development and is also recognized for its usefulness in analysing interpersonal inequalities, for example within communities and households (Robeyns, 2006). Reflecting back on colonial times and education in history can provide some insight to why certain population groups are excluded from the benefits education brings.

In the most general description, the capability approach is seen as a multi-purpose and flexible framework instead of a precise theory of freedom and well-being. Capabilities are viewed as the numerous 'functioning' that a person can attain, where 'functioning' is the real opportunity

to achieve these capability's (Robeyns, 2006). The capability approach is considered a broad normative framework for human welfare to evaluate and assess an individual's well-being and social arrangements. This approach has two main claims. Firstly, the freedom to attain well-being is of crucial moral importance, and secondly, a person's well-being should be understood in terms of their capabilities and functioning. The methodology is commonly used in fields such as developmental thinking and welfare economics. It is used to appraise several features of a person's well-being, such as poverty and inequality—additionally, this method aids in developing and designing policies by governments.

Amartya Sen (1985) first introduced the concept of capability in his paper entitled "Equality of What". Sens's capability approach could be regarded as a moral framework, as it suggests that social arrangement must be evaluated primarily according to the degree of freedom individuals have to achieve or promote the functioning's they value. The concept of capability was formulated as an alternative to utilitarian or preference-based models of social distribution. He argued that conventional economic models and evaluative accounts overlook the notion of activities a person can undertake ('doings') and the kind of person one can be ('being'). Calling this concept 'capabilities.' Therefore, capabilities are regarded as the 'real freedoms' individuals have to reach their potential beings and doings.

Moreover, Sen perceives education as being part of a shortlist of central functioning to well-being. Using this approach, justice is viewed as the extent of freedom an individual has to choose functioning's they deem as valuable to their potential functioning's (Dalkilic and Vadeboncoeur, 2016). On the other hand, Nussbaum (2011) takes a more qualified approach, viewing education as crucial in developing internal capabilities and fertile functioning[5]. Developing internal capabilities allows an individual to increase employment and provides them with the capacity to partake in social and political life within their communities (Nussbaum, 2011). Hence, the approaches core focus is on what an individual can do (i.e., capable of).

The capability approach shifts the focus from means (the access to public goods and the resources available) to ends (what one can be and do with these goods and resources)—implying that resources and goods cannot ensure that a person will be able to convert them into

[5] Fertile functioning's being seen as functioning's that may help in the development of other functioning's, a concept introduced by Wolf and De-Shalit (2007)

actual beings and doings (Robeyns and Byskov, 2020). Consequently, the core objective of this approach is to expand individuals' capabilities, especially the capability of education. Drèze and Sen (2002) state that being well-educated is vitally important in expanding other capabilities. Thus, a central feature of this notion is that it pursues to "equalize a person's capability set, or one's range of opportunities" (Terzi, 2008).

According to Sen (1999), both the capabilities approach and human capital theory "place humanity at the centre of attention." However, there are two main disparities that distinguishes them. Firstly, although the theory of human capital highlights 'human agency' aimed towards economic productivity, the capabilities approach concentrates on a person's freedom to utilise their agency to develop their capabilities, which sequentially leads to developing a more significant agency (Buzzelli, 2015). The second disparity comes from how each measure and merits education. It is argued by Sen (1999) that while he accepts that improving human qualities is important for increasing economic growth, it does not answer "why economic growth is sought in the first place." Therefore, seeing the capabilities approach, regarding human development, as a comprehensive point of view that is "additional and inclusive, rather than, an alternative to the human capital perspective."

The capability approach has likewise remained instrumental in the development of educational justice and the right to education. The capability approach is viewed by Hinchliffe and Terzi (2009) as the framework for analysing problems concerning social arrangements and equity. Walker and Unterhalter (2007) have been pivotal in the conceptualization of social justice within education. Moreover, Terzi (2014) reasons that the degree of justice within social and institutional systems ought to be valued based on their acknowledgement of individual differences as well as the extent that they offer each person with the chance to profit from resources given their individual differences. Thus, education is vital for human well-being and is a fundamental contributor. Hence, Hinchcliffe and Teriz (2009) also argue that a just education must offer children the capabilities to "stand as equals in society" and develop to their full potential.

From a capability approach point of view, it can also be argued that education which ends at the level of merely delivering basic reading and writing competences is inadequate in improving lasting development and poverty reduction (Bakhshi *et al.*, 2004). Thus, to expand people's freedom to live life as they value and enrich their real choices, education should be

considered to be more than just the foundation of additional capabilities. For that reason, education should also consider the interrelatedness of learning, teaching and human development. The capability approach offers the theoretical bases of the human development paradigm (Robeyns, 2005). It is important to note that the approach cannot necessarily explain inequality or poverty, rather aids as a instrument and framework within which to evaluate and conceptualize such phenomena.

The capabilities approach to human well-being emphasises the significance of heterogeneity, multi-dimensional welfare, and freedom of choice. Recent theorists have started to coin the word 'capabilitarianism' (Nielsen and Axelsen, 2017; Robeyns, 2016). These studies argue that Nussbaum's characterisation of the capability approach is flawed, provoking discussion around defining and understanding it. Alkire (2002) states that the approach can be expanded as an alternative tool, which can substitute for standard social cost-benefit analysis. Additionally, it can appraise and design policies and social institutions, from government development policies to welfare-state design.

Robeyns (2017) most recently provided insight on the importance of the capability approach questing how prosperity and social progress are measured, which is usually through a nation's Gross National Product (GNP) or Gross Domestic Product (GDP). However, literature is emerging and revealing that GDP per capita is often a restricted and imperfect measure of economic and social progression (Coyle, 2015; Stiglitz, Sen, Fitoussi, 2010; Fleurbaey, 2009). Sen (1985) illustrated this by showing that taking a country's ranking based on GNP per capita can often be different than their ranking based on certain functioning's.

A recent study by Dreze and Sen (2013) utilised the capabilities approach to analyse and develop India's development policies. This was done by comparing fifteen other poor countries[6] with India in terms of development indicators. The results showed that of the sixteen countries, India ranked the highest in respect to GDP per capita however positioned exceptionally low for various functionings, including infant mortality, life expectancy at birth, literacy, and schooling. However, other countries could achieve better outcomes in terms of

[6] Those other countries are Afghanistan, Bangladesh, Burma, Cambodia, Haiti, Kyrgyzstan, Laos, Moldova, Nepal, Pakistan, Papua New Guinea, Tajikistan, Uzbekistan, Vietnam and Yemen.

this functioning, even though having lower financial means. Concluding, that merely focusing on income-based metrics provides incomplete data on the lives individuals can live. Therefore, utilising the capability approach when reasoning for social progress and prosperity allows for numerous advantages. Some of these include hindering mistakes made by policymakers when making assumptions about human begins, including what is of value in communities' lives, how societies live and interact together, and what type of governmental support is desired for people to flourish.

Therefore, the capability approach allows for a unique angle than substitute approaches by emphasising the overall satisfaction of individuals lives (Robeyns, 2017). In addition, it makes a fundamental contribution to human development research through work such as 'Human Development Reports'. Alkire and Foster (2011) have also made economic contributions with their developments of poverty estimations based on the capability approach, namely, the Multidimensional Poverty Index. Development studies have also accepted the capabilities approach as a major framework; many other fields have also embraced the approach, including health economics, environmental policy studies, sustainability analysis, educational and disability studies.

Hence, education that focuses on the needs of current generations whilst developing their skills can be considered an approach that is sustainable and in fulfilment with the concept of sustainable development (Hoffmann, 2005). Then again, perhaps the capability approach's most important contribution is that it prompts ourselves to ask unconventional questions and directs our attention to other dimensions when gathering data and making evaluations.

2.3.4. Rights approach to education

The Rights-based approach to education proposes that each human being is entitled to adequate education, even if one cannot be certain that this education will pay off in human capital terms. This approach prioritises the intrinsic importance of education regardless of if it provides any instrumental significance or not. The rights-based concept of education is mainly supported by organisations of the United Nations (UN) involved with education and children, such as UNICEF and UNESCO. This is also one of the 17 sustainability goals proposed by the UN. It specifically aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UN, 2020).

The rights-based approach views humans as the supreme ends of political and moral concerns, whereas human capital views humans as input agents for economic growth and production. Therefore, people who might not gain as much productivity from education are still seen as equally entitled to education as those individuals that expect a higher economic return to education. While progress has been made, the UN claims this progress is too slow. They state that by 2030, 200 million children will still not be attending school. The Covid-19 pandemic has exacerbated this problem, especially in low-income and developing countries (UN, 2020).

A rights-based approach to education incorporates a trio of interlinking dimensions and maintains that the human rights linked to education cannot be achieved without the following three dimensions being addressed, which were outlined by UNICEF (2007):

- The right to education access: Education must be inclusive and accessible to all children to achieve this goal. Also, highlighting the right of every child to an education on the foundation of fairness of opportunity exclusive of any prejudice.

- The right to quality education: To accomplish this objective, education needs to be relevant, child-centered, and incorporate a comprehensive curriculum while being properly resourced and monitored. This goal embodies that every child should have quality access to education to fulfil their full potential and realise opportunities to develop life skills and employment.

- The right to a learning environment that is respectful: To realise this, education needs to be offered in such a way that is consistent with human rights, together with meaningful opportunities for participation, equal respect for each pupil, freedom from any type of violence, and respect for all religions and cultures.

The right to education commands an obligation for guaranteeing world-wide access and taking each necessary step towards reaching the most marginalized children. However, getting a child to attend school is not always sufficient as it does not promise an education that empowers an individual to realise their social and economic objectives. For example, a study on monitoring educational quality (1995-2006) by the Southern and Eastern African Consortium measured primary school scholars reading literacy versus averages determined by sixth-grade teachers and reading experts. Four of the seven countries revealed that less than half of the sixth graders

could achieve the minimum competency in reading. Another study by the "Programme d'Analyse des Systemes Educatifs de la Confemen" (PASEC) in six French-speaking African countries, between the years 1996 – 2001 similarly provides evidence of poor achievement in education for all. Their study uncovers that up to 43% of fifth graders achieved extremely low levels in mathematics and French. Therefore, the focus must be on the right to have an education and having a quality education.

The greater part of literature focuses on measuring education through the measure of 'years of schooling' averaged across the working-age population (Woessmann, 2003). However, a vast amount of controversy arises if it is genuinely the level of schooling or the change in years of schools that is more crucial for propelling economic growth. Pritchette (2006) raises questions on how credibility simple growth models are regarding years of schooling and highlights the importance of getting other things right to promote economic growth, particularly focusing on the institutional framework of an economy. Pritchette (2006) also highlights that only using years of schooling as a measure presumes that a single year of schooling realises an equal increase in knowledge and skills irrespective of the schooling system itself.

Hanushek and Kimko (2000) measure the quality of education through data from international pupil achievement assessments in 1991. Their findings show a substantial positive effect of the quality of education on economic growth, which is considerably greater than the quantity of schooling on economic growth. Similar studies have also found results in favour of this argument (Barro, 2001; Bosworth and Collins, 2003; Woessmann, 2003; and Jamison et al. , 2007). Therefore, suggesting that the quality of education is much more vital than simply the amount of education.

To ensure quality education, attention must be given to the role of teachers, the relevance of curriculum, and the nature and ethics of the learning environment for pupils (Dakar Framework for Action, 2002). Furthermore, a rights-based approach dictates a pledge to respecting and recognizing a child's human rights while in school, together with respect for their integrity and identity. This will allow for an increase in retention rates while making the education process transparent, accountable, and empowering.

It should also be noted that growing evidence suggests a positive correlation between respect for human rights and development outcomes. For example, entrenched inequalities tend to

hinder economic growth and achievement of development objectives (USAID and PACT, 2018), while violations of civil and political rights correlate with lower economic growth[7]. Achieving education for all is complex. To guarantee all children have access to quality education throughout their childhood, it is imperative to mention that this goes far beyond just the responsibility of the education minister. The right to education can just be realised in an economic and political setting that recognises the significance of participatory, transparent, and accountable procedures, in conjunction with broad-based cooperation between government and the public (UNICEF, 2007).

Therefore, governments must develop meaningful strategic policies for the progressive achievement of educational rights, which includes specific time frames, raising the quality of education, and bringing together essential policy and legislative processes ensuring children the protection of their right to attending school. From a macroeconomic policy perspective, policies should reflect the commitment and allocation of appropriate resources. For example, the 'Education for All Fast-Track Initiative' set up in 2002 is a partnership between multilateral agencies and donors supporting low-income countries. They fund sound education proposals administered by the World Bank who supplies an outline for guiding education initiatives. The benchmark established is that "public domestically generated government revenues for education" should be between 14-18% of the gross domestic product (GDP). Thus, while the spending on education is around 20% as a portion of government revenue, primary education spending between 42-64% is a portion of total education expenditure, depending on the length of the cycle.

In terms of a broader economic policy perspective, emphasis should be put on the understanding that economic policies can directly and indirectly affect the rights-based approach to education. Too often, economic policies and their impact have no consideration of their impact on children. For example, policies related to taxation, economic growth, and trade barriers could affect the overall well-being of children and their parents' capacity to support their access to school. For that reason, robust legislative frameworks need to be established, clearly acknowledging education as right, which governments are accountable for, and everyone can demand.

[7] Organization for Economic Cooperation and Development (OECD) Development Assistance Committee, 2007. DAC Action Oriented Policy Paper on Human Rights and Development.

The rights-based approach is therefore seen as a moral framework as stated in IDRC (2013) document. It is "a 'container' that shapes its contents by introducing the international human rights standards into discussion, policies, conventions and processes that address sustainable development."

2.4. Empirical literature on colonial education

Some of the empirical literature that focuses on the earliest periods of missionary expansion comes from Jedwab et al. (2018), Fourie, Ross and Viljoen (2014), Fourie and Swanepoel (2015) and Meier zu Selhausen (2019). Fourie *et al.* (2014) utilised data from the 1849 Cape colony mission census to evaluate how mission stations affected the growth of literacy in the Cape Colony. The authors found that length of residence, gender, age, and whether the person was born there or arrived after the emancipation of slaves, and which missionary organization was running the station mattered for literacy performance. The findings add to the research areas in human capital since economic historians see literacy as the most appropriate indicator for human capital. The study also emphasises that being at the right mission was a factor in determining higher literacy rates. Results show that the Wesleyan Society, the London Missionary Society, the Free Church of Scotland, and the Rhenish Society were more effective in facilitating their converts in becoming literate than the Moravian Society and the South African Missionary Society.

Additionally, Fourie and Swanepoel (2015) researched the persistent effects of mission stations and education in South Africa using the 1849 mission census. They examine whether controlling for location and selection of missionary schools could provide an explanation for education outcomes 147 years later. Their primary set of calculations showing that Black and Coloured inhabitants of districts that had a mission station are more probable today to achieve higher years of schooling than those districts with no mission stations. Furthermore, revealing that education appears to be the mechanism explaining persistence when only modern-day controls are included. Conversely, when controlled for selection, literacy loses its explanatory power. Concluding that "education outcomes may be highly persistent–even in the face of active oppression by apartheid authorities–but the key factor is an early selection and not education persistence" (Fourie and Swanepoel, 2015).

Jedwab et al. (2018) question the connection between economic development and mission schools. The study utilizes annual panel data on missions in Ghana from 1751-1932, along with

cross-sectional data on missions in 1900 and 1902 from 43 sub-Saharan African countries. Their findings point that economic factors drove decisions on missions' location because missionaries tended to go to safer, healthier, more developed and accessible areas. They were giving reason to why locations who had past missions tend to be more advanced today. This suggests that mission location was not an external choice like many previous studies have assumed.

In the colonial era school enrolment rates have also been extensively used for the appraisal of colonial education and their legacies in sub-Saharan Africa (Benavot and Riddle, 1988; Brown, 2000; Lloyd et al., 2000; Bertocchi and Canova, 2002; Cogneau, 2003; Bolt and Bezemer, 2009). Bolt and Bezemer (2009) debate, along with Glaeser et al. (2004), that is instead colonial education than colonial establishments that is fundamental in justifying long run growth inequalities within Africa. However, Cogneau (2003) observes no evidence for this association, suggesting that the model's specification is notable.

It is also important to take note of the fact that the unequal access to primary education among males and female led to disproportionate levels of human capital among genders in Africa. Meier zu Selhausen (2019) studied primary school enrolment across twenty-seven African countries displaying female to male ratios. He showed that South Africa was one of the only countries among the twenty-seven to have equal males and females attending primary school, whilst three out of five countries revealed that males remained significantly more represented in primary schools. It is also revealed that eleven of these countries (with a ratio below two) used to be British ruled among the twenty-seven countries. Similarly, Montgomery (2017) finds that Catholic missions' presence in colonial Tanzania delivers a negative influence on the educational gender gap today. In contrast, Nunn (2014) finds that subjection to Catholic mission schools did not have any long-term effect on women's education, although it does have a favourable influence on male education today.

In addition, Benavot and Riddle (1998) studied 126 colonies using primary enrolment rates, finding that political, social, economic, and religious conditions were crucial aspects in determining mass school expansion in 1870-1940, compared to later periods. Furthermore, the study calculated that of the 12-15 million children of school age, approximately 10% were enrolled in some type of primary level education in 1920. The average enrolment rates in French colonies were around the same level as attained by British colonies 50 years earlier.

They explain that this was due to the French's emphasis on secondary-level education to create an assimilated elite.

A more recent review by Woodberry and Gallego (2010) indicated how present educational performances are considerably higher in Catholic and Protestant regions where missions faced more pressure to compete, leading to greater activity in these areas to gain converts. This explains to a large extent the education lead by African nations who were colonised by Britain, as the French had to adopt processes to diminish rivalry from non-Catholic missionaries.

2.5. Conclusion

Education functions as a major contributor to the enhancement of a country's economic wellbeing. Therefore, in this chapter, human capital was assessed with a specific emphasis on education and how the two concepts are seen as interlinked. The theoretical framework provided an in-depth insight into four main theories and approaches: growth theory, human capital theory, capabilities approach, and the rights approach to education. From this, it can be stated that the differences among human capital are a major proximate cause of differences in cross-country economic performance. Therefore, justifying the substantial influence accumulation of human capital has on the progression of economic development and economic growth. Additionally, the traditional approach to education and human capital is challenged by investigating the capability and rights to education approach is applied.

The capabilities approach allows one to think of education as an input into the production function and as a component to promote an individual's human capabilities. Consequently, the approach concentrates on equitable access to primary education and the notion of helping children develop and acquire the necessary capacities to reach their fullest potential. This is reiterated in the rights-based methodology, which considers education as a basic human right. In other words, the right to education should be comprehended as including respect for children's identity, their right to voice their opinions, and their personal and physical integrity. Moreover, each child in a society has the right to education which empowers them to develop life skills, self-confidence, and learning capabilities. Thus, the provision of quality education commands attentiveness to the curriculum and its contents and the quality of pupils learning environment. This infers the basis for establishing flexible, respectful, and effective learning outcomes and policies.

The empirical literature reviewed considers education with regards to missionaries and their impact on colonial education. Specifically, looking at the Cape Colony and missionary expansion. Some of the literature found that gender, age, length of residence, whether the person was born there or arrived after the emancipation of slaves, and importantly which missionary organization was running the station, mattered for literacy performance (Fourie *et al.*, 2014; Fourie, Ross and Viljoen, 2014; Jewab *et al*., 2019). Furthermore, the education lead by British colonies is explained by Woodberry and Gallego (2010).

Therefore, with the extensive literature emerging and the establishment of colonial missions utilised to study the effects of human capital, culture, and religion on economic outcomes. It is imperative to utilise such datasets available to draw comparisons. The last portion of the chapter reviews education in South Africa until 1910 and in the early twentieth century. It exposed the lack of consideration taken by the British colonial power to educate the indigenous people in South Africa. The chapter highlights that education for Black communities was, for the most part, the responsibility of missionaries and did not have much financial assistance. In addition, it brings to light that colonist used missions' schools to preach industrial labour and that the indigenous people of South Africa were not educated or even urged to be critical thinkers.

3. METHODOLOGY AND DATA

3.1. Introduction

The main objective of the following chapter is to deliver an overview of the methodology and data employed in the study. The data utilised comes from two main sources: (i) colonial data collected from the South African census books of 1911 and 1921 (South Africa, 1911; South Africa 1921), and (ii) data made available by Ewout Frankema from his study "The origins of formal education in sub-Saharan Africa: was British rule more benign?" published in the European Review of Economic History journal in 2012. To review and illuminate the data collected on colonial education in both South Africa and other African countries, quantitative analysis will be utilised. This will mainly be done through descriptive statistics and an Ordinary Least Square econometric model. In addition, an interaction effect was attempted between the new regressions and Frankema's with a comparison of the R^2. The chapter is structured as follows: Section 3.2 investigates the data collected and its sources, Section 3.3 explains the methodology applied, Section 3.4 summarises the limitations faced conducting the study. Lastly, Section 3.5 concludes the chapter.

3.2. Data and sources

The study will use two sources of data. The first dataset collected from the South African census was conducted in 1911 and 1921. Christopher (2010), as referred to previously, brings attention to the 1911 census regarding it as a "foundational Domesday survey" of South Africa, as it presents a widespread coverage of the Unions housing, population, industries, and agriculture. In his analyses, he views the first census of the Union as a "remarkable survey of the country as it attained internal administrative and political independence" (Christopher, 2010:23). Furthermore, Christopher (2015) adds that the South African census has a common cross-tabulation feature by population and race groups. However, it has remained reasonably stable since the 1921 census, with four main groups being retained, 'European' or 'White' and 'Other' or 'Colored'. These censuses were chosen as they are the closest to those used by Frankema (2012), discussed below, who excluded South Africa from his study. However, Frankema does not specify why he excludes South Africa from his dataset. This is both in terms of the structure and quality of the data. Census 1921 was gathered, captured and analysed, but the lack of detailed data was not significant as the census only included Whites and no data on the Coloured population. Census 1921 was therefore excluded from the data and only Census 1911 was used.

The second source is data from Frankema (2012), who generously shared the data with me. He studied the cross-country data of 43 African countries to compare British and French outcomes in education (see the appendix 1 for further information relating to the countries included in the data).

For South Africa, I collected the same geographic data either from the census or made by assumptions. For example, the malaria index in the regression for South Africa was assumed 0, as South Africa is not a country affect by malaria. The data and all assumptions are discussed in more detail in chapter 3. This will allow for a more comprehensive inclusion of British colonies and allow for a better comparison between African countries.

The census data for 1911 primarily comes from Part 3 of the census of South Africa that consists of education (South Africa, 1911). The censuses were conducted by enumerators, who submitted their results to the head offices. Enumerators who were approved were required to attend at the magistrates' offices to receive personal instructions as to their duties; therefore, every attempt was made to guarantee that every enumerator knew what was required of them. Each enumerator was required to enter in a book a summary of the number of persons enumerated each day, distinguishing males and females, persons by age group, persons of European or White Race, Natives and persons belonging to other Coloured races. As mentioned in Chapter 1, the term White in this study refers to individuals of European descent, whereas Coloured will refer to the population of non-European descent, including both Black/African, and modern-coloured individuals.

The census is seen as one of the most comprehensive and intrusive analyses undertaken by a state to pursue information concerning the population it controls and serves. It offers a statistical reflection on human attributes and activities for a specific country. In colonial times governments used surveys, questionnaires, censuses, and other methods for stocktaking of a population. They did this for various reasons, from raising taxes to assessing military potential (Christopher, 2010). Administrations in colonial times deemed census taking as a vital aspect of assessing their territories. Anderson (1970) highlights the importance that universal enumeration had, through conducting censuses, in establishing a sense of national solidarity. To simplify and make data intelligible, states found it necessary to classify populations into defined groups or categories, for which the ruling authorities also possessed the prerogative of naming.

The South Africa census coverage was unsystematic and irregular for most of the nineteenth century. The first modern scientific census was conducted for the Cape of Good Hope in 1865, which followed the principles set by the British Colonial Office who repeated the exercise in 1875. In 1880 and 1890, the Orange Free State followed, copying many aspects of the 1865 Cape of Good Hope census, restricting the enumeration to only the White population. Natal conducted a partial enumeration in 1891. In 1904 after the 1899-1902 war in Southern Africa, all four provinces undertook census; however, each varying in scope and inclusion. Once the union was founded in 1910 as a British dominion, the need for a new enumeration and the state's statistical defining emerged (Christopher, 2011). In 1910 a census office was established to conduct the quinquennial census to the director, beginning in 1911. The questionnaire used was designed to conform to the "Census of the British Empire 1911" requirements, which the Colonial Office in London oversaw. In the 1921 census, however, different questionnaires were provided to different population groups, resulting in uniformity within the country to be lacking.

Table 1 displays the Union of South Africa is divided into 206 Census districts and 5,447 enumeration areas. As presented, the Cape of Good Hope had more than double the districts than any other province with 2,911 areas. Figure 1 shows the Union's map – more information on the area and population of the Union can be found in Chapter 4.

Table 1: Census districts and enumeration areas

	Districts	Areas
Cape of Good Hope	117	2,911
Natal	42	703
Transvaal	23	1,213
Orange Free State	24	620

(Source: South African population Census 1911)

As mentioned previously, when the Union of South Africa was established in 1910, South Africa was separated into four provinces, namely; the Cape Province, Natal, Orange Free State and the Transvaal. With the Union being formed, the Cape Colony has renamed the Cape Province. However, the Cape Province was still the largest of the four South African provinces, as its territory extended to included previously annexed regions, such as Griqualand East,

Griqualand West, and British Bechuanaland. This resulted in the Cape Province encompassing almost two-thirds of the total territory in South Africa, as visible on the map in Figure 1. This can also be concluded from Table 1, where it shows that the Cape Province consisted of 117 districts, compared to Natal only having 42, Transvaal having 23, and the Orange Free State having 24 districts. Districts refer to what we know today as municipalities and areas to towns.

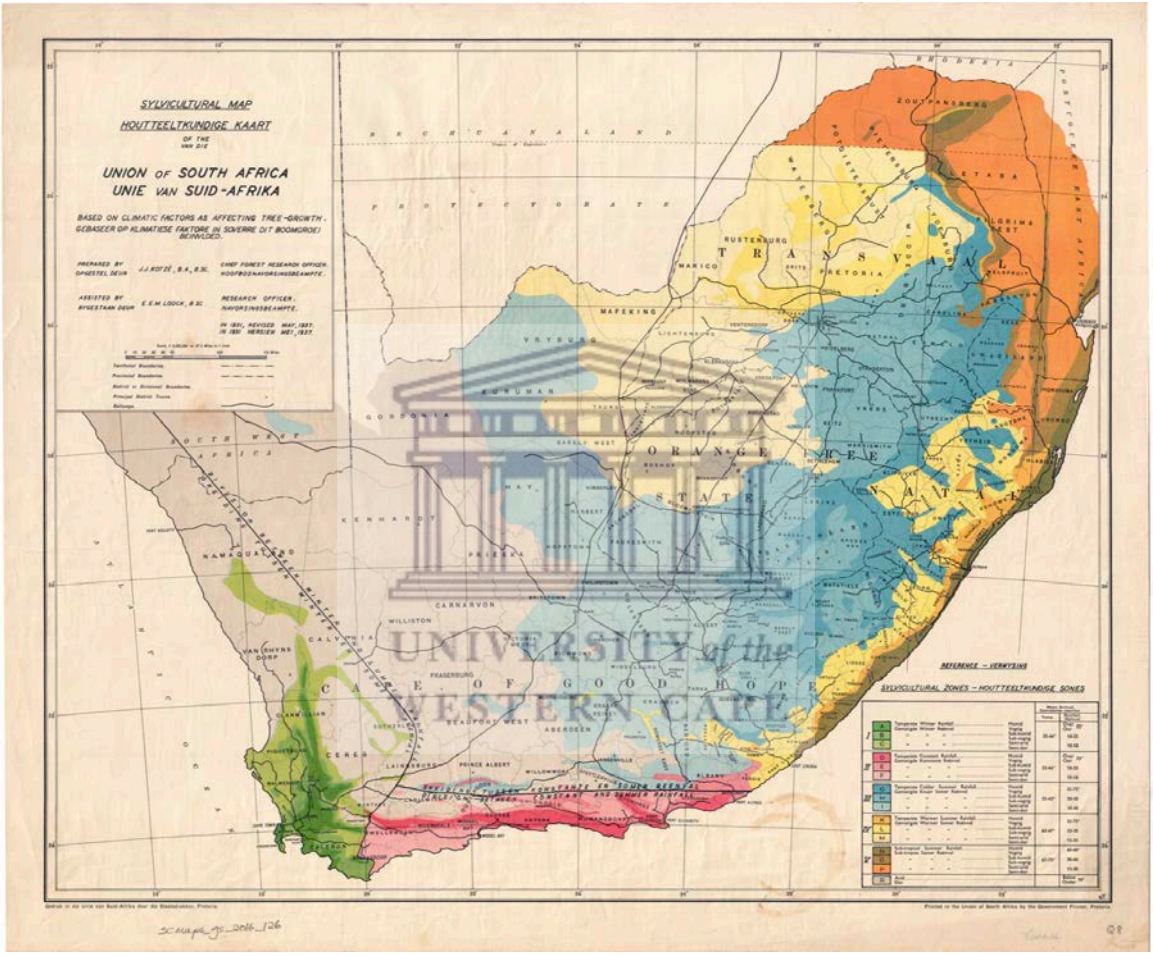

Figure 1: Map of the Union of South Africa, 1911

(Source: UCT Digital Library)

To determine educational attainment for the Colony, I will use the education returns published by the census and literacy rates. Literacy rates of districts are predicated on the following categories: whether an individual can read and write, only read and neither read nor write. Individuals are also divided into the following racial groups: White and Coloured. These are the modern and accepted terms by historians, given that there is little evidence on the categorization by the enumerators. Literacy rates for the people will also be broken into

quinquennial age periods for the Union. Age periods are categorised by; under 15 years, 15 years and over, under five years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, 45-49 years, 50-54 years, 55-59 years, 60-64 years, 65-69 years, 70-74 years, 75-79 years, 80-84 years, 85 years and over, and unspecified. The census also provides literacy rates by distinguishing between Urban and Rural Areas for the race groups by quinquennial age periods.

The second variable that is measured is education returns determined by school attendance of inhabitants in the Union. This includes several scholars who attended school, also categorised by European or White and Other than European or White for the age groups; Under five years, five and under 15 years, and 15 years and over. The data on education returns is also provided in terms of Private schools and Government and Government aided schools. Additionally, some insight will be made on the number of schools, classification of private schools and number of private schools connected with religious denominations.

Additionally, to recapitulate and clarify the data collected on educational outcomes for South Africa, the focus will be a quantitative analysis employed using descriptive statistics. This will provide digested data on the literacy rates for the Union, education at each quinquennial age period, and read and write rates for different race groups and genders.

3.3. Research methodology

The study will concentrate on quantitative cross-sectional data methods to determine the educational attainment, via primary school enrolment rates for South Africa regarding the census years 1911. This will provide a compressive and comparable analysis against other African countries, both former British and French colonies. As a result, an Ordinary Least Squares (OLS) regression will also be generated to include South Africa among different African countries – this follows Frankema (2012). The OLS method is attributed to the German mathematician Carl Friedrich Gauss and is seen by many economists as one of the most popular and powerful regression analysis methods (Gujarati and Porter, 2009). Regression analysis mainly focuses on estimating and/or predicting a dependent variable's population mean value based on the known explanatory variables (Gujarati and Porter, 2009). Multiple regression includes more than one explanatory variable and is an extension of ordinary least-square regression. In essence, its goal is to explain the linear association between the dependant variable and explanatory variables. Thus, to draw interferences on a population or nation, a

regression function must be generated for a specific sample size (*n*) and observations of X and Y to get as near to the actual Y(Y_i). An OLS, therefore, allows a researcher to select specific explanatory variables to explain for variation in a dependant variable. A multiple regression model will be explored in this study using several independent variables; the OLS technique approximates the relationship by minimising the sum of the squares in the difference between the observed and predicted values of the dependent variable. Likewise, multiple regression is regression analysis conditional upon the regressors' fixed values, where one obtains the mean value of Y for the given values of the regressors. The coefficients β_1, β_2 etc. in the regression are known as the "partial regression" or "partial slope coefficients." This means that the partial regression coefficient β_i, is measuring the change in the mean value of Y per unit change in *Xi*, holding all other variables constant.

A multiple Ordinary Liner Regression is formulated as follows:

$$yi = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ ... + \beta_p x_{ip} + \varepsilon$$

Where, for $i = n$

yi = predicted variable

xi = controlled variables

$\beta 0$ = y-intercept (constant term)

βp = slope coefficient for each controlled variable

ε = error term (residual)

The multiple ordinary regression model is also built on the subsequent assumptions:

1. There is a linear relationship between dependant and independent variables (Linear in the parameters).
2. The X values are independent of the error term, with zero covariance between them.
3. Zero mean value of disturbance ε.
4. The variance of ε is the same, regardless of the value of *x*. Therefore, homoscedasticity or constant variance of ε.
5. No autocorrelation between disturbances.
6. The number of observations, *n*, must be greater than the number of parameters to be estimated (e.g. the number of explanatory variables).

7. There must be variations in the X variables.
8. No exact collinearity between the X variables.
9. There is no specification bias.

Given the assumptions outlined above, it can be proven that the OLS estimators of the partial regression coefficient are unbiased and linear and have minimal variation, therefore satisfying the Gauss-Marko theorem (Gujarati and Porter, 2009). Furthermore, the R^2 represents a statistical metric applied to compute how much variation in the result can be explained. The variation in the independent variables achieves this, formally known as the "goodness of fit' of the regression. R^2 *always* lies between 0-1 and the nearer the R^2 lies to 1, the "better" the model is said to be (Guajarati and Porter, 2009). However, it should be noted that the R^2 will increase with every independent variable added, as it is a nondecreasing function and can therefore be misleading. The adjusted R^2 will compensate for this by penalised for every variable added. For that reason, the adjusted R^2 is used more frequently to determine the goodness of fit.

To expand on Frankema's work and include South Africa in the available data, the regression will be expanded to include the census data collected for the Union of South Africa. Frankema's (2012) study tests the supply and demand factors in a multivariate regression framework confined to cross-country data based on 42 African colonies, excluding South Africa. His model is as follows:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \cdots + \varepsilon$$

$$y = \alpha + \beta_1 British\ rule + \beta_2 malaria\ ecology + \beta_3 population\ density + \beta_4 Islam\ core\ area + \beta_5 tears\ of\ pacified\ rule + \beta_6 African\ state\ centerisation + \beta_7 peasant\ cash\ crop + \beta_8 mining\ economy + \varepsilon$$

Where *y* refers to educational attainment, α is a constant and ε an error term. Vectors x_1 relates to the effects of exogenous supply conditions, including a dummy for British control, an index number for malaria ecology and the natural logarithm of population density. Vectors x_2, reflects the endogenous supply-demand responses, including a dummy variable for the pre-colonial influence of Islam, an index number for the extent of pre-colonial state centralization and the total number of years of the pacified rule before 1938. Finally, vector x_3, reflecting African

demand responses to consolidated colonial rule, containing a dummy variable for centres of peasant cultivation of major export crops such as cotton, tobacco, cocoa, palm oil, and a dummy variable for the development of sizeable and geographically concentrated mining industry (Frankema, 2012). The explanatory variables are British rule, malaria ecology, population density, Islam core area, years of pacified rule, African state centralization, peasant cash crop and mining economy.

To include South Africa, I make the following assumptions. First, South Africa does not have malaria and, therefore, a 0 malaria index. Second, the population density and area data is found in the census and calculated appropriately. Third, little pre-colonial Islam influence is supported by values in the census, found under Part 4: Religion. Fourth, in South Africa's case, the pre-colonial state centralization is also challenging to determine and is assumed as 0 as is pacified rule. Finally, South Africa does possess a concentrated mining industry at this stage, which is assumed as 1, while there are minimal cash crops as in other African countries, and this also is assumed as 0.

The following section would focus on ordered logistic regressions to investigate the effects of educational attainment and if British policies facilitated schooling compared to other French colonies. The models will be used to test educational attainment, which is measured through Gross Enrolment Rates (GER) for the period outlined above and test the supply and demand factors. The GER is calculated by using quantity of pupils enrolled in a certain level of education, irrespective of their age, conveyed as an percentage of the official school-age population corresponding to the same level of education. To include South Africa in the model with the other 42 African countries (British and French), the GER was calculated using the census data available on scholars who attended school for White and Coloured pupils.

The British rule variable was determined using a dummy variable set to 1 if Britain held colonial power during the early 1900s for the specific country. Malaria ecology was an index number reflecting the ecological conditions supporting malaria vectors which determined the spread and strength of the disease (Gallup and Sachs 2000). The natural logarithm of population density was taken to compute the population density variable. Precolonial influence of Islam was determined by the use of a dummy variable as well and set to 1 if belonging to the sub-Saharan African Islamic core area before 1885. Years of pacified rule variable was valued by the number of years that colony can be regarded as 'pacified' before 1938. Firstly, the criteria

were that colonial rule was established in the entire territory and, secondly, that large-scale armed resistance against colonial forces remained absent until the decolonisation era. An index number indicating the extent of pre-colonial political centralization was used to define the variable years of pacified rule. This was calculated as the segment of the non-European populace existing under centralized state institutions. A dummy variable was again utilised to determine the peasant cash crop exporter, set to 1 if native peasants adopted and further developed cotton, tobacco or cocoa cultivation techniques before World War I. Lastly, the mining ecology variable, also used as a dummy variable, is set to 1 if a substantial mining industry develops under colonial rule that is geographically concentrated and, hence, stimulates urbanisation and concertation of labour and capital in the region.

3.4. Limitations

A limitation faced in the study was sourcing the relevant data. As the study intended to build on Frankema's work, the colonial data needed for South Africa had to be as close as possible to the years used in his work. However, there are no closer records accessible for the years 1938 and 1950 – therefore, the census data for the Union of South Africa 1911 was chosen and supplemented by the 1921 data. The 1911 census data was used as it was the only census with comprehensive records on education and was the closest to the years used in Frankema's data. Other limitations include assumptions on some of the variables described above, the COVID19 pandemic and limited access to resources and libraries made finer aspects impossible here. This is expanded to gaining access to other sources that were not possible when the study was conducted.

3.5. Conclusion

Chapter Three focused on discussing the methodological approaches and the data to use in the empirical analysis. First, an overview of how the data was collected and how it will be utilised was presented. This is followed by the empirical approach that the study intends to follow, and a brief outline of the data gathered for the study and their sources. Additionally, the regression model which will be carried out in the study was also discussed, indicating the variables which will be used. Lastly, the chapter considers the limitation faced.

4. EMPIRICAL FINDINGS

4.1. Introduction

Building on the research design and methodology (Chapter 3), this chapter will provide the research study results and data obtained from the South African population census to answer the research question. The intention of the empirical investigation is to present the digested data for South Africa to give an enhanced comprehension of the education dynamics for the Union by comparing South Africa's results to other African countries. The chapter is organised accordingly: Section 4.2 displays the descriptive statistics of the education data; Section 4.3 offers the outcome of the econometric analysis. Lastly, Section 4.4 concludes the chapter.

4.2. Descriptive statistics

While the word "European" and "Persons of European decent" is used in the census, following historians as mentioned in Chapter 1, I use the modern term of "White". Additionally, the definition of other races (such as individuals from native tribes, non-Europeans and Coloured's) are classified by the word "Coloured". As mentioned before, this means the term Coloured as used here will include modern Black/African categories. The Coloured group is therefore defined in two main categories[8] and were enumerated using special schedules. The chief native tribes of the Bantu races are Zulu, Basuto, Fingo, Mashona, Bechuana, Xhosa, Pondo, Barolong, Shangaan, Pondomise, Swazi, Tongo, Xesibe, Ovambo, Barotse, Mozambique. The following are not Bantu and were classified under Mixed and Coloured Persons; Bushman, Hottentot, Griqua, Koranna, Namaqua, Cape Malay, Negro, Creole, and Cape Coloured (South Africa population census 1911).

In the regression results, one of the missing categories for South Africa is geographic information. The assumptions on variables are mentioned in Chapter 3, and a map of the Union can also be found in section 3.2. Table 2 provides a summary of the square miles for each province. The total area of the Union in 1911 was 473,100 square miles divided into four provinces: Cape Province 276,995 square miles (59% of Union), Natal 35,290 square miles (7% of Union), Transvaal 110,426 square miles (23% of Union) and Orange Free State 50,389 square miles (11% of Union). This shows how the Cape Province made up more than half of the total area of the Union, totalling 59%, whereas the province of Natal had the lowest per

[8] The two main groups for non-European persons being Bantu and Mixed or Coloured persons.

cent, totalling only 7% of the Union, as summarised in the table below (South African population Census, 1911).

Table 2: Total area of the Union of South Africa

	Square miles	% of the Union	SQUARE MILE/PERSON
Cape	276,995	59	61.11
Natal	35,290	7	18.92
Transvaal	110,426	23	41.91
Orange Free State	50,389	11	61.06

(Source: South African population Census 1911)

The Cape, although the largest, is the most thinly populated, while Natal with the smallest area has the largest number of persons to the square mile, each individual having only 18.92 acres, compared with 69.11 in the Cape Province, 61.06 in the Orange Free State, and 41.91 in the Transvaal. The number of persons to the square mile for the Union is 12.63, of whom 2.70 are of the White race and 9.93 of Coloured races (South Africa, 1911). The population statistics are shown in Table 4 below.

Table 3 summarises the population density over 20 years for the Cape and seven years for Natal, Transvaal, and Orange Free State. The population density for an area is the number of individuals per unit geographic area. Table 3 shows that the White population density in all provinces was considerably lower than that of the "Coloured" group. The table shows that Natal had the highest population density in 1911, with the Cape of Good Hope having the lowest at 9.26%. The Cape Province[9] did show an increase of about 2% from 1891 to 1911 regarding the total population. Transvaal showed the highest growth for a Coloured group, rising by 2.65%, whereas the Coloured group in the Cape showed the lowest rise, with only an 0.55% increase from 1904-1911. The Cape Province at the time had the largest geographical area and therefore resulted in having the lowest density at the time, whereas the Transvaal was the smallest geographical area, resulting in the highest per cent density.

[9] The Cape of Good hope become known as the Cape Province in 1910 when the Union of South Africa was formed.

Table 3: Population density in the Union of South Africa

	Total (%)	White (%)	Coloured (%)
Cape of Good Hope			
1911	9.26	2.10	7.16
1904	8.70	2.09	6.61
1891	6.90	1.70	5.20
Natal			
1911	33.83	3.78	31.05
1904	31.34	2.74	28.60
Transvaal			
1911	15.27	3.81	11.46
1904	11.50	2.69	8.81
Orange Free State			
1911	10.48	3.48	7.00
1904	7.69	2.83	4.86

(Source: South African population Census 1911)

The population size for the Union of South Africa was 5,973,394. Table 4 shows the population for the Union divided by Province and Race. The table shows that the Cape of Good Hope had the highest population size overall amongst all provinces. The White population made up a significantly smaller proportion of the total in the province compared to the Coloured population. This was true for all the provinces in the Union. This indicates that the Coloured population was significantly greater than that of the White population in 1911.

Table 4: Population size for the Union of South Africa, 1911

Province	**All races**	**White**	**Coloured**
Total	5,973,394	1,276,242	4,697,152
Cape of Good Hope	2,564,965	582,377	1,982,588
Natal	1,194,043	98,114	1,095,929
Transvaal	1,686,212	420,562	1,265,650
Orange Free State	528,174	175,189	352,985

(Source: South African population Census 1911)

The second important aspect of placing South Africa in comparison with other countries is the literacy rates. Table 5 shows the illiteracy rates for the provinces and Union. In the table below, "Age category" is added to refer to the age group, whereas in the census (South African population census 1911), the phrasing "Age period" was used. This change is made for more clarity. Additionally, the census specifies different age groups among the different provinces. The reasoning is not made clear as to why this was done. From Table 5 we can; however, we can conclude that Whites have the lowest illiteracy rates in the Union and in the four provinces between 15 and 29 years of age. This provides insight into how unequal illiteracy was amongst racial groups, with the Coloured groups having drastically lower percentages at the given age periods in all four provinces.

Table 5: Lowest illiteracy rates in Union of South Africa and Provinces

Province	**White**		**Coloured**	
	Age category	*%*	*Age category*	*%*
Union	20-24	1.50	15-19	82.62
Cape	20-24	1.84	15-19	74.60
Natal	30-34	0.91	15-19	91.71
Transvaal	20-24	1.35	25-29	87.07
Orange Free State	25-29	1.04	20-24	77.06

(Source: South African population Census 1911)

Regarding religion in the Union, Table 6 below illustrates the data made available from the Census 1911. Almost 96% of European or White persons reported themselves as Christian, whereas only 3.69% identified as non-Christians. In contrast, European or White persons predominately related to 'No-Religion', while only 32.23% of the group identified as Christian. It should also be noted that the principal 'non-Christian' sects in the union are the Jews, Hindus, and Mohammedans (Islam). In addition, any person who was unwilling to state his religion was categorised under 'Object to state'. The number of persons who availed themselves of the right to withhold information on the point was 3,980, equalling 0.07% of the total population.

The total Bantu population in the Union (1,053,706 or 26.22%) belonged to one or other Religion group, while 73.78 % were regarded as heathen. At the same time, the Mixed and

other Coloured races in the Union 460,758 (67.95%) identified as belonging to Christian religions. The majority of them were found in the Cape Province, with the percentage of Christians amounting to 87.25% (South African population Census, 1911). This, furthermore, provides an indication of the religion among the population in the Union and shows that Islam was not a common Religion at the time. For this reason, the assumption was made that there was little pre-colonial Islam influence, and the dummy variable, as mentioned above, was set to 0 for South Africa in the regression analysis.

Table 6: Religion in the Union of South Africa, divided by Racial groups

Religion	**All races**		**White**		**Coloured**	
	Number	*%*	*Number*	*%*	*Number*	*%*
Christian	2730729	45.70	1216265	95.31	1514464	32.23
Non-Christian	212864	3.58	47057	3.69	165807	3.54
Indefinite	1199	0.02	1116	0.08	83	*
No Religion	3016365	50.49	3703	0.29	3012662	64.14
Object to State	3980	0.07	3613	0.28	367	0.01
Unknown and Unspecified	8257	0.14	4488	0.35	3769	0.08
Total	5973394	100	1276242	100	4697152	100

* % too small that it has no sig.

(Source: South African population Census 1911)

The residents that form part of the population of the Union amounted to roughly 6 million. Figure 2 illustrates the degree of literacy between different racial groups in the Union. This is the only data available from the 1911 Census where more in-depth insight is given among non-European groups and clear distinction is made between Bantu and Coloured groups. From the figure, the White group performed substantially better regarding reading and writing, showing that the group was substantially more literate than any of the other races in the Union. White had a literacy rate of 75.93%, almost triple that of the Coloured group, only performing at a 20.75% literacy rate. This could be due to the uneven access to primary education during the colonial era in South Africa, where the White population had a far more superior quality of schooling than other racial groups. Duff (2011) reiterates that the White children, especially boys, were required to attend either state or private schools to obtain an academic education

and be prepared for roles such as professionals, employers of labour, businesspeople, and colonial politicians. On the other hand, coloured or African children only received a basic education and slight vocational training in 'aboriginal' and mission schools to sequentially receive jobs as manual or semi-skilled workers.

Additionally, as mentioned in Chapter 2, Christopher (2011 and 2015) also highlights the contrast differences between educational outcomes and children of colour, showing that White children were at the centre of education policies for most of history in South Africa. This is evident again in Figure 2, where all racial groups besides White had more than 75% of their population unable to read or write. Figure 2 gives a good indication of the overall education in the Union, providing insight into how skewed literacy rates were among racial groups at the time.

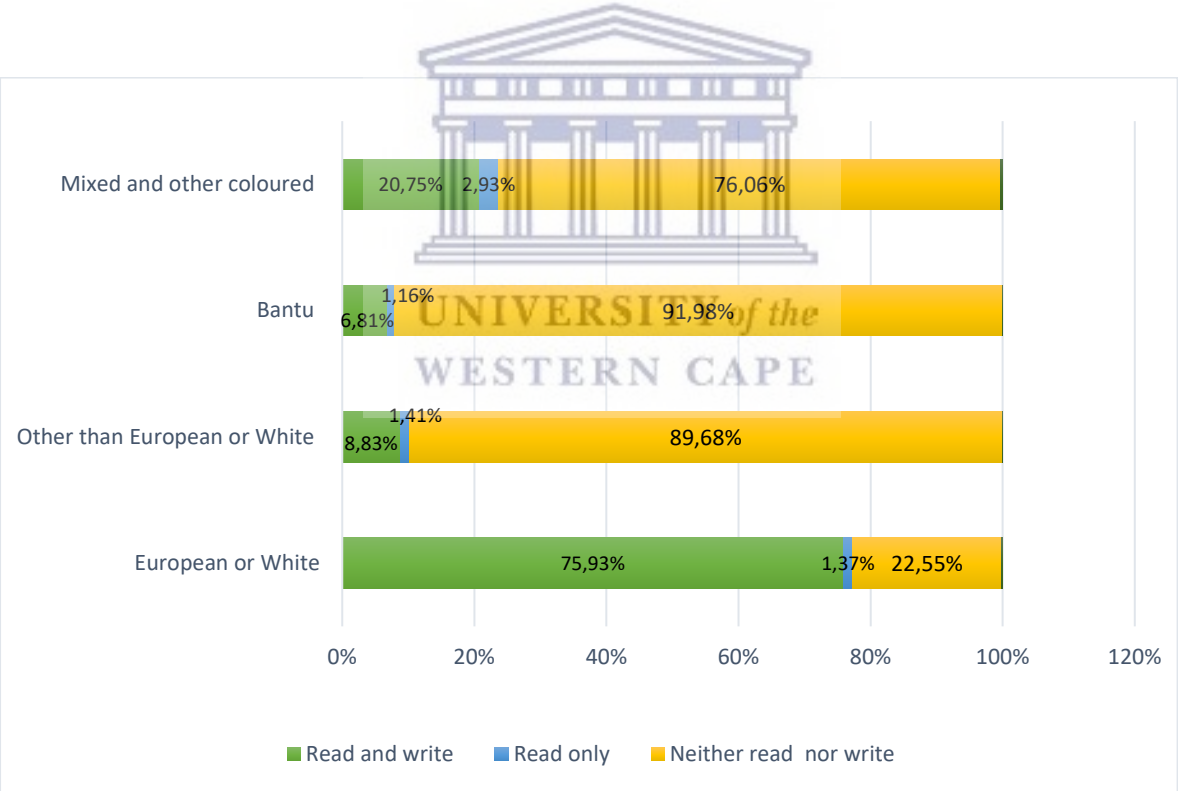

Figure 2: Literacy % for racial groups in the Union of South Africa

(Source: Researcher's calculations using South African population Census of 1911)

Figures 3 and 4 provide a graphical illustration of education at each quinquennial age period for the Union of South Africa. Figure 3 looks at the White population, whereas Figure 4 looks at the Coloured population. From Figure 3, it is clear that the per cent of the population starts

to increase around the school going age (5-15 years). It can be seen on the graph that the read and write per cent increases from around 40% at age nine to almost 95% by age fourteen, reaching a plateau from 15- 35 years, maintaining an over 95% rate. Once more, Figure 3 illustrates how neither the read nor write group, amongst the White population, decreases tremendously around ages 5-15years, declining from 100% to around 5% by age fifteen. Thus, the graph again shows how the White population had a high level of attending school.

Up until 1839, there was no continuity of educational policy. There were mainly only attempts by the Bible and School Commissions to bring education to outlying communities. The British Government primarily focused was on the White population (Malherbe, 1925). Malherbe (1925) also notes the rapid increase in the number of children attending school. In 1850 it was noted that only 4,000 children were enrolled in some form of schooling. By 1860, that figure grew to five times that. As expected, this put a strain on the Department and the grand-in-aids systems that were in place. In 1865 with the Education Act being implemented, a new £ for £ system was put into operation, which formed the foundation of the educational systems for the next 40 years (Malherbe, 1925). The pound for pound system was for all 'undenominational' schools, with the maximum government grant to a first-class school being £200, £75 for Second-class, and £30 for Third-class schools. Nevertheless, again, this illustrates the discrimination between schools for White and Coloured children in the Union.

In contrast, education for the Coloured population at each quinquennial age presents almost an opposite trend to that of the White population. Figure 4 clearly illustrates how education by reading or writing slightly increases from age ten to twenty, but not increasing over 25% for the population—concluding that access to education must have been extremely low for racial groups that did not form part of the White population. Figure 4 also reveals only a 30% decline over the age period for the Coloured population regarding neither read nor write category, in contrast to the European and White population, which had an almost 95% drop for the same category.

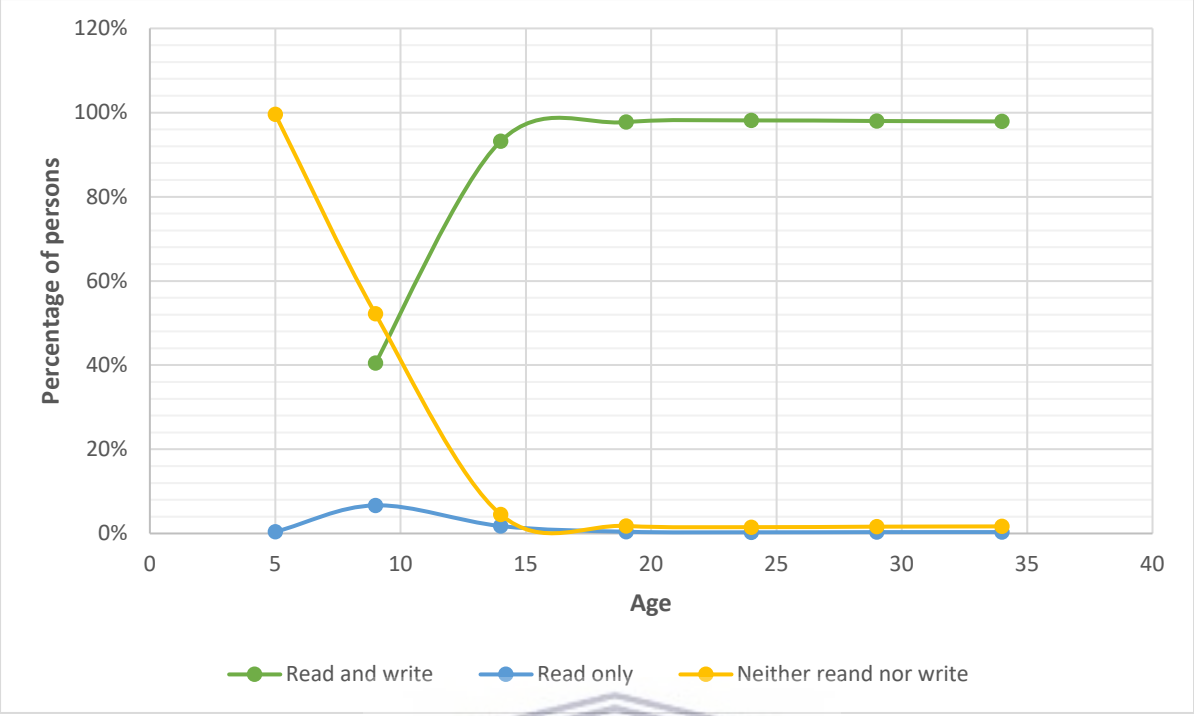

Figure 3: Education of the White population at each quinquennial age period, the Union of South Africa

(Source: Researcher's calculations using South African population Census of 1911)

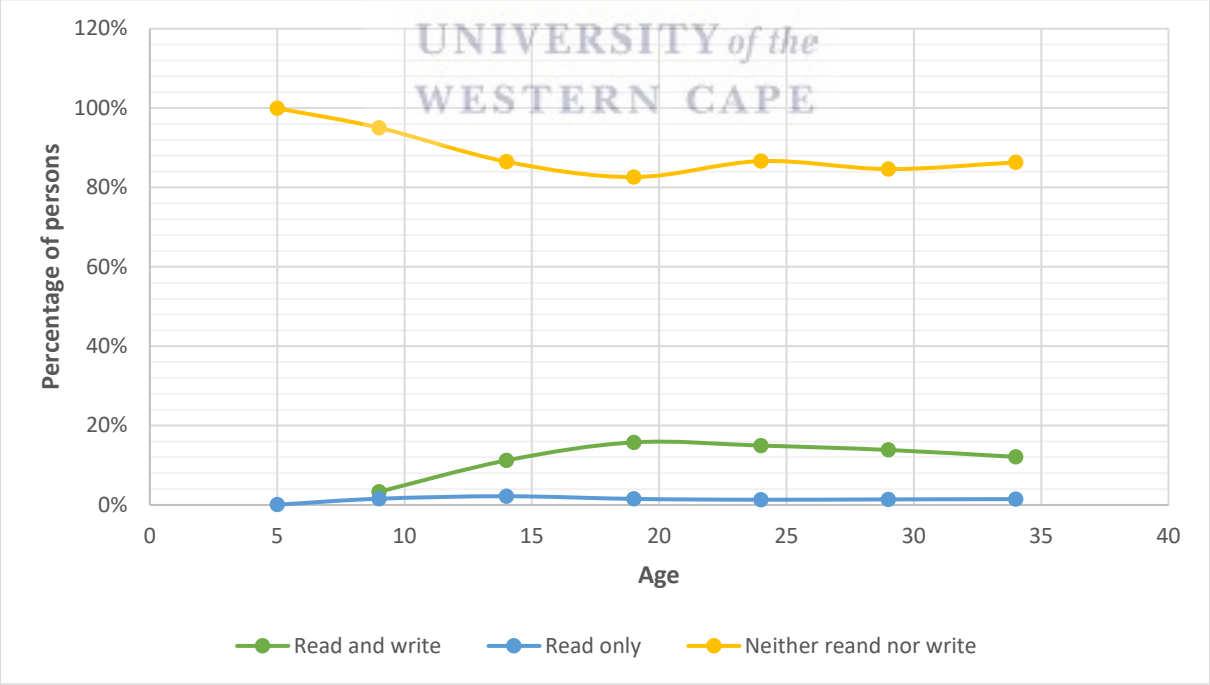

Figure 4: Education of the Coloured population at each quinquennial age period, Union of South Africa

(Source: Researcher's calculations using South African population Census of 1911)

Duff (2011) also notes that schooling was regarded as the best method to prevent White children from becoming destitute and prepare them to seize full benefit of economic development in the colony. As a result, from the 1870s, the colonial commentators associated White children's education and welfare with the productivity and stability of the State. Thus, the Destitute Children Relief Act of 1895 was implemented to eradicate White impoverishment and to ensure White control in the colony. The Act defined 'any child of European parentage' under fifteen as a White child. The Education Commission in 1869 also advocated for compulsory White elementary education to be implemented. Likewise, Lewis (1973) notes that the lack of adequate education was highlighted by all White commissions and the Carnegie Commission. Later in 1905, the School Board Act was implemented by Colonel Sir Charles, which outlined the development for education in the Cape Colony. The Act divided the country into a hundred School Board districts[10], which the aim of being regulated by a School Board. The primary function of the Act was to make education compulsory for each European child between the years of seven and fourteen, and in 1910 compulsory education was implemented in 91 of the 119 school board districts (Malherbe, 1925).

Figure 5 highlights the disparities among racial groups, presenting the read and write levels between the White and Coloured populations. Figure 5 displays the percentage of individuals who can read and write for the European or White population drastically growing from around 40% to 95% by age fifteen, upholding this per cent for the remaining age groups within the population. Even though it is evident from the graph that the Coloured population also shows an increase in the percentage of persons that can read and write, it is tremendously lower than the European population. The reason could be that even though the Education Act was declared in 1865, the intention remained that the government wanted Coloured residents to perform manual labour, and therefore schooling was not a priority among the Other than European or White population. According to Molteno (1984), schooling and education provided to Black children and communities were inferior to those of White or European descent. This was for the reason to prepare the former for low skilled jobs. The Education Act No.13 was passed in 1865, which formalises the system of state subsidies for private schools. Goverment funding is split into three groupings; public, native and mission. In 1894 the Conical of Education was abolished, and native education was established as a sub-department under the Superintendent of Education. Fedderke *et al.* (2000), from their study and results, indicate that the most salient

[10] 83 Divisional School districts, 10 Magisterial School districts (Malherbe, 1925)

point that emerged is that White educational opportunities, irrespective of whether the opportunity occurred in private or public schools, is considerably and consistently better than educational opportunities for Black or Coloured students.

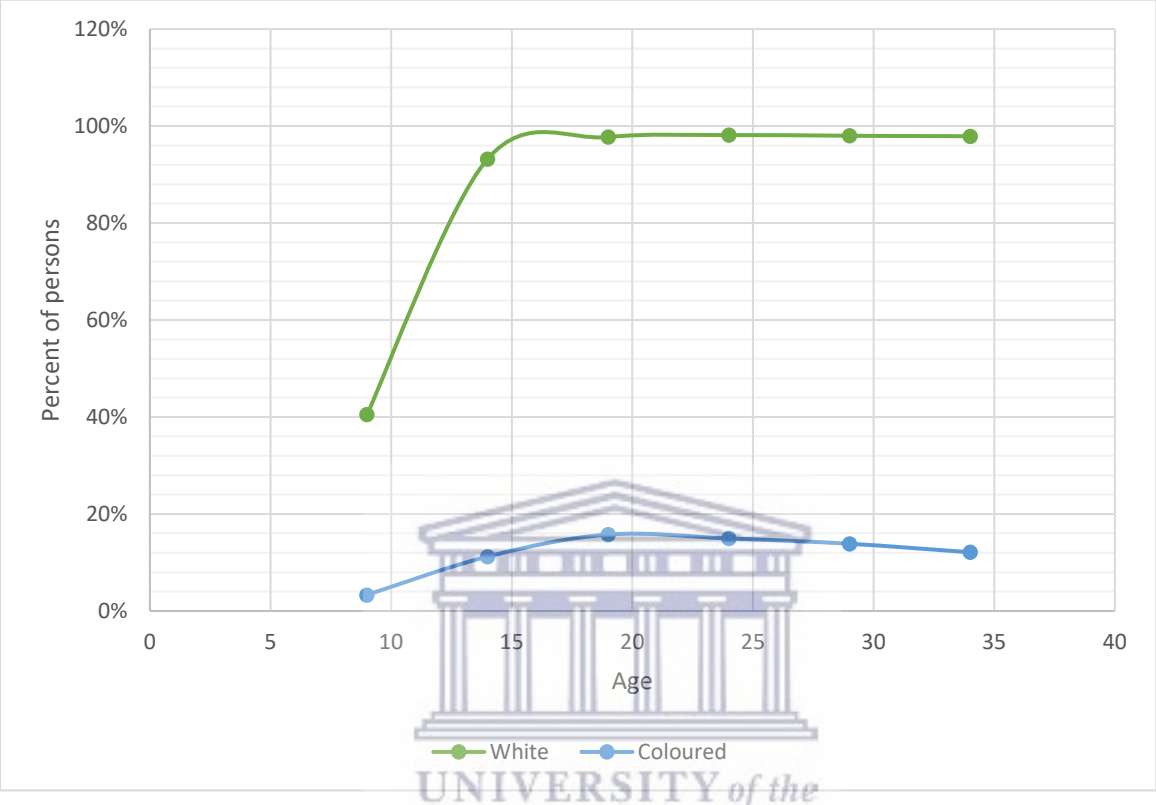

Figure 5: Read and write for the Union of South Africa: White vs Coloured

(Source: Researcher's calculations using South African population Census of 1911)

Even though mission schools were available to individuals other than the European or White population, a clear gap can be seen between the percentages. Literacy was crucial for the aptitude to read the Bible, which was considered as vital to salvation. However, even though missionaries main aim was to spread the gospel and get as many natives to read and write, the reach was clearly under-par than the access European and Whites had to education. With the unification of South Africa came policies directed at segregation based on race, specifically the Destitute Children's Relief Act (Malherbe, 1925). Therefore, the unification saw insignificant change in the internal structure of education systems (Fourie and Swanepoel, 2015). This once more explains the high variation among the different racial populations.

Table 7 presents a more detailed insight into literacy rates for the different provinces of the Union categorised by White and Coloured. As expected, the primary enrolment rates are much

higher for the White population. In all four provinces, White's read and write percentages are above 75%, while the highest per cent for a Coloured group amounts to only 15,14% in the Cape of Good Hope. The lowest per cent for reading and writing also belongs to the Coloured groups in Natal, only 5,69%. The low performance by Coloured could be because the mission stations were teaching not to educate but instead teaching to create employees and labourers (Jedwab *et al.*, 2018). Another contribution to this could be linked to the discriminatory laws, such as the Destitute Children Relief Act of 1895 and Education Act No. 13, to hinder the education for individuals other than White in the Colony.

Table 7: Degrees of literacy for racial groups in the Union of South Africa by Province

Province and Census District	Read and Write (%)	Read-only (%)	Neither Read nor Write (%)
Union of SA			
White	75,93	1,37	22,55
Coloured	12,13	1,83	85,91
Cape of Good Hope			
White	76,19	1,38	22,37
Coloured	15,14	1,99	82,77
Natal			
White	81,59	1,07	17,18
Coloured	5,69	5,01	93,16
Transvaal			
White	75,41	1,28	23,09
Coloured	14,11	2,01	83,75
Orange Free State			
White	73,16	1,72	24,84
Coloured	11,11	2,69	85,87

(Source: Researcher's calculations using South African population Census of 1911)

The degree of literacy for the Union and the Cape of Good Hope is further investigated in Table 8, showing different racial groups separated by gender. This provides a more in-depth view of the inequalities faced within education at the time. From Table 8, it is clear that even though literacy rates regarding reading and writing or read-only varied tremendously among racial groups, the difference was drastically lower within a specific racial group between males and females. In both the Union and the Cape Province, the Coloured population performed

significantly worse than the White population regarding reading and writing. The total White population averaged a 76% rate for reading and writing, whereas the total Coloured population only averaged 14%. However, in the Cape Province, the females, for both race categories, had a slightly higher rate than the males in their respective groups. Even though females achieved a somewhat lead in their read and write rate in the Cape Province, in the Union, White males archived a higher rate than the females, at 76,83% for the former and 74,89% for the latter. Overall, the Coloured females were the most illiterate in the Union, with 85,94% in neither reading nor writing.

Table 8: Degrees of literacy for gender groups in the Union of South Africa and the Cape Province

Province and gender	Read and Write (%)	Read-only (%)	Neither Read nor Write (%)
Union of SA			
White male	76,83	1,47	21,67
White female	74,89	1,51	23,57
Coloured male	12,12	1,81	85,85
Coloured female	12,09	1,86	85,94
Cape of Good Hope			
White male	76,07	1,41	22,45
White female	76,31	1,62	22,29
Coloured male	14,4	1,14	83,51
Coloured female	15,88	2,76	82,03

(Source: Researcher's calculations using South African population Census of 1911)

Table 9 summarises and provides percentages of children between 5 and 14 years of age attending school for the four provinces within the Union. Regarding the Union, the Coloured population only had an 11.31% of children attending school while the White population attained a 64.64%. This again illustrates the lack of education for the Coloured population. In all four provinces within the Union, the White inhabitants achieved above 64%, whilst the Coloured inhabitant's highest per cent was in the Cape Province, only achieving 18.27%. The lowest per cent attained was again by the Coloured residents in Natal, only reaching 5.50%. In contrast, the highest per cent achieved by the White group was in Natal, reaching 75%,

indicating that the province of Natal had the highest inequality with children of age 5-14 years attending schools.

Table 9: School attendance of children age 5-14, the Union of South Africa

Province and Race	No. of children 5-14 years 000's omitted	No. of children 5-14 years at school 000's omitted	Total (%)
White			
Union	280	181	64.64
Cape	139	90	64.75
Natal	20	15	75.00
Transvaal	83	56	67.47
Orange Free State	38	20	52.63
Coloured			
Union	1194	135	11.31
Cape	532	97	18.27
Natal	309	17	5.50
Transvaal	264	15	5.68
Orange Free State	90	6	6.67

(Source: Researcher's calculations using South African population Census of 1911)

4.3. Regression: How South Africa compares with other African countries

As discussed in Chapter 3, the regression results are based on Frankema (2012) to compare South Africa's outcomes with those of the rest of Africa. The independent variable is primary school enrollment, and the main variable of interest is British rule. The first regression results are presented in Table 10.

IA-SA = Including all South Africans
OC-SA = Including only Coloured South Africans

Table 10: Regression results

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	
	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA	IA-SA	OC-SA
British rule	9.90**	7.83**	9.58***	7.81***	13.12***	9.91***	9.25**	7.31**	8.87**	6.42**	9.40***	7.26**	8.37**	6.13**	9.18**	7.93**	10.25***	8.71***
	(3.75)	(3.13)	(3.34)	(2.72)	(4.00)	(3.35)	(3.50)	(2.81)	(3.89)	(3.18)	(3.42)	(2.75)	(3.68)	(2.95)	(3.65)	(3.13)	(3.37)	(2.83)
Malaria ecology	-0.71***	-0.58***					-0.08	0.03	-0.78***	-0.60***			-0.27	-0.18	-0.51*	-0.39*		
	(0.23)	(0.19)					(0.29)	(0.23)	(0.25)	(0.26)			(0.29)	(0.23)	(0.27)	(0.23)		
Population density	2.66	4.89					1.22	3.16	2.76	4.84*	1.16	3.18	2.78	4.73*				
	(3.49)	(2.92)					(3.40)	(2.73)	(3.57)	(2.91)	(3.35)	(2.69)	(3.36)	(2.69)				
Islam core area			-11.56**	-9.87***			-10.81**	-9.57**			-11.30**	-9.39**	-9.91*	-8.33**			-13.01***	-11.79***
			(4.43)	(3.59)			(4.87)	(3.88)			(4.50)	(3.59)	(5.07)	(4.03)			(4.39)	(3.67)
Years of pacified rule			-0.01*	-0.01*			-0.01*	-0.01*			-0.01*	-0.01*	-0.01*	-0.01**	-0.01*	-0.01*	-0.01**	-0.01*
			(0.01)	(0.01)			(0.01)	(0.01)			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(-0.01)
African state cent.			7.74	9.29**			6.56	7.99			7.16	7.76*						
			(5.55)	(4.49)			(6.30)	(5.01)			(5.86)	(4.65)						
Peasant cash crop					3.15	5.45			4.13	5.88*			2.93	4.76				
					(4.41)	(3.63)			(4.03)	(3.27)			(3.82)	(3.05)				
Mining economy					-0.06	-0.06			0.04	0.02			0.06	0.04	0.05	0.03	0.03	0.01
					(0.07)	(0.06)			(0.07)	(0.6)			(0.07)	(0.06)	(0.07)	(0.06)	(0.07)	(0.06)
Cons	14.52	10.62	13.55	10.57	9.79	9.71	13.86	8.80	11.93	8.74	13.07	9.13	14.64	11.26	16.93	15.87	17.23	16.39
Adjusted R2	0.3505	0.359	0.477	0.509	0.203	0.231	0.452	0.501	0.339	0.380	0.465	0.514	0.440	0.491	0.385	0.352	0.454	0.454
R-squared	0.3958	0.40	0.526	0.56	0.404	0.286	0.528	0.572	0.416	0.454	0.527	0.572	0.531	0.576	0.442	0.414	0.505	0.506
n	44	43	44	43	44	43	44	43	44	43	44	43	44	43	44	43	44	43

Dependent variable: primary school enrolment rate
Source: Researcher's calculations

Significant levels: *** p < 0.01, ** p < 0.05, * p < 0.1
Notes: Robust standard errors reported below coefficients.

The above table stipulates the coefficients and their respective standard errors, R^2, number of observations and statistical significance of the explanatory variables about all nine models generated. For each model, 1-9, the regression was run twice to include all 44 countries, including South African White and South African Coloured. The second regression was for all countries, excluding the South African White population.

Columns 1 to 3 display the baseline regression results, primary school enrolment rate, adding the vectors x1, x2, and x3 one by one. Where vector x1 stipulated the endogenous supply-demand conditions, including a dummy variable for British rule, an index for malaria and the natural logarithm of population density. Vector x2, including a dummy variable for the Islam core area, an index for African state centralisation, and an index for the extent of years of pacified rule. Vector x3, showing African demand responses to consolidated colonial rule, including a dummy variable for major export of cash crops and a dummy variable for concentrated mining industries.

Column 1 reveals an adverse effect for malaria ecology, where population density produces a positive signal yet is insignificant. However, malaria ecology is significant, and when excluding the South African white group, the variable decreased from -0.71 to -0.58. The R^2 signifies the percentage variation in the dependant that is explained by the independent variable. For columns 1-3, there is a 20-52% variation in GER supported by the explanatory variables. Model two shows the highest variation; these explanatory variables include Islam core area, year of pacified rule, and African state centralisation. The Islamic core area dummy variable results in a negative sign; however, it are significant. When excluding the South African White population in the regression, the coefficient decreases by almost 2-2.5 percentage points. The African state centralisation variable also becomes significant when excluding the South African White group and increases by 1.5 percentage points.

Columns 4-9 express different specifications to the models in order to study the robustness of the included variables to changes in specification. Column 4 displays the results for all variables, excluding cash crops and the mining economy. The table shows that the Islam core area and years of pacified rule variables are the most significant. Islam has an adverse effect on both regressions. This could be because South Africa did not have a strong Islam influence. Population density has a positive effect, increasing from 1.22% to 3.16% when the South African White group is excluded from the regression. African state centralisation has the

highest positive coefficient in the column, 6.56%, when including all 44 observations and increases to 8% when excluding the South African White group. The model in column 5 excludes the variables Islam core area, years of pacified rule, and African state centralisation revealing positive coefficients for all the variables included in the regression except for malaria ecology, which shows a negative coefficient, yet being significant.

Column 6 shows the predicted signs: population density has a positive, yet small and insignificant effect on GER, Islam core area has a negative and significant effect, however decreasing when the South African White group is excluded, years of the pacified rule also has a slight negative impact on GER and is significant, lastly, African state centralisation has a positive effect, holding all other independent variables constant. Columns 7-9 indicate that the most significant variables are Islam core area and years of pacified rule, both negative. Islam core area, however, has a much higher negative effect, ranging between 8-13%. Years of pacified rule stays constant over all specified regressions, at a -0.01% coefficient, even when excluding the South African white group.

Therefore, the overall results from including South Africa into Frankema's (2012) data set also imply that British policies tended to facilitate expansion mission school expansion compared to French policies, when controlling supply and demand factors. However, when excluding the South African White group from the data, the coefficients overall seemed to be slightly higher.

Table 11: Table for comparison of regression results

	Frankema (2012)	**Including all South Africans**	**Including only Coloured South Africans**	**Difference between coefficients**	
				Including all South Africans	**Including only Coloured South Africans**
Regression 1	8.47**	9.90**	7.83**	-1.43	0.64
Adj. R2	0.43	0.3592	0.359		
Regression 2	7.96**	9.58***	7.81***	-1.62	0.15
Adj. R2	0.21	0.477	0.509		

	Frankema (2012)	Including all South Africans	Including only Coloured South Africans	Difference between coefficients	
				Including all South Africans	Including only Coloured South Africans
Regression 3	10.56**	13.12***	9.91***	-2.56	0.65
Adj. R2	0.27	0.203	0.231		
Regression 4	7.45**	9.25**	7.31**	-1.8	0.14
Adj. R2	0.67	0.452	0.501		
Regression 5	6.35**	8.87**	6.42**	-2.52	-0.07
Adj. R2	0.50	0.339	0.380		
Regression 6	8.05**	9.40***	7.26**	-1.35	0.79
Adj. R2	0.65	0.465	0.514		
Regression 7	6.37**	8.37**	6.13**	-2	0.24
Adj. R2	0.69	0.440	0.491		
Regression 8	6.72**	9.18**	7.93**	-2.46	-1.21
Adj. R2	0.70	0.385	0.352		
Regression 9	8.23**	10.25***	8.71***	-2.02	-0.48
Adj. R2	0.61	0.454	0.454		

(Source: Researcher's calculations, 2021)

Ideally, the South African marginal impact on the British effect needs further investigations. To do this, an interaction effect is required. However, given the small sample size and no variation within the South African context except by race, this causes multicollinearity problems. This means it is impossible to establish the statistical significance of the difference in slopes with the South African Coloured and White populations.

For that reason, a comparison table above was done between the regression coefficients and the adjusted R^2 for Frankema's data, including all South Africans, and data including only Colored South Africans. Furthermore, the differences between the coefficients were also calculated when all South African's were included and when including only Colored South Africa's, which is presented in Table 11. Finally, the data was further investigated, using a fitted graph to plot the results in Figure 6.

A comparison of the adjusted R^2 allows insight into whether additional input variables are contributing to the model. From Table 11, regression two has the highest adjusted R^2 when including all South Africans and only Including Coloured South Africans in the regression. This regression includes only four explanatory variables. These explanatory variables are British, Islam core area, years of pacified rule, and African state centralisation. However, Gujarati and Porter (2009:203) point out that Goldberger criticises the use of comparing R^2 as he states that "R^2has a very modest role in regression analysis, being a measure of the goodness of fit of a sample. Nothing in the classical linear regression model (CLMR) requires R^2 *to* be high. Hence a high R^2/adjusted R^2 is not evidence favouring the model, and a low R^2 is not evidenced against it." Therefore, even though regression two provides the highest adjusted R^2, the other regressions do not provide significant insight.

Given all nine regressions, the adjusted R^2 seems to increase when only including the Coloured population group in the regression. This could be because when including the Whole population, the White group do not perform as normal population groups that were colonised. This is reiterated when comparing the differences between the coefficients. For example, the difference between the coefficients of Frankema and only South African Coloureds is less than 1, while it is larger than 1 when South African whites are included, as stated in Table 11.

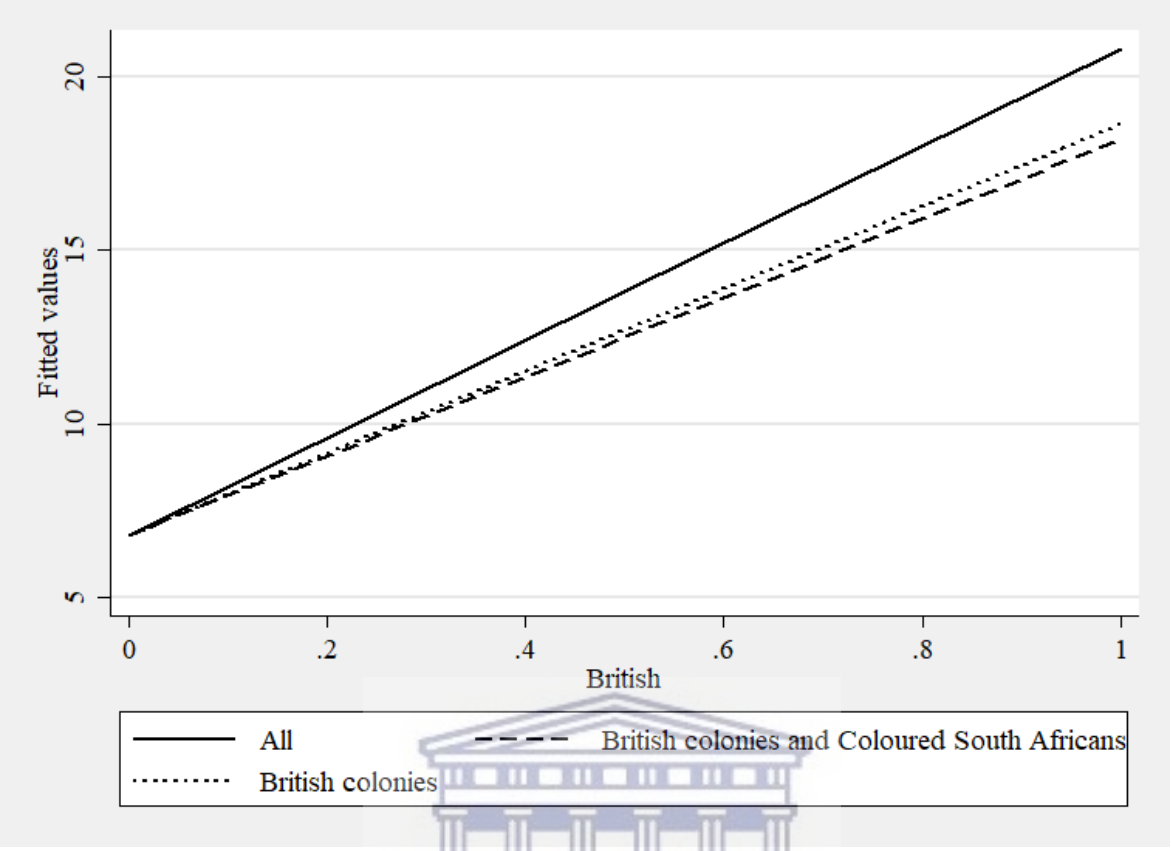

Figure 6: Comparison of coefficients

(Source: Researcher's calculations)

Figure 6 also shows the graph when plotting the different regressions, including and excluding white South Africans, and illustrates that the slope is significantly steeper when including white South Africans. It can, therefore, be assumed that White South African enrolment is much higher than other British colonies. In contrast, the slope and graph with South African coloureds are almost the same as Frankema's estimations and even slightly lower. This suggests that South African Coloured enrolment was lower than other African colonies.

Thus, when trying to determine how South Africa's education outcomes differed from that of other African countries during the colonial period, the results showed that South Africa's colonial education outcomes differed between races when comparing it to other African countries. Firstly, the Coloured population in South Africa was similar to the outcomes observed in other British colonies, which is higher than French or other colonies. Second, the White population in South Africa had significantly higher educational outcomes than the Coloured population in South Africa and the other British colonies. This suggests the racial

inequalities in South Africa existed before Bantu education and was not created under Apartheid.

4.4. Conclusion

The discussion in this chapter investigated several aspects of the colonial environment in the Union of South Africa by digesting the South African population census of 1911. First, the descriptive analysis was presented in Section 4.2 and took an in-depth look at the characteristics of the population and the education differences in the Union of South Africa by different race groups and/or provinces. The descriptive analysis reveals that education in the Union was drastically unequal among the two racial groups, with the White population being far more literate than the Coloured population. When read and write was compared between the two groups for the Union, the White population obtained a rate of almost five times that of the Coloured group by the age of fifteen. Interestingly, the results also showed that Natal was the most illiterate of all four provinces, having a read and write score of 5.69% for the Coloured group. This could be attributed to laws such as the Destitute Children Relief Act, which aimed at solving white poverty by making school compulsory for White children and excluding children of other races. The regression results portrayed in Section 4.3 further investigated the data and supported the education disparities found in the descriptive statistics. First, this section displayed the findings of including the South African population in Frankema (2012) available data. These results showed that when South Africa is included, the assumptions made still hold. The regressions were analysed further using a comparison table and a fitted graph, revealing that the South African Coloured population had similar outcomes to the British colonies. At the same time, the White population group had substantially higher educational outcomes than the Coloured population and other British colonies.

5. CONCLUSION

5.1. Introduction

Despite the importance of studying how historical events affect societies, colonial South Africa has received little attention, especially concerning its education systems. Education is vital in any society for the development of its people, and Christian missionaries acted as a key part in the development and growth of formal mass education in most of colonial Africa, which was inherently connected to mass conversion. However, was this mass education superficial or did it truly aim to enrich the continent's indigenous people? This study, therefore, presents cross-sectional data to determine the educational attainment rates for South Africa regarding the census years 1911. Of the few studies done on colonial South Africa, the focus was primarily on 1849-1865. Therefore, it is imperative to investigate other periods to broaden our understanding of colonial life in South Africa. Additionally, the study expanded on Frankema's work to include South Africa among the other 42 countries used to test the supply and demand factors in an OLS regression.

This is the first local study to offer comprehensible outputs on the education levels for the Union of South Africa for the year 1911. The study examines educational attainment by digesting education returns published by the census and data on the population regarding literacy rates. The population was combined into two groups, White and Coloured, for the analysis. This allowed for a comprehensive insight into the education levels for the Union.

5.2. Review of findings

The study began by introducing the background and rationale to inform this study undertaking. It further detailed and gave evidence of the significant role education has in an economy by exploring the study's theoretical and conceptual frameworks. In addition, by investigating existing literature, the differences in schooling systems in the colonial period were identified. The British and the French investigated two major colonies, both practising vastly different policies to educate their colonies. The British welcomed missionary schooling and overall had higher enrollment rates than the French colonies (Brown, 2000; Benavot and Riddle, 1988; Bolt and Bezemer, 2009). The French imposed centralised education policies and focused more on training an indigenous elite.

Key insights from the findings, which addressed how South Africans' colonial education outcomes differed, were also addressed in the literature. These findings provided an understanding of education in colonial South Africa. South Africa had an active missionary community that focused on educating the population. The findings also expose the education discrimination between the White and Coloured population. Education was merely seen as a mechanism of suppressing non-White individuals.

The study further investigated the education dynamics in South Africa with the descriptive results showing that the Coloured population, making up everyone in the Union who was not European, was substantially undereducated. This is regardless of missionaries attempt to pursue the educating of natives and facilitating their inclusion into society. The White group in the Union performed considerably better regarding reading and writing, showing that the group was substantially more literate than any of the other races in the Union. European or White's had a literacy rate of 75,93%, almost triple that of the Coloured group, only performing at a 20,75% literacy rate. The study also considers the four provinces in the Union, where once again, educational outcomes are much higher for the White population. In all four provinces, White's read and write percentages are above 75%, while the highest per cent for a Coloured group amounts to only 15,14% in the Cape of Good Hope. The lowest per cent for reading and writing also belongs to the Coloured groups in Natal, only 5,69%.

Another approach was taken when the Union and the Cape of Good Hope were further investigated, illustrating the degree of literacy for different racial groups separated by gender. Overall, the Coloured population performed drastically worse in both genders, only reaching a maximum of 16% for the read and write category. In comparison, the White population had an overall rate of 75% for both genders. Notably, the Coloured females have the highest read and write rate at 16%, compared to the males at 14,4% in the Cape of Good Hope. Therefore, performing slightly better than their male counterparts, however, overall in the Union, Coloured females had a slightly lower rate, with a difference of 0.04 compared to the Coloured males. Thus, being the worse performing group in the Union of South Africa.

Lastly, the econometric analysis, which expanded Frankema's model on the supply and demand factors on educational attainment in 42 other African countries, both former French and British colonies, is reviewed. The overall results imply that British policies facilitated the expansion of mission schools concerning the French policies. This is supported by the

regression analysis, which illustrated the results when including all South African's and when only including Coloured South Africans. The coefficients drop when excluding the White South African population, indicating that the South African White population were significantly better enrolled than the British colonies and the South African Coloured population. This was once again proven when plotting the results; the slope was significantly steeper when including the White South African population compared to when only the Coloured South African population was included. This indicates that the South African Coloured were similar to those of British colonies.

A crucial element of economics is understanding the history; therefore, this study sheds some light on the education legacy in South Africa. The population census of 1911 was the first census on the newly formed Union and is vital in building our understanding of South Africa. Education, as mentioned several times in this study, is a fundamental building block in any nation. Education contributes to numerous economic phenomena, especially in developing the Human Capital within a nation, which is intertwined with economic growth and the sustainability of a nation. Education not only aid economies; it fosters a purpose within individuals and gives them the tools to become the best version of themselves.

South Africa and its government should focus their attention on the quality of education provided within the economy. The state's aim should be to increase and equalise educational resources throughout all schools and improve the provision of basic literacy and numeracy skills. Better-qualified teachers can facilitate this, smaller pupil/teacher ratios, and better school management (Fourie, 2013). Additionally, having the government spend more on teacher salaries could also be a way to ensure that better-qualified teachers are entering the schooling systems. Government policies, as a result, should not only focus on high enrolments rates but should aim at providing quality education for all South Africans.

Thus, colonial education in South Africa's history is an avenue for future research. With historical data available, researchers must utilise it to understand better the challenges faced today. By diving into the history of a country, one can uncover fundamental insights into what shaped a nation and why economic challenges might still be present.

5.3. Conclusion

Given that this is one of the limited local studies to examine the Union's Population census of 1911, useful insights are provided in understanding the history of education in South Africa. As it is known, colonialism has had devastating implications and effects on all aspects of African colonies, and South Africa is no exception. As shown in this study, education inequalities continued to persist even with the unification of South Africa in 1910. A review of the past uncovers that residents of the Union of South Africa were still being discriminated against due to their race. Education in the Union was making progress, but unfortunately, White residents were reaping the benefits. Even though literacy rates did increase for non-White individuals during this time, numerous laws still allowed for considerable education disparities among races. This, in turn, has had unfavourable long-term consequences for South Africa. By digesting the first Union census of South Africa, this study has attempted to provide insight into the deeper educational patterns of colonial history in South Africa.

This study offers the first attempt into education in the early twentieth century and compares it with other African countries. However, more can still be done, like the impact of different curriculums and the continued presence of missionary schools. There is also limited evidence on the direct impact of the different educational outcomes on economic outcomes.

Education has been proven to be one of the most compelling mechanisms in decreasing poverty and disparities as it sets the groundwork for sustainable growth. Therefore, nations must improve the quality of education and expand opportunities for all youth, especially those previously disadvantaged. In addition, looking back in history gives one the opportunity to uncover past injustices, give a voice to those who have gone unheard, and quantify, as best as possible, the impact of historical events on the present. Therefore, may history continue to be explored by researchers, as we may find many undiscovered pieces of a nation's puzzle.

6. REFERENCES

Primary data sources:

South Africa (1911). Census 1911, preliminary results. Pretoria: Government Printer, UG32-1911.

South Africa (1920). Census of the European or White races 1918, final report. Pretoria: Government Printer, UG56-1920.

Other data sources:

Frankema, E.H.P. (2012). The origins of formal education in sub-Saharan Africa: was British rule more benign? European Review of Economic History, 16, 335-355.

Literature sources:

Acemoglu, D., Johnson, S. and Robinson, J.A. (2001). The Colonial Origins of comparative development: An empirical investigation. *American Economic Review*, 91(5), 1370-1392.

Ali, S. and Alam, K.J. (2016). An econometric analysis of human capital development and economic growth in Bangladesh. *Journal of Economics and Sustainable Development*, 7(17), 30- 39.

Alkire, S. (2002). *Valuing Freedoms. Sen's Capability Approach and Poverty Reduction*. Oxford: Oxford University Press.

Alkire, S. and Foster, J. (2011). Counting and Multidimensional Poverty Measurement. *Journal of Public Economics*, 95(7), 474–881.

Altbach P.G. and Kelly, G.P. (1984). Education and the colonial experience. New Brunswick (N.J) U.S.A.

Anderson, R.O. (1970). comparative analysis of structure in teacher communicated science content. *Journal of Research in Science Teaching*, 7, 228-240.

Aronowitz, S. and Giroux, H.A. (1987). *Education Under Siege: The Conservative, Liberal and Radical Debate over Schooling.* Routledge, London, 1, 120- 230.

Armstrong, J.C. and Worden, N. (1989). The slaves, 1652-1834, in R. Elphick and H. Giliomee (eds), *The shaping of South African society, 1652- 1840.* Cape Town, Maskew Miller Longman.

Austin, G. (2010). African economic development and colonial legacies. International Development Policy Series, 1, 13-30.

Bakhshi, P., Hoffmann, AM. and Van Ravens, J, (2004). Monitoring EFA from a capabilities perspective: A life skills approach to quality education. *4th Conference of the Capability Approach, Pavia.*

Banerjee, A. and Iyer, L. (2005). History, institutions, and economic performance: the legacy of colonial land tenure systems in India. *American Economic Review*, 95(4), 1190-1213.

Barro, R.J. (2001). Human capital and growth. *American Economic Review*, 91, 12-17.

Barro, R.J. (199l). Economic growth in a cross-section of countries, *Quarterly Journal of Economics*, 106(2), 407-444.

Barro, R.J. and X. Sala-i-Martin, (1995). Economic Growth. *Journal of Economic Dynamics and Control*, Elsevier, 2(4), 895-890.

Barro, R., and Lee, J.W. (2010). A new data set of educational attainment in the world, 1950-2010. *National Bureau of Economic Research Working Paper No. 15902*, Massachusetts.

Bassey, M. (1999) *Missionary Rivalry and Educational Expansion in Nigeria 1885– 1945. Studies in the History of Mission*, (15). Lewiston, NY, Mellen Press.

Baten, J. and Fourie, J. (2015). Numeracy of African, Asians, and Europeans during the early modern period; new evidence from cape colony court registers. *Economic History Review*, 68(2), 632-650.

Baru, S. (1998). Mahbub ul Haq and human development: a tribute. *Economic and Political Weekly*, 33(35), 2275-2279.

Becker, B.S. (1962). Investment in human capital: a theoretical analysis. *Journal of Political Economy*, 70(5), 9-49.

Becker, G.S (1964). *Human Capital*. 2nd edition. Columbia University Press, New York; 1964.

Becker, G.S. (1964). Human capital; a theoretical and empirical analysis, with special reference to education. New York: Columbia University Press.

Becker, G.S. (1992). Fertility and the economy. *Journal of Political Economics*, 5(3), 185-201.

Becker, B. (2021). State-Church synergies in colonial empires: Longitudinal evidence on missionary expansion in Africa. African Economic History Working Paper, 64.

Behr, A. L. (1984a). *New Perspective in South African Education: A Review of Education in South Africa 1652-1984.* Durban: Butterworths.

Behr, A. L. (1984b). *Education in South Africa. Origins, Issues and Trends: 1652-1988*. Pretoria, Cape Town: Academia.

Benavot, A. and Riddle, P. (1988). The expansion of primary education, 1870-1940: trends and issues. *Sociology of Education*, 61(3), 191-210.

Benhabib, J. and Spiegel, M.M. (1994). The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-country Data. *Journal of Monetary Economics*, 34, 145-163.

Bertocchi, G. and Canova, F. (2002). Did colonization matter for growth? An empirical exploration into the historical causes of Africa's underdevelopment. *European Economic Review*, 46(10), 1851-8171.

Bolt, J. and Bezemer, D. (2008). Slavery, Statehood, and economic development in sub-Saharan Africa. Working paper, *African Economic Network* (AEHN).

Bolt, J. and Bezemer, D. (2009). Understanding long-run African growth: Colonial institutions or colonial education?. *Journal of Development Studies*, 45(1), 24-54.

Boshoff, W. and Fourie, J. (2017). When did South African markets integrate into the global economy?. *Studies in Economics and Econometrics*, 4(1), 19-31.

Bosworth, B. and, Collins, S (2003). The empirics of Growth: an update. *Brookings Papers on Economic Activity*, 34(2), 113-206.

Braun, M. and Müller, W. (1997). Measurements of education in comparative research. *In Comparative Social Research*, 16, 165-200.

Brown, D.S. (2000). Democracy, colonization, and human capital in Sub-Saharan Africa. *Studies in Comparative International Development*, 35(1), 20-40.

Burgess, S. (2016). Human capital and education: state of the art in the economics of education. The University of Bristol, Discussion paper, No.9885.

Buzzelli, C.A. (2015). The capabilities approach: Rethinking agency, freedom, and capital in early education. *SAGE*, 16(3) 203-213.

Christie, P. (1992). From Crisis to Transformation. *Australian Journal of Education*, 36(1), 38-52.

Christopher, A.J. (2010). A South African Domesday Book: the first Union census of 1911. South African Geographical Journal, 92(1), 22-34.

Christopher, A.J. (2011). The Union of South Africa censuses 1911-1960: An incomplete record. Historia, 56(2), 1-18.

Christopher, A.J. (2015). Educational attainment in South Africa: a view from the census 1865-2011. History of Education, 44(4), 503-522.

Cilliers, J. and Fourie, J. (2012). New estimates of settler life span and other demographic trends in South Africa, 1652-1948. *Economic History of Developing Regions*, Taylor and Francis Journals, 27(2), 62-82.

Connelly, R., Gayle, V., and Lambert, P.S. (2016). A review of occupation-based social classification for social survey research. Methodological Innovations, 9(1), 1-14.

Cogneau, D. (2003). Colonisation, school and development in Africa: an empirical analysis. DIAL Document de Travil.

Cogneau, D. and Moradi, A. (2014). Borders that divide: education and religion in Ghana and Togo since colonial times. *Journal of Economic History*, 74 (3), 694-729.

Cohen, D. and Soto, M. (2007). Growth and human capital: Good data, good results. *Journal of Economic Growth*, 1(3), 113-207.

Coyle, D. (2015). *GDP: A Brief but Affectionate History*. Princeton: Princeton University Press.

Cowan, G.L., O'Connell, J., and Scanlon, D.G. (1965). *Education and nation-building in Africa*. Pall Mall Press; London.

Crafts, N. (2009). Economic history matters. Working paper, the University of Warwick. *Economic and Social Research Council*. 58, 5-12.

Craft, N. (2012). Creating competitive advantage: policy lesion from history. CAGE Online Working Paper Series, Competitive Advantage in the Global Economy.

Crowder, M. (1970). Indirect rule - French and British style. In R.O Collins (Ed.), *Problems in the history of colonial Africa, 1860-1960*. New Jersey: Prentice-Hall, Inc.

Dakar Framework for Action. (2002). Education for all: meeting and collective commitments. World Education Forum.

Dalkilic, M. and Vadeboncoeur, J.A. (2016). Re-framing inclusive education through the capability approach: An elaboration of the model of relational inclusion. *Global Education Review, 3*(3). 122-137

Dell, M., Jones, B., and Olken, B. (2008). Climate shocks and economic growth: evidence from the last half-century. NBER Working Paper 14132, National Bureau of Economic Research.

Drèze, J. and Sen, A. (2002). *India; Development and participations*. Oxford. The Oxford University Press, 184- 195.

Drèze, J. and Sen, A. (2013). *An Uncertain Glory. India and Its Contradictions*. London: Alan Lane.

De Zwart, P. (2011). Real wages at the Cape of Good Hope: a long-term perspective, 1651-1912. Stellenbosch, Economics Society of South Africa conference.

Duff, S.E. (2011). Saving the child to save the nation: poverty, whiteness and childhood in the Cape Colony, 1870-1895. *Journal of Southern African Studies*, 37(2), 229-245.

Du Plessis, J. (1965). *A History of Christian Missions in South Africa.* New York: Longmans, Green and Co.

Du Plessis, S. and Du Plessis, S. (2012). Happy in the service of the Company: the purchasing power of VOC salaries at the Cape in the 18th century. *Economic History of Developing Regions*, 27.

Du Plessis, S., Jansen, A. and von Fintel, D., (2015). Slave prices and productivity at the Cape of Good Hope from 1700 to 1725: Did everyone win from the trade?. *Cliometrica*, 9(3), 289-33.

Dupraz, Y. (2015). Freanch and British colonial legacies in education: a natural experiment in Cameroon. *The Journal of Economic History*, 76, 628-668.

Easterlin, R.A. (1981). Why isn't the world developed? *The Journal of Economic History*, 41(1), 1-17.

Ekama, K. and Ross, R. (2021). The Emancipation of the Enslaved in the Cape Colony: Historiography and Introduction. *Journal of Southern African Studies*, 47(3), 405-416.

Ekama, K., Fourie, J., Heese, H. and Martin, L. 2021. When Cape Slavery Ended: Introducing a New Slave Emancipation Dataset. *Explorations in Economic History*.

Fedderke, J.W., de Kadt, R. and Luiz, J.M. (2000). Educating South Africa: the failure to address the 1920-1993 legacy. *International Review of Education*, 46(4), 257-280.

Feyrer, J. and Sacerdote, B. (2009). Colonialism and modern income: Islands as natural experiments. The Review of Economics and Statistics, 91(2), 245-262.

Fleurbaey, M. (2009). Beyond GDP: The Quest for a Measure of Social Welfare. *Journal of Economic Literature*, 47(4), 1029–75.

Fourie, J. (2013). The remarkable wealth of the Dutch Cape Colony: measurements from eighteenth-century probate inventories. *The Economic History Review*, 66(2), 419-448

Fourie, J., Ross, R. and Viljoen, R. (2014). Literacy at South African mission stations. *Journal of Southern African Studies*, 40(4), 781-800.

Fourie, J. and Green, E. (2015). The Missing People: Accounting for the productivity of indigenous populations in Cape Colonial History. *Journal of African History*, 56(2), 195-215.

Fourie, J. and Swanepoel, C. (2015). When selection trumps persistence. The lasting effect of missionary education in South Africa. *Tijdschrift voor Sociale en Economische Geshiedenis/The Low Countries Journal of Social and Economic History*, 12(1), 1-29.

Gallup, J. and Sachs, D.J. (2000) The economic burden of malaria. *The American Journal of Tropical Medicine and Hygiene*, 62(2), 85-91.

Gellego, F.A and Woodberry, R. (2010). Christian missionaries and education in former African colonies: how competition mattered. *Journal of African Economic*, 9(3), 294-329.

Gifford, P. and Weiskel, T. (1978). African education in a colonial context: French and British styles. New Haven University press, 663-711.

Glaeser, E.L., La Porta, R., Lopes de Silanes, F., and Shleifer A. (2004). Do institutions cause growth? *Journal of Economic Growth*, 9, 271-300.

Grant, C. (2017). *The contribution of education to Economic growth. Institute of Development Studies.* K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.

Gujarati, D.N, and Porter, D.C. (2009). *Basic Econometrics*. 5th ed. McGraw-Hill Irwin, New York.

Gwaindepi, A. and Easton, A. (2020). Colonial extractivism and development: The state and private diamond extraction at the British Cape Colony, 1870–1910. *The Extractive Industries and Society*, 8(3), 3-12.

Haas, M. and Frankema, E. (2018). Gender, ethnicity, and unequal opportunity in colonial Uganda: European influences, African realities, and the pitfalls of parish register data. *The Economic Review*, 71(3), 960-994.

Hanson, H.E. (2010). Indigenous adaptation: Uganda's village schools, 1880-1937. *Comparative Education Review,* 54(2), 1557-170.

Hanushek, A.E. and Kimko, D.D. (2000). Schooling, labour-force quality, and the growth of nations. *American Economic Review*, 90(5),1185-1199.

Hanushek, E. A., and Woessmann, L. (2012). Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation. *Journal of Economic Growth,* 17(4), 267-321.

Hinchcliffe, G. and Terzi, L. (2009). Introduction to the special issue capabilities and education. *Studies in Philosophy & Education*, *28*, 387-390.

Hoffmann, A.M. (2005). *The capability approach and educational policies and strategies: Effective life skills education for sustainable development.* UNESCO.

Hopkins, A.G. (2009). The new economic history of Africa. *The Journal of African History*, 50(2), 155–177.

Horrell, M. (1968). *Bantu Education to 1968.* Johannesburg: South African Institute of Race Relations.

Horrell, M. and Draper, M. (1964). *A Survey of race relations in South Africa: 1963*. South African Institute of Race Relations, Johannesburg.

Iannaccone, L. (1998). Introduction to the Economics of Religion. *Journal of Economic Literature*, 10(3), 1465–96.

IDCR. (2013). *The human rights approach to sustainable development: Environmental rights, public participation, and human security.* Insights Series 2.

IIASA (2008) Economic Growth in Developing Countries: Education Proves Key, Policy Brief. *International Institute for Applied Systems Analysis.*

Jamison, D.T., Hanushek, E.A., and Jamison, E.A. (2007). The effects of education quality on morality decline and income growth. *Economics of Education Review*, 26(2), 771-785.

Jedwab, R., Meier zu Selhausen, F., and Moradi, A. (2018). The economics of missionary expansion: evidence from Africa and implication for development. Centre for the Study of African Economics, working paper, 1028/07.

Jones, C. I. and Romer, P. M. (2009). The new Kaldor facts: Ideas, intuitions, population and human capital. *NBER Working Paper Series, Working Paper 15094*, Cambridge, MA.

Kalinga, O. (1985) 'Colonial Rule, Missionaries and Ethnicity in the North Nyasa District, 1891–1938', African Studies Review, 28 (1), 57–72.

Keltie J.S. (1896). The South African Republic. *The Statesman's Yearbook.* Palgrave Macmillan, London, (940-944).

Kitaev, I. (1999) Private Education in Sub-Saharan Africa. Mechanisms and Strategies in Educational Finance. International Institute for Educational Planning/UNESCO.

Krueger, A. and Lindahl, M. (2001). Education for growth: why and for whom? *Journal of Economic Literature*, 39(4), 1001-1134.

La Porta, R., Lopez-de-Dilanes, F., Shlefifer, A., and Vishny, R.W. (1997). Legal determinants of external finance. *The Journal of Financ*e, 52(3), 1131-1150.

Lee, A. and Schultz, K.A (2012). Comparing British and French Colonial Legacies: A Discontinuity analysis of Cameroon. *Quarterly Journal of Political Science*, 7, 1-46.

Lewis, D. (1973). Anthropology and colonialism. *Anthropology*, 14(5), 581-602.

Lipset, S.M. (1960). *The political man: the social basis of modern politics*. New York: Doubleday.

Links, C., Fourie, J., and Green., E. (2020). The substitutability of slaves: evidence from the eastern frontier of the Cape Colony. *Economic History of Developing Regions*, Taylor and Francis Journals, 35(2), 98-120.

Lloyd, C.B., Kaufman, C.E., and Hewett, P. (2000). The spread of primary schooling in sub-Saharan African: implications for fertility change. *Population and Development Review*, 26, 483-515.

Lucas, R. E. (1988). On the mechanics of economic development. Journal of Monetary Economics 22, 3–42.

Magee, G., Greyling, L. and Verhoef, G. (2016). South Africa in the Australian Mirror: Per Capita Real GDP in the Cape Colony, Natal, Victoria, and New South Wales, 1861–1909. *The Economic History Review*, 69(3), 893-914

Malherbe, E.G. (1925). *Education in South Africa: 1652-1922*. Cape Town: Juta.

Mankiw G., Romer, D. and Weil, D.N. (1992). A contribution to the empirics of economic growth, *The Quarterly Journal of Economics*, 107(2), 407-427.

Maringe, F. (2015). Higher education market. *International Encyclopedia of Social and Behavioral Sciences (Second edition*). 850-861.

Maxwell, D. (2015). The missionary movement in Africa and world history: mission sources and religious encounter. *Historical Journal*, 58(4), 915-927.

Meier zu Selhausen, F. (2014). Missionaries and female empowerment in colonial Uganda: New evidence from Protestant marriage registers, 1880–1945. *Economic History of Developing Regions*, 29(1), 74-112.

Meier zu Selhausen, F. (2019). Mission, education and conversion in colonial Africa. African Economic History Working paper series, 48.

Michalopoulos, S. and Papaioannou, E. (2016). The long-term effects of the scramble for Africa. American Economic Review, 106(7), 1802-1848.

Miner, J. (1974). Schooling, experience, and earnings. *National Bureau of Economic Research.* Columbia University Press, New York.

Molteno, F. (1984). The origins of Black Education: The Historical Foundations of the Schooling of Black South Africans, in *Apartheid and Education: The Education of South Africans*, edited by P. Kallaway. Johannesburg: Raven Press

Montgomery, M. (2017). Colonia legacy of gender inequality: Christian missionaries in German east Africa. *Politics and Society*, 45(2), 229-254.

Munshi, K. and Wilson, N. (2008). Identity, Parochial Institutions, and Career decisions: linking the past to the present in the American Midwest. NBER Working Paper 13717, National Bureau of Economic Research.

Ndille, R, and Litt, D. (2018). British and French implementation of colonial education policies in Camerron 1916-1961: A comparative analysis. I*nternational Journal for Research in Education Studies,* 4(5), 5-18

Nelson, R.R., and Phelps, E.S. (1966). Investment in Humans, Technological Diffusion and Economic Growth. *American Economic Review*, 56(2), 69-75.

Nielsen, L. and Axelsen, D.V. (2017). Capabilitarian Sufficiency: Capabilities and Social Justice. *Journal of Human Development and Capabilities*, 18 (1), 46–59.

Nunn, N. (2009). The Impact of History for Economic Development. *The Annual Review of Economics*, 1, 67-89.

Nunn, N. (2014). *Gender and missionary influence in colonial Africa. Africa's Development in Historical Perspective*. New York, Cambridge University Press.

Nunn, N. and Wantchekon (2011). The slave trade and the origins of mistrust in Africa. *American Economic Review,* 101 (7), 3221-3252.

Nussbaum, M.C. (2011). *Creating capabilities*. Harvard University Press, Cambridge.

Nwanosike, O.F., and Onyije, L.E. (2011). Colonialism and education. Journal of Social Sciences, 2(4), 42-46.

Ocheni, S. and Nwankwo, S.C. (2012). Analysis of colonialism and its impact in Africa. Cross-Cultural Communication, 8(3), 46-54.

Odden, A. and Clune, W.H. (1998). School finance systems: ageing structure in need of renovation. *American Educational Research Association*, 20(3). 157-177.

Odit, M.P., Dookhan, K.D. and Fauzel, S.F. (2010). The impact of education on economic growth: The case of Mauritius. *International Business and Economics Research Journal*, 9(8), 142-150.

Omer-Cooper, J. D. (1994). *History of South Africa.* Cape Town: David Phillip.

Ozturk, I. (2001). The role of education in economic development, a theoretical perspective. *Journal of Rural Development and Administration*, 13(1), 39-47.

Pell, E.G. (1938). *300 Hundred Years of Education in South Africa.* Cape Town: Juta & Co.

Pretorius. D.M. (2019). Private schools in South African legal history. Fundamina 25(2), 94-134.

Pritchette, L. (2006). Does learning to add up add up? The returns to schooling in aggregate data. *Handbook of the Economics of Education*, 1, 636-680.

Psacharopoulos, G. (1994). Returns to investment in education: a global update. *World Development*, 22(9), 1325-1343.

Ramagaga, S.M. (1988). The contribution of the Holy Cross Sisters to black schooling in Alexandra, Johannesburg, with particular reference to the period 1950-1970. *Unpublished MEd dissertation. University of the Witwatersrand, Johannesburg.*

Riddell (2007). The impact of education on economic and social outcomes: an overview of recent advances in economics. Perspectives on Human Capital Development, McGill-Queen's University Press, 55-100

Romer, P. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, 94(5), 1002-1037.

Romer, P. (1990). Endogenous technological change. Journal of Political Economy 99(5, pt. II), S71–S102.

Robeyns, I. (2005). The Capability Approach: A Theoretical Survey. *Journal of Human Development*, 6(1), 93–117.

Robeyns, I. (2006). Three models of education: rights, capabilities and human capital. *Theory and Research in Education*, 4(1), 69-84.

Robeyns, I. (2016). Capabilitarianism. *Journal of Human Development and Capabilities*, 17(3), 397–414.

Robeyns, I. (2017). Wellbeing, freedom, and social justice: the Capability approach re-examined. Cambridge, UK: Open Book Publishers.

Robeynes, I. and Byskov, M.F. (2020). *The Capability approach*. The Sandford Encyclopaedia of Philosophy. Metaphysic Research Lab, Sandford University.

Rosen, S. (1983). Specialization and human capital. *Journal of Labour Economics*, 1(1), 43-49.

Schultz, T. (1961). Investment in Human Capital, American Economic Association, 51, 1-17.

Schultz, T. W. (1975). The value of the. Ability to deal with disequilibria. *Journal of Economic Literature*, 13(3), 827-846.

Schultz, T. (1992). The role of education and human capital: an empirical assessment, conference: economic growth in the world economy. *The Kiel Institute for World Economics*.

Sen, A. (1985). *Commodities and Capabilities*. Amsterdam: North-Holland.

Sen, A. (1999) *Development as Freedom*. Oxford: Oxford University Press.

Seroto, J. (1999). A historical perspective of formal education for black people in the rural areas of South Africa with a special reference to the school in the Northern province. Masters dissertation, University of South Africa.

Shingler, J. D. (1973). Education and the political order in South Africa, 1902- 61. Unpublished dissertation, Yale University, Ann-Arbor.

Smith, A. (1776). *The Wealth of Nations*. Oxford, England.

Smith, T.W. (1995). Some aspects of measuring education. *Social Science Research*, 24, 215-242.

Sokoloff, K.L. and Engerman, S.L. (2002). Institutions, factors endowments, and paths of development in the new world. *Journal of Economic Perspective*, 14(3), 217-232.

Solow, R.M. (1957). Technical Change and the Aggregate Production Function, *Review of Economics and Statistics*, 39(3), 312-20.

Stiglitz, J.E., Sen, A. and Fitoussi, J.P. (2010). *Mismeasuring our lives: why GDP doesn't add up: the report.* Commission on the Measurement of Economic Performance and Social Progress. New York New York Press.

Sutton, F.X. (1965). Education and the making of modern nations. *Education and Political Development*, Princeton University Press.

Summers, C. (2016). *Education and Literacy*. Oxford Handbook of Modern African History, 319-337. Oxford: University of Oxford Press.

Terzi, L. (2008). *Justice and equality in education: A capability perspective on disability and special educational needs*. London: Continuum.

Terzi, L. (2014). Reframing inclusive education: Educational equality as capability equality. *Cambridge Journal of Education, 44*, 479-493.

Thompson, L.M. (1990). *A history of South Africa.* Yale University Press.

Trostel, P., Walker, I. and Woolley, P. (2002). Estimates of economic return to schooling for 28 countries. *Labour Economics*, 9(1), 1-16.

UNESCO (2012). UNESCO the Education for All Global Monitoring Report.

UNICEF. (2007). *A human's rights-based approach to education*. United Nations Educational, Scientific and Cultural Organization. New York, USA.

United Nations. (2020). *The Sustainable Development Goals Report 2020*. United National Statistic Division Development Data and Outreach, New York.

USAID and Pact's centre of Excellence on Democracy, Human Rights, and Governance. (2018*). Applying Rights-based approach: A practical how-to note on integration principles of empowerment into almost any development activity*. Washington, DC, USAID, the Human Rights Support Mechanism, and Pact.

Walker, M. and Unterhalter, E. (2007). *Amartya Sens's capability approach and social justice in education.* New York, Palgrave Macmillan.

Wantchekon, L., Kla, M, and Novta, N. (2015). Education and human capital externalities: evidence from colonial Benin. *Quarterly Journal of Economics*, 130(2), 703-765.

Welsh, F. (1998). *A history of South Africa.* London: Harper Collins.

White, H. (1996). Adjustment in Africa. *Development and Change, Institution of Social Studies* 27, 785-810.

Woessmann, L. (2003). The importance of school systems: evidence from international differences in student achievement. The Journal of Economic Research, 30(3), 10-30.

Woodberry, R. (2004). The shadow of empire: Christian missions, colonial policy, and democracy in postcolonial studies. PhD Dissertation, University of North Carolina.

Wolheim, O.D.(1943). Crisis in Native Education. *Race Relations*, 10(2), 37-4.

World Bank Report (2018). Learning to realise education's promise. International Bank of Reconstruction and Development/The World Bank, Washington DC.

7. APPENDIX

7.1. Appendix 1: List of countries included in Regression model.

1	Angola
2	Benin
3	Botswana
4	Burkina Faso
5	Burundi
6	Cameroon (Fr.)
7	Central African Republic
8	Chad
9	Congo, Rep.
10	Congo, D.R.
11	Côte d'Ivoire
12	Djibouti
13	Equatorial Guinea
14	Ethiopia and Eritrea
15	Gabon
16	Gambia
17	Ghana
18	Guinea
19	Guinea Bissau
20	Kenya
21	Lesotho
22	Liberia
23	Madagascar
24	Malawi
25	Mali
26	Mauritania
27	Mauritius
28	Mozambique
29	Namibia
30	Niger
31	Nigeria
32	Rwanda
33	Sao Tome & Principe
34	Senegal
35	Sierra Leone
36	Somalia (Br.)
37	South Africa
38	Swaziland
39	Sudan
40	Tanzania

41	Togo
42	Uganda
43	Zambia
44	Zimbabwe