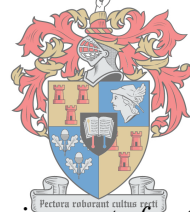


The Evolution of Occupational Structures in South Africa 1875-1911: An analysis of the Effects of the Resource Curse and Blessing

by
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This thesis presented in fulfilment of the requirements for the degree of Master of Economics in the Faculty of Economic and Management Sciences at Stellenbosch University

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March 2018

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Abstract

This dissertation investigates the evolution of the occupational structure of South Africa in the late nineteenth and early twentieth centuries to improve our understanding of the impact of the mineral revolution on the living standards of black South Africans during that period. To achieve this, we unpack the critical relationship between the production and occupational structure of South Africa and the degree of economic development. The robustness of the relationship is examined using the PST (primary, secondary, tertiary) system at a provincial and national level with census records from 1875 to 1951. The empirical evidence suggests that the mineral revolution that occurred during that period had a profound effect on the South Africa economy, in particular infrastructural development and urbanization. Moreover, as South Africa became more economically affluent, primary sector participation decreased resulting in a concomitant increase in secondary and tertiary sector activity, in particular for white males. Black males' and females' occupational structure, conversely, experienced an increase in primary sector participation relative to the other two sectors. The economic development of South Africa, however, is correlated with the emergence of the black middle class arising from the educational efforts of the Christian missionaries.

Key words: Occupational Structure, economic development, mineral revolution, middle class, urbanization, primary, secondary, tertiary.

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Introduction

The discovery of minerals, first diamonds and then gold, had a profound effect on the South African economy in the late nineteenth and early twentieth centuries. Just how, and to what extent, it shaped the structure of economic activity for black South Africans is, however, less well understood, due to a lack of statistical evidence. This dissertation uses the occupational structure of the Union of South Africa to explore this matter, improving our understanding of the impact of the mineral revolution on the living standards of black South Africans during the late nineteenth and early twentieth centuries. This is because, as Austin (2016) argues, the changing nature of occupational structure correlates with economic development. In many countries it reflects the changing resource endowment of the country.

Urbanization is one consequence of economic development. The economic growth and development of many countries hinge on their ability to urbanize, as urbanization provides opportunities for specialization, economies of agglomeration and concentration of demand. South Africa in its infancy of industrialization was known for its rapid economic growth from a standing start. Within a 30-year period from 1867, 4,000 miles of railway line had been laid, ensuring rapid transport from harbour cities, where the shipping lines ended, to the mining towns that had sprung up virtually overnight. Johannesburg within ten years of its founding was larger than Cape Town, which was then 250 years old (Wilson, 2009). The occupational structure captures the process of urbanization, specialization and concentration to an extent that was not possible before.

I argue that the changing nature of occupational structure correlates with economic policy and economic development. When South Africa's industrialization gained momentum the effects of colonization became more turbulent and unpredictable, particularly for black South Africans. The Glen Grey Act of 1894 and hut and poll taxes had the overriding mission of forcing Africans out of the native reserves where they were relatively comfortable to reside and reluctant to enter the wage economy, into the colonial economy. These policy instruments, particularly the Glen Grey Act, systematically limited the number of Africans who could live on and own their own land (Bouch, 1993). Furthermore, they pushed those who were deemed unqualified to acquire land to leave the Glen Grey district and go look for work on white-owned farms or the mines. The impact of these policies is reflected in the occupational structure of 1911 with African labour predominantly participating in the primary (mining and agricultural) sectors. However, what the

occupational structure cannot reveal is the rupture these policies caused on the socioeconomic life of Africans. Charles van Onselen, in *New Babylon and New Nineveh: Everyday life on the Witwatersrand 1886-1914* (2001), describes the human consequences of the profound social, economic and political changes that transformed South African after the discovery of gold.

The Industrial Revolution in Britain fostered a new sense of national identity and civic pride despite the grim employment and living conditions for the poor and working classes (Shaw-Taylor, 2009). Initially the mineral revolution in South Africa was a dynamic process. There were many opportunities for black people to benefit from mining. For example, we know Basutoland benefited, and there were good reasons for many black people from across Southern Africa to enlist as workers (and sometimes even as owners of plots) on the mines. But this changed, as the factor endowments changed, and the structure of ownership was monopolized. Secondly, the legislative arm of the state served to skew the distribution of resources through discriminatory laws and practices. This was largely a consequence of whites securing the political franchise and political power (exclusively so in the Transvaal, Orange Free State and Natal, and overwhelmingly so in the Cape Province) after unification in 1910. However, Africans resisted the imposition of these laws and practices. The Bambatha rebellion of 1906 in Natal was a response to poll taxes that attempted to stop the entry of the black workforce into the gold mines of the Witwatersrand and increase the supply of agricultural labour in Natal (Redding, 2000). The resistance shows that, at least after unification, the South African occupational structural was stratified along relatively rigid racial lines. And yet, the industrial revolution also brought about – or significantly contributed to - the emergence of the black middle class, albeit small and difficult to identify until now.

The nature of South African society, where race, class, ethnic, linguistic and national cleavages overlap, often make it difficult to understand the process that led to industrialization. We can perhaps better grasp the challenge if we shed light on what occurred in other countries that industrialized. Firstly, capital accumulation in labour repressive economies is not uniquely a South African phenomenon. They can be found in Imperial Germany, Tzarist Russia when emancipating the serfs, and the pre-Civil War American South. These structures accumulated capital at rates similar to those of South Africa (Trapido, 1970) . Methods of coercion from Imperial Germany, such as agrarian employers being granted the legal right for their employees to be completely

obedient, could also be found within the South African agricultural economy. The relationship between ‘gold and maize’ has a counterpart in the ‘marriage of iron and rye’: both successfully suppressed political freedoms to further their economic interests (Trapido, 1970). Abel Gwaindepi (2017) demonstrates a similar relationship between diamonds and railways, how government incurred huge debt to build the infrastructure to the benefit of the owners of the diamond fields. In addition, gold mining, similar to the United States cotton plantations, was responsible for driving economic growth rates, and gold and cotton were major stimulants for manufacturing industries in their respective countries.

The abovementioned comments demonstrate that the South African form of labour repression in the period under discussion is not uncommon. However, where South Africa is peculiar is its failure to provide an improvement in material and social conditions for its African population, particularly since the formation of the Union in 1910. According to Trapido (1970), all major capitalist societies have in the long run accepted free association, and the ideal of a single education and legal system applicable to all citizens. South Africa only achieved some of these ideals indeed in the long run (1994). The fissures created by these systems of labour repression, however, left the country grappling with difficulty the resources presented. On the one hand, the resources blessed the country with high levels of economic growth that benefited a certain section of society and promoted infrastructural development. On the other, it can be regarded as a curse that ruptured the fabric of the majority black community and left the people destitute.

In South Africa the literature on using occupational structures as a way of explaining economic and social changes is scarce. There are several challenges, in my view, that may have deterred scholars from pursuing research in this field. Firstly, no systematic organization of census records occurred, or has been digitized. Where census records do exist, they are scattered around the country. Secondly, the data within the census records is not consistent over time. For example, classification methods vary within the different colonies before 1910. Given that South Africa was under British rule, however, the pre-Union Cape Colony benefitted from using data collection methods used by Britain when the first official census records were collected in 1865. In addition, as the world converged towards standardized processes of collecting data in the twentieth century, South Africa would stand to benefit by virtue of being a British colony.

The inconsistent nature of the data and collection thereof among different racial groups has forced me to think creatively about how to present the evolution of occupational structure from 1875. Firstly, I investigate the nineteenth century evolution of the occupational structure of the Cape Colony using census records from 1875-1911 (Chapter 3). The reason for focusing only on the Cape Colony during the nineteenth century is the lack of systematic data for the other colonies and Boer republics that ultimately comprised the Union of South Africa from 1910. South Africa had also not achieved unity among these colonies and republics. Although Natal was a British colony, the other two territories that were to be incorporated in the Union of South Africa in 1910 were Boer republics. Even within this group, there were major differences between the Orange Free State and the Transvaal (Du Plessis and Du Plessis, 2017). Second, I discuss the occupational structure of the Union of South Africa from its establishment in 1910 onward. The discussion on the occupational structure of the Union gives a snapshot of where the development of the country was at the formation of the Union. It was the first census that included all South Africans (Chapter 4). Third, I use a new data set to investigate the evolution of the occupational structure in the twentieth century from 1911-1951 (Chapter 5). These sections together should provide a comprehensive analysis of the evolution of the occupational structure of South Africa from the discovery of the minerals to the start of apartheid.

Chapter 1: A history of colonial censuses in South Africa

The literature of occupations (and especially of occupational structures) mostly draws its data from published census records. This means the directors of the census have already processed and consolidated information into groupings. When this is the case the options open to investigators is narrow compared to sources at the individual-level. For example, scholars using nineteenth-century South African census records are restricted by the solutions adopted by the census authorities at the time. There were many men who were employed on the mines as miners, diggers, mine labourers, and reduction work employees. The census records often lumped them into a single category. It is impossible to disentangle from the census records (which are essentially secondary sources) whether an individual named all these joint occupations as opposed to simply stating that he was involved in one of them. There is thus greater uncertainty when the enumerator books (the primary sources on which the published census records are based) are missing and the opportunities available with individual-level data go unexplored in published census material.

The fundamental problem facing economic historians who wish to study and (re)construct the evolving occupational structure of the South African economy between 1886 (roughly the start of the mineral revolution) and 1948 (the formal start of ‘apartheid’) is the ‘irregular and unsystematic coverage’ during the nineteenth century (Christopher, 2011:3). Before the formation of the Union, the Cape of Good Hope conducted the first census in 1865, followed by 1875 and 1891 censuses. Secondly, the Orange Free State, borrowing from the scientific methods adopted in the Cape of Good Hope, initiated their census in 1880 and 1890. Thirdly, the South African Republic (Transvaal) followed in 1890. Natal followed in 1891 with a partial enumeration. Aside from the Cape Colony, these censuses were restricted to the white population¹. Finally, after the South African War of 1899-1902, all four colonies undertook censuses in 1904 but, according to Christopher (2011:3-4), the results were presented based on the ‘views of the four individual commissioners’ and were lacking in detailed coordination of pre-federation records.

¹ Race classification has varied across the different census undertakings. This paper adopts, where appropriate, the present post-apartheid, nomenclature of African, Coloured, Indian and White.

The state undertook a ‘comprehensive enumeration’² of the entire population at the formation of the Union of South Africa in 1910 that provided reliable data on demographic statistics on the number of people by sex, age and marital status; but also economic information on occupation, education and income and more contentiously on issues of identity including race, language and religion (Christopher, 2011).

The period after the formation of Union is the most unsystematic period for the collection of census records. The underlying factors that were driving the lack of a scientific approach were products of unforeseen and state driven initiatives. Firstly, the outbreak of the First World War caused a rescheduling of the next census to 1918 and only whites were enumerated. Secondly, the census of 1921 was lacking in uniformity as the South African state devised different questionnaires for Africans residing in the rural areas and those in the remainder of South Africa. This was after the conference of Commonwealth countries met to coordinate programs for the 1921 census³. Secondly, the 1926 census was done in similar fashion to 1918, on a whites-only basis. Thirdly, the 1931 census was supposed to be a comprehensive census of the entire population but was again reduced to a whites-only initiative. However, the internal crisis caused by the Great Depression forced a postponement to 1936 but maintained the racial differentiation in questionnaires that had been adopted in 1921. In addition, during the Second World War, the 1941 census enumerated only whites. The subsequent years of 1946, 1951 and 1960, produced full enumerations and formed an attempt at a ‘virtual synchronization’ with Britain and the rest of the Commonwealth nations.

The above gives a sense of the natural factors that handicapped a scientific and systematic collection of data. However, despite these constraints it is evident that the state was never in pursuit of any scientific approach to the collection of data. What is instead apparent is the blatant racial profiling that was deeply vested in attempting to understand the occupational structure of the white population. The creation of different questionnaires on the basis of race, from 1921, is a clear indication that the South African state was stratifying the country on the basis of race. Terreblanche (2002) argues that the history of South Africa since the mineral revolution demonstrates the entrenchment of ‘racial capitalism’. The racial capitalism depended on the state’s ability to

² The census questionnaire had to conform to the “Census of the British Empire” envisaged by the Colonial Office in London. However, given the short period of time to conduct the survey some of the methodology from the 1904 census was retained. This meant South Africa’s classification differed from that of England and Wales (Christopher, 2010b).

³ The diversity of opinion from the British dominions did not allow for a tangible outcome, only the adoption of the British classification scheme.

articulate the position (or the challenges) encountered by the white population. For instance, the “poor white” problem was identified by the state and direct interventions were implemented to alleviate their plight. The preference for whites showed the priority of the South African government to identify areas for improvement in the white population.

The unsystematic and unscientific nature of census data collection has made it more challenging for economic historians to understand the occupational structure and occupational mobility of all South Africans since the formation of the Union. According to Christopher (2011:6), unlike the United Kingdom, the South African census offices have left ‘no extensive record of manuscript returns’. Furthermore, the Government officials, statisticians and others tabulated the results as the census directors of that time saw fit. In other words, the classification scheme was confronted with the problem of subjectivism. Moreover, the individually completed questionnaires have been destroyed and access to enumerators’ summary books remains a challenge. However, despite the challenges inherent in the available publications, and despite the absence of the underlying primary sources (access to which would have provided the modern economic historian with a wealth of material and insight), we should not be deterred to attempt to understand the economic history (more specifically occupational structure) of South Africa as it developed over the period under discussion.

A complex and dynamic history like South Africa’s requires an interdisciplinary approach because the available data, limited and skewed as it is, will never be sufficient in unravelling the economic structure of the time. This paper attempts to use the 1911 census data to provide the first account of the occupational structure, according to the author’s knowledge, using the PST system as a method of classification. The PST system is extensively used by the Cambridge Group for the History of Population and Social Structure. It is part of a research program, directed by Leigh Shaw-Taylor and Tony Wrigley, to reconstruct the evolution of the occupational structure of Britain (1379-1911) from the late medieval period down to the early twentieth century.

Why is it important to understand the occupational structure of 1911, in an international and local perspective? The formation of the Union of South Africa was the first time that the four former colonies came together under one flag. It was the first national census to collect data for all South Africans across racial lines. This is important if we believe occupational structures in the absence of systematic wage (income) data tell us something significant about social status. In an

international context, occupational structures are useful to compare developmental stages of countries. They allow us to know if the economy is an agriculture-based economy, an industrializing one or a service based economy. By 1910, South Africa had entered a mineral revolution. I compare how the structure of its economy during this period compared with Great Britain's occupational structure during the height of industrialization.

Chapter 2: Theoretical Framework: data and its classification

The Primary, Secondary, Tertiary (PST) system of occupational coding was pioneered by E. A. Wrigley and Ros Davies (Kitson, Shaw-Taylor, Wrigley, Davies, Newton and Satchell, 2009). Initially designed to fit all occupational data collected on the occupational structure of Britain c.1379-1911, it has spread from covering Britain's occupational structure to being adopted by scholars from Latin America, Africa and Europe, to uncover the underlying occupational structures of the different continents. I am mindful that there are many systems of classifications (discussed below). According to Shaw-Taylor, Wrigley, Kitson, Davies, Newton and Satchell (2010), the choice of the system depends on the object in view. The aim of my dissertation is to construct the evolution of the occupational structure of South Africa from the discovery of minerals to the start of apartheid. The mineral revolution changed the economic prospects of South Africans fundamentally, particularly white South Africans (Feinstein, 2005; Mpeti, Fourie and Inwood, 2017). It required an increased capacity to produce on a very large scale, to accommodate the 'burgeoning market for labour and every necessity and convenience' to support the growing population where the mineral revolution was taking place (Cilliers and Fourie, 2016:8)⁴.

The rationale for adopting the PST⁵ system follows from the logic of Wrigley's about the industrial revolution. Wrigley (2007a) argues that pre-industrial economies, where all 'material production was pyramided upon the productivity of the land', exhibited a declining marginal return to both labour and capital⁶. The magic of the industrial revolution was in transforming the output of energy and by so doing removing blockages on individual productivity and prevailing standards of living. If we are able to keep track of changes in the labour force engaged in the primary, secondary and tertiary sectors, we will shed light on the scale and timing of the change that occurred in the relevant economy.

Primary production refers to the process of securing raw materials, and primary occupations are those which produce these raw materials. Secondary production is performed by men and women in industries that transform raw materials into finished products. Tertiary activities are more

⁴ See Webb (1983), discussion on ox-wagon transportation. Boshoff & Fourie (2017) demonstrate how South Africa was integrated into the global economy by the 1870s. Fourie & Herranz-Loncan (2017) show that railways increased labour productivity between 1873-1905.

⁵ See Colin Clark (1940), "The conditions for economic progress", who pioneered and saw the value of this approach.

⁶ See David Ricardo (1817), *The Principles of Political Economy and Taxation*.

miscellaneous and are characterized by activities that are ‘downstream’ from primary and secondary activities (Wrigley, 2007a); for example, personal services, postal services, medicine, government administration and the law. There are, however, tertiary activities which are not that far ‘downstream’ and are involved in the various production stages. For example, transportation of raw and finished products to the factories, wholesale and retail activities and consumers.

The relative size of the primary, secondary and tertiary sectors is influenced by the income elasticity of demand. The income elasticity is normally lower for primary and highest for tertiary employment (Wrigley, 2004). The reason is that as an economy develops, the proportion of aggregate demand dedicated to producing primary products decreases, while the proportion of aggregate demand devoted to secondary and tertiary industry increases. As the incomes of society rise the amount spent on food declines relative to the amount spent on manufactured goods and services. This leads to an adjustment of the labour force composition to reveal the proportion change of aggregate income spent on products of the primary, secondary and tertiary sectors. According to the PST model, the labour force composition of poor countries will be 80:15:5 (primary, secondary, tertiary respectively) and as incomes rise and living standards improve to those of advanced countries we expect to see a reversal in the labour force composition to 5:15:80.

The challenge with this division of the PST system, is to recognize that not all industries or economic activity can be mindlessly placed into certain categories. Medieval philosophers, for example William Ockham and Peter Abelard, made a clear distinction between fungibles and consumptibles. Jam is consumptible since it can only be eaten once. The land upon which we farm is fungible because we are able to use it indefinitely. Mining, an important industry for the South African economy, is consumptible. However, it is not clear where to place it, if treated as part of the secondary sector because of mineral output is the initial stage in a manufacturing process. And this would mean cotton and wood could also be similarly placed. According Wrigley (2007a), all things equal the classification mining should be placed in the primary sector. This paper follows along this tradition adopted by the Cambridge group to place mining within the primary sector.

Features of the PST system

In the PST system occupations are identified by a four-digit code. The first digit denotes the sector, the second the group, the third the section, the fourth the occupation. For example, 1,1,1,1 is the code for a farmer; 2, 71, 2, 30 for a boat builder; 3, 20, 7, 1 for a silk dealer. The first digit (1) for

the farmer denotes that he is within the primary sector, the second (1) denotes he is in agriculture, the third (1) industry in question is farming, the fourth (1) that within that industry he is engaged as a farmer. The table below demonstrates the structure to which the system gives rise (Table 1).

As a rule the final digit (occupation) will appear in sequence, for example, farmer is 1, 1, 1, 1, yeoman is 1, 1, 1, 2, husbandman is 1, 1, 1, 3 etc. In contrast to this rule, final digits of 30; 40; 60; 80 denote labourers, clerks, others, direction and supervision respectively. For instance, 1, 1, 1, 30 is an agricultural labourer and 2, 71, 2, 30, a boat building labourer, are both recognized as labourers irrespective of the industry they appear in. By coding the data in this fashion we are able to ascertain the total amount of labourers in the economy.

Table 1: *The agriculture group within the primary sector*

PRIMARY				1, 0, 0, 0
PRIMARY	Agriculture			1, 1, 0, 0
PRIMARY	Agriculture		agriculture, other	1, 1, 0,60
PRIMARY	Agriculture		management, agriculture	1, 1, 0,80
PRIMARY	Agriculture	Farming		1, 1, 1, 0
PRIMARY	Agriculture	Farming	Farmer	1, 1, 1, 1
PRIMARY	Agriculture	Farming	Yeoman	1, 1, 1, 2
PRIMARY	Agriculture	Farming	Husbandman	1, 1, 1, 3
PRIMARY	Agriculture	Farming	others farming a holding	1, 1, 1, 4
PRIMARY	Agriculture	Farming	grower of minor crops	1, 1, 1, 5
PRIMARY	Agriculture	Farming	servant in husbandry	1, 1, 1, 6
PRIMARY	Agriculture	Farming	agricultural labourer	1, 1, 1,30
PRIMARY	Agriculture	Farming	farm work, other	1, 1, 1,60
PRIMARY	Agriculture	Farming	management, farming	1, 1, 1,80
PRIMARY	Agriculture	Animal husbandry		1, 1, 2, 0
PRIMARY	Agriculture	Animal husbandry	horse husbandry	1, 1, 2, 1
PRIMARY	Agriculture	Animal husbandry	cattle husbandry	1, 1, 2, 2

PRIMARY	Agriculture	Animal husbandry	sheep husbandry	1, 1, 2, 3
PRIMARY	Agriculture	Animal husbandry	pig husbandry	1, 1, 2, 4
PRIMARY	Agriculture	Animal husbandry	poultry husbandry	1, 1, 2, 5
PRIMARY	Agriculture	Animal husbandry	labourer, pastoral	1, 1, 2,30
PRIMARY	Agriculture	Animal husbandry	animal husbandry, other	1, 1, 2,60
PRIMARY	Agriculture	Animal husbandry	management, animal husbandry	1, 1, 2,80

Source: Wrigley, 2007a

The PST system is not only limited to three categories of classification of primary, secondary and tertiary sectors. In total it has eight sectors (Table 2) that cover economic activity or lack thereof. The primary and secondary sectors are straightforward. Primary activities include farming, fishing, mining⁷ and animal husbandry. Secondary activities are those that convert raw materials into finished products. It is about the production of material objects for the market economy, using physical and chemical processes.

Table 2: *Sectors, groups, and sections*

	Sector	Number of groups	Number of sections
1	Primary	7	18
2	Secondary	37	154
3	Tertiary occupations (dealers)	30	102
4	Tertiary occupations (sellers)	28	63
5	Tertiary occupations (services and professions)	16	64
6	Tertiary occupations (Transport and Communication)	7	11
90	Sectorally unspecific occupations	0	0
99	Without occupation or unstated	3	6

Source: Wrigley, 2007a

Wrigley (2007a) argues that the second, third and fourth industries are closely related. These sectors provide scope to measure the scale of employment created at each stage in the production (secondary), distribution (dealers) and the sale of goods (sellers). Table 3, demonstrates the interconnections of the different sectors and how the PST system makes it easy to track these

⁷ Within the PST system mining remains classified within the primary sector despite the existence of persuasive arguments for its placement within the secondary sector, especially in the South African context of deep mining.

changes. We are able to track the changes in employment of precious metals and jewelry from the silversmith, silver dealer and silver sellers.

Table 3: *Interconnections of sectors*

Precious metals and jewelry	Silversmith	2,50, 2, 1	Silver dealers	3,50, 2, 0	Gold and silver sellers	4,50, 3, 0
	silver plater	2,50, 2, 2				
	other workers in silver	2,50, 2,60				

Source: Own example, followed Wrigley (2007a)

The fifth sector covers the rest of the tertiary sector composed of services and professions excluding transport and communication. It includes commercial and administrative services; food, drink and accommodation services; domestic services, miscellaneous service industries; local and national government and financial services among others.

The sixth sector covers transport. In the early modern period and during the mineral revolution transport was the fastest growing occupation (Herranz-Loncán and Fourie, 2017). As productivity increased the volume of goods transported on land and by water increased dramatically. With the passage of time the mode of transportation also developed to include canals and turnpike roads, railways and air travel. Finally, the remaining two sectors include those in sectorally unspecific occupations such as worker and labourer; the other sector consists of those without occupation and their occupation status is uncertain, for example, a prisoner, pensioner and beggar etc.

PST and other occupational systems

When we think about occupational systems, there is a sense that one should be able to move from one system of coding to another relatively easily. The prerequisite for such is a complete dictionary of descriptors, and data that is processed from an individual level. What becomes problematic in cross comparisons is when aggregation of data occurs and it becomes difficult to disentangle descriptors. For example, if you group all miners under a single category, it becomes impossible to disentangle who might have been involved in diamond, gold and copper mining etc. Therefore, the more you aggregate the data in a particular system the more you limit the possibilities open to

that system to conform to characteristics of another occupational system, like international standard classification of occupations (HISCO).⁸

The purpose of the historical international standard classification of occupations (HISCO) was to produce a system of classification that is applicable across time, space and language, allowing researchers to communicate with one another and make international comparisons. The development of HISCO was built upon the work of ISCO68, a system developed by the International Labour Organisation (ILO). The reason for historicizing HISCO and not coming up with a completely new system of classification, was to use an ‘existing system with proven credentials that would provide a systematic basis of presentation of occupational data relating to different countries in order to facilitate international comparisons and, in addition, to provide an international classification system which countries might use in developing the national occupational classification’. The system is enhanced by having consistent coding and descriptions of occupation in six languages namely: Dutch, English, French, German, Norwegian and Swedish’ (Wrigley, 2003:6).

Despite the flexibility provided by the HISCO system, it cannot be easily adapted for the purpose served by the PST system. HISCO has 8 major groups namely professional, technical and related workers; administrative and managerial workers; agricultural, animal husbandry and forest workers; three clerical and related worker categories; sales workers; service workers; fisherman and hunters; production and related workers, transport equipment operators and labourers. Then 83 minor groups at the next level (e.g. 3-9 ‘clerical and related workers not elsewhere classified’); 284 unit groups at the next level (e.g. 3-91 ‘stock clerks’); and the scope for more detailed subdivision (3-91,40 ‘Storeroom clerk’). In principle, HISCO regularly results in people doing work in the same industry separated by the coding scheme. For example, ships’ officers appear in the major groups designated as follows: 0-42 (ships’ deck officers and pilots) in contrast sailors appear in 9-89 (ships’ deck ratings, barge crews and boatmen). The reason for this is to reveal differences in training and professional qualification, therefore, senior positions across different occupation can be compared. And this is fundamentally different from the logic of the PST system and creates a challenge in trying to use the two systems together. Difficulties also arise when dealing with

⁸ On the PST and HISCO systems, see Saito and Taniguchi (2006) ‘A note on the use of the primary-secondary-tertiary (PST) system in East Asian contexts’ <http://www.helsinki.fi/iehc2006/papers1/Taniguch.pdf>.

census data. Wrigley (2007a) argues that HISCO is more suited to answering questions about social status than questions about economic structure.

The fundamental distinction between the PST and the occupational system is, firstly, PST draws on three sectors, primary, secondary and tertiary. The merit of this approach is that it provides scope for describing and analyzing how organic economies transform from being energy constraint to industrialized economies. Secondly, the difference in the PST system of classification makes it possible and easy to track the production of goods from start to finish while accounting for changes in labour force participation at each stage of the production process. For example, Table 3 on silver allows us to connect the manufacturer of a product, a secondary sector activity, to the dealer and seller or the product, a tertiary sector activity. The PST numbering systems makes it easy to perform these kinds of investigations⁹ (Wrigley, 2010).

Methodology

This section will demonstrate the methodology used across different time periods. Earlier I stated that the aim of this dissertation is to construct the evolution of the occupational structure of South Africa from the discovery of minerals to the start of apartheid. Given the data constraints that exist in the different time periods, I divide the dissertation into three sections. First, I conduct a provincial analysis of the evolution of occupational structure in the Cape Colony from 1875-1911. Second, I discuss the occupational structure of the Union of South Africa from 1911 onwards. The discussion on the occupational structure gives us a snapshot of where the development of the country was headed. Third, I provide an analysis of the evolution of the occupational structure of South Africa from 1911 – 1951. The aim is to provide an evolutionary overview of the occupational structure of South Africa from 1875 to 1951. Before discussing the occupational structure, let me make a few remarks about the census records, in particular the 1875, 1911 and 1951 records.

Nineteenth century records before unification

Up to the year 1856, statistical returns for the annual Blue Books were received by the Colonial Office from several commissioners, capturing the heads of population, births, marriages, and

⁹ For more information on the PST system see <http://www.geog.cam.ac.uk/research/projects/occupations/britain19c/pst.html>. The website includes a table of definitions, dictionary, look-up table of original occupational descriptions etc.

deaths, distribution of lands and agricultural produce, and stock and animal productions. These census records were limited due to the mode and instrumentality, coupled with the rising expenses of conducting the census. In addition, the system had to be discontinued as some of the returns were not trustworthy (Census Office of the Cape of Good Hope, 1877). The official and systematic collection of census records of the Colony of the Cape of Good Hope began in 1865 and has been digitized by the HathiTrust¹⁰. The collection of occupation data for 1865 only captures information regarding the White and Coloured populations within the Cape Colony and does not lend itself to systematic analysis of the evolution of the South African occupational structure that includes all race categories at any level. The census records of 1875, 1891 and 1904, however, include all the different race groups in the Cape Colony. The racial groups were disaggregated into different racial and cultural groups. These were as follows: European or white, Malay, hottentot, Fingo, kafir and Betshuana, mixed and other¹¹. For the sake of simplicity, we create three racial categories: white (European), black (Fingo, kafir and Betshuana), coloured (Malay, hottentot, mixed and other).

Table 4: *Occupational Structure for the Cape of Good Hope, 1875*

	White male %	White female %	Black male %	Black female %	Coloured male %	Coloured female %
Primary	19.2	24.4	38.1	35.3	27.0	4.0
Secondary	5.5	1.2	6.1	0.0	16.6	0.8
Sectorally unspecific	0.8	0.0	2.6	0.0	7.9	0.0
Tertiary dealers	1.0	0.0	0.1	0.0	0.5	0.1
Tertiary sellers	0.8	0.1	0.0	0.0	0.3	0.0
Tertiary services and professions	6.5	19.4	1.6	12.6	6.10	41.8
Transport and communication	2.1	0.0	1.0	0.0	2.1	0.0
Without occupation or unstated	63.9	54.7	50.6	52.0	39.6	53.3

¹⁰ HathiTrust is a partnership of academic and research institutions, offering a collection of titles digitized from libraries around the world. The original sources can be obtained from the HathiTrust digital library: <https://www.hathitrust.org/>. <https://hdl.handle.net/2027/ucl.i0074071069>.

¹¹ The classification in post-apartheid South Africa has changed as some of these terms are derogatory and were subsequently removed from the lexicon of classification in South African. Kafir was initially considered a neutral term with reference to black South Africans, but the term has acquired distinctly derogatory meaning in the context of South African history. Secondly, Fingo refers to the amaFengu or Mfengu (who, although black African by modern terminological standards, were considered distinct from 'kafir' people). Thirdly, hottentot refers to khoesan, itself a composite of the indigenous pastoral Khoekhoe and hunter-gatherer San that had inhabited most of the Cape Colony when Europeans arrived in the seventeenth century. Malay would more specifically be referring to the Cape Malay. The mixed and other categories include Asians and Indians etc.

Census record 1911

The research uses census data of 1911 published by the Union of South Africa. By its very nature, census data is already organized into defined categories by the officials. However, given that nobody, to the author's knowledge, has used the census records for quantitative analysis, the data had to be transcribed from the census books into excel format. Moreover, after transcribing the data as it was found in the census, it undergoes "cleaning" to refine and keep only the necessary parts for computing purposes. Let me be clear that this pruning of data did not involve omitting or manipulating the core data but only a restructuring of the columns and rows. The reason for this is to allow matching process with the PST classification scheme, where each occupation is linked directly to the associated sector, group and section. Given the laborious and tedious nature of this task, it does open itself up to human error when capturing the data. If there are any such errors this author takes full responsibility, despite the numerous cross-checks undertaken to ensure this has not occurred. Therefore, once the data had been transcribed it was ready to be used for data analysis. Before discussing the results, let me further discuss the structure of the census records.

The census records on occupation are collected for the entire population across the different race groups. The data is collected for the Union of South Africa including the four former colonies / provinces namely: Cape of Good Hope, Natal, Orange Free State and Transvaal. The columns of the data for each province and the Union describe the different race groups, namely: All races, Europeans, Bantu and Mixed and other coloureds¹². Each racial group distinguished between male and female persons. The rows capture all occupations available in the economy. These were grouped into seven different classes namely, professional, domestic, commercial, agricultural, industrial, indefinite, dependents and unspecified. Within each class there are orders and sub-orders which classify and group the data. In total there are 18 orders (e.g. persons engaged in the general or local government, or the defence or protection of the country), and the next level consisting of 66 sub-orders (e.g. government: union and provincial or defence). The total

¹² A) Bantu included Baca, Basuto (including Bapedi), Bavenda, Bechuana, Bomvana, Damara, Fingo, Hlangweni, Kaffir (unspecific), Ndebele, Pondo, Pandomise, Swazi, Tembu, Tonga (alias Bagwamba including Tshangana), Xesibe, Xosa, Zulu. In addition to these groups there were southern Rhodesian Tribes, northern Rhodesian, Nyasaland Protectorate, Portuguese East African Tribes and other tribes. B) Mixed and coloureds referred to Bushman, Hottentot, Koranna, Namaqua, Malay, Mixed, Griqua, Mozambique, Chinese, Indian and other (including Afghan, American Coloured, Arabian, Creole, Egyptian, Krooman, Malagasy, Mauritian, St. Helena, Syrian, West Indian, Zanzibar and other). As indicated in Chapter 1, words like Bantu are replaced by Black for the rest of the paper for consistency with modern literature about race in South Africa. In this section they have a functional purpose and nothing more.

population for the Union of South Africa was 5 973 304. The Cape of Good Hope had the largest population of the colony at 2 564 965. Transvaal had the second largest at 1 686 212. Natal had the third largest at 1 194 043. The Orange Free State had the least number of people at 528 174. It is interesting to note that government was prepared to record black and mixed people as heterogeneous groups and to classify them according to their country of 'birth'. In contrast, the white population was presented as a homogenous group, despite the fact that whites came from different parts of the world and spoke different languages, notably Afrikaans (Dutch) and English. The image below demonstrates what the census records looked like.

The image shows two pages of a historical census record book for the Union of South Africa. The left page is titled '1. UNION OF SOUTH AFRICA—(continued)—' and is divided into 'ALL RACES' and 'EUROPEANS OR WHITE'. The right page is titled 'MIXED AND OTHER COLOURED' and 'REMAINS'. Both pages contain detailed tables with columns for 'Person', 'Male', and 'Female' counts, and rows listing various occupations and demographic categories. The tables are densely packed with numbers and text, representing the original census records.

Figure 1: An image of the original census records

Twentieth century records

The South African economy after Union went through two important stages. First, the ‘trough of the twenties’, followed by the industrial breakthrough of 1933-1945 (Morris, 1976). The foundation of the economic structure in the twentieth century lay on the intensification of segregation and the use of extreme forms of racial discrimination. A series of legislative acts were

used to entrench segregation that ‘removed and restricted the rights of non-whites in every possible sphere’ (Beinart and Dubow, 1995:3). Some of the more important measures were the Mines and Works Act 1911 (segregation in employment), the 1913 Natives Land Act, the 1923 Natives (Urban Areas) Act (urban residential segregation), the 1924 Industrial Conciliation Act, the 1925 Minimum Wages Act, the 1936 Representation of Natives Act (abolition of the remnant African franchise in the Cape Province) and the Native Trust and Land Act (an elaboration of the 1913 Land Act). The segregation was a composite ideology and set of practices seeking to legitimize social difference and economic inequality. In addition to the domestic measures, external shocks such as World War I and World War II shaped the economic structure of South Africa.

The construction of the evolution of the occupational structure is compiled using the Union’s Jubilee 1910-1960 census reflecting on the Unions growth and development over the preceding half century (Union of South Africa, 1960). The limitation of this data is that we cannot analyse the occupational structure at a regional level. However, it provides us with the ability to track changes in occupational structure of South Africa from 1911-1951. The following sections discuss the relevant changes in occupational structure. First, the evolution of the occupational structure from 1875-1911 in the Cape Colony. Second, the significance of the formation of Union and the occupational structure of South Africa 1911 (including all four colonies). Finally, the evolution of the occupational structure of South Africa from 1911-1951.

Chapter 3: Cape of Good Hope 1875 – 1911

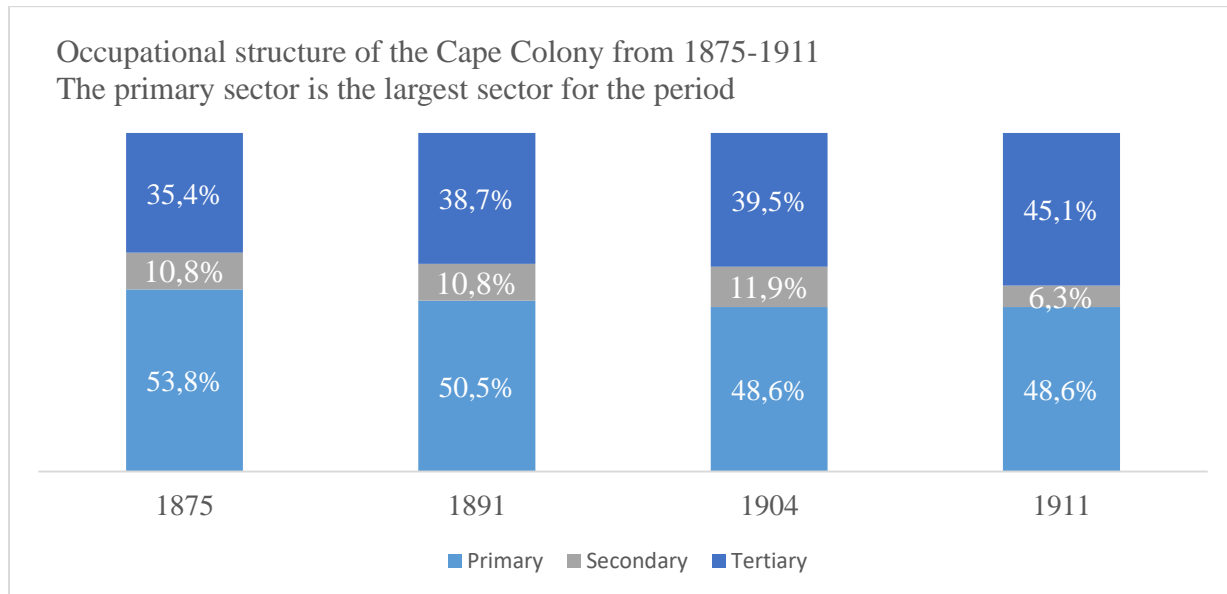
“The facts all contribute only to setting the problem, not to its solution” – Ludwig Wittgenstein (1922:49)

It would have been ideal if the whole of South Africa had been covered by the census records from 1875 to 1911. In the nineteenth century, unfortunately, the available sources do not allow the history of population change in Natal, Orange Free State and Transvaal to be covered in a manner comparable to what is possible in respect of the Cape Colony. It therefore is best to focus almost exclusively on the Cape Colony (which was also more advanced than the other three territories in terms of economic development) in attempting to provide a coherent description and analysis of changes in occupational structure between 1875 and 1911. From 1911 onwards evidential problems for the entire country ease, however, collection methods differ by race. Chapter 5 will provide a deep understanding of changes during this period.

The British annexation of the Cape in 1795, and again after the interlude of Batavian rule (1803 – 1806), brought more immigrants from Britain to the Cape Colony, most notably 4,000 settlers in 1820 to the Eastern Cape. A frontier region populated by indigenous amaXhosa, with the inclusion of earlier Dutch, German and French settlers and the new British arrivals, triggered migration into the interior of roughly 12,000 *trekboere* (pastoral, frontier settlers) and their servants between 1835 and 1845, also known as the Great Trek. What transpired from the Great Trek was the formation of two independent republics of the Orange Free State and Transvaal. These, together with the Natal Colony and Cape Colony, would become provinces of the Union of South Africa in 1910.

The economy of the Cape was prosperous during the eighteenth century. Fourie and Van Zanden (2012) argue that during the eighteenth century, the Cape achieved impressive levels of GDP per capita and growth rates. However, during the nineteenth century, the Cape’s per capita income declined. The reasons for the decline in the economic prosperity of the Cape are not well understood. The nineteenth century Cape entered a turbulent period, particularly after the discovery of diamonds (1866) and gold (1885), as a result of which the two Boer republics benefited from increased population and income of settler South Africa (Cilliers, 2012). While there was an increase in wealth for some communities, others struggled because of the cattle-disease Rinderpest of 1896. The second South African War (1899-1902), which included scorched earth tactics used by the British in the Boer republics, also led to economic decline. The obliteration

of arable land lead to a decline in agricultural output. The terrible work conditions in the mining industry and in the military led to increasing death rates. The response from Africans was that a large number of black workers refused to work in the gold mining industry. And this was followed by a series of rolling protest in the mining regions (Warwick, 1983).



Source: Own calculation

Figure 2: *Occupational structure of the Cape Colony from 1875-1911*

The impact of the discovery of minerals together with the violence that penetrated the colonies contributed to shaping the occupational structure of the Cape Colony. Figure 2 above shows a relatively stable trend of the occupational structure during the period 1875-1911. The only notable change is that of secondary sector activity that underwent a significant decline from 1904-1911. The secondary sector decline was a result of the South African War of 1899-1902 that brought production of gold to a halt with no possibility for agriculture to resuscitate the economy following the ‘scorched earth policy’ adopted by the British forces. The aftermath of the war stimulated demand for goods and services in the Cape Colony. In addition, secondary sector participation declined, stemming from the recession of 1903 that continued until 1909 (Greyling and Verhoef, 2015:34). There are several push and pull factors that explain the stability of the occupational structure during South Africa’s most dynamic period of economic activity. Firstly, the population of the Cape continued its upward trajectory at a rapid pace since annexation by Britain. Figure 3 demonstrates the rapid population growth and the increase was a result of significantly higher

levels of migration of black people into the Cape Colony. Initially people were drawn in their multitudes to the diamond hub in Kimberley, a territory which was originally part of the Free State. Secondly, the geography of the Cape Colony expanded as a result of conquest and annexation and brought the generally unwilling inclusion of densely populated areas of African settlement into the colony after the frontier wars (Giliomee and Mbenga, 2007:77). Later, in 1873, for example, Kimberley and the surrounding diamond fields (an area roughly corresponding to the district of Griqualand West) became a British colony, and in 1880 it was annexed by the Cape Colony. When the Union of South Africa was formed, Kimberley was part of the Cape Colony. Therefore, expansion of territory means the population increased through the push factor of conquest and annexation instead of the mineral revolution in isolation. Some studies (Greyling and Verhoef, 2015; Magee, Greyling and Verhoef, 2016) provide evidence of demographic expansion of the Cape Colony focusing on male and female migratory patterns. Estimates of total population from figure 3, are similar to those of Greyling and Verhoef (2015).

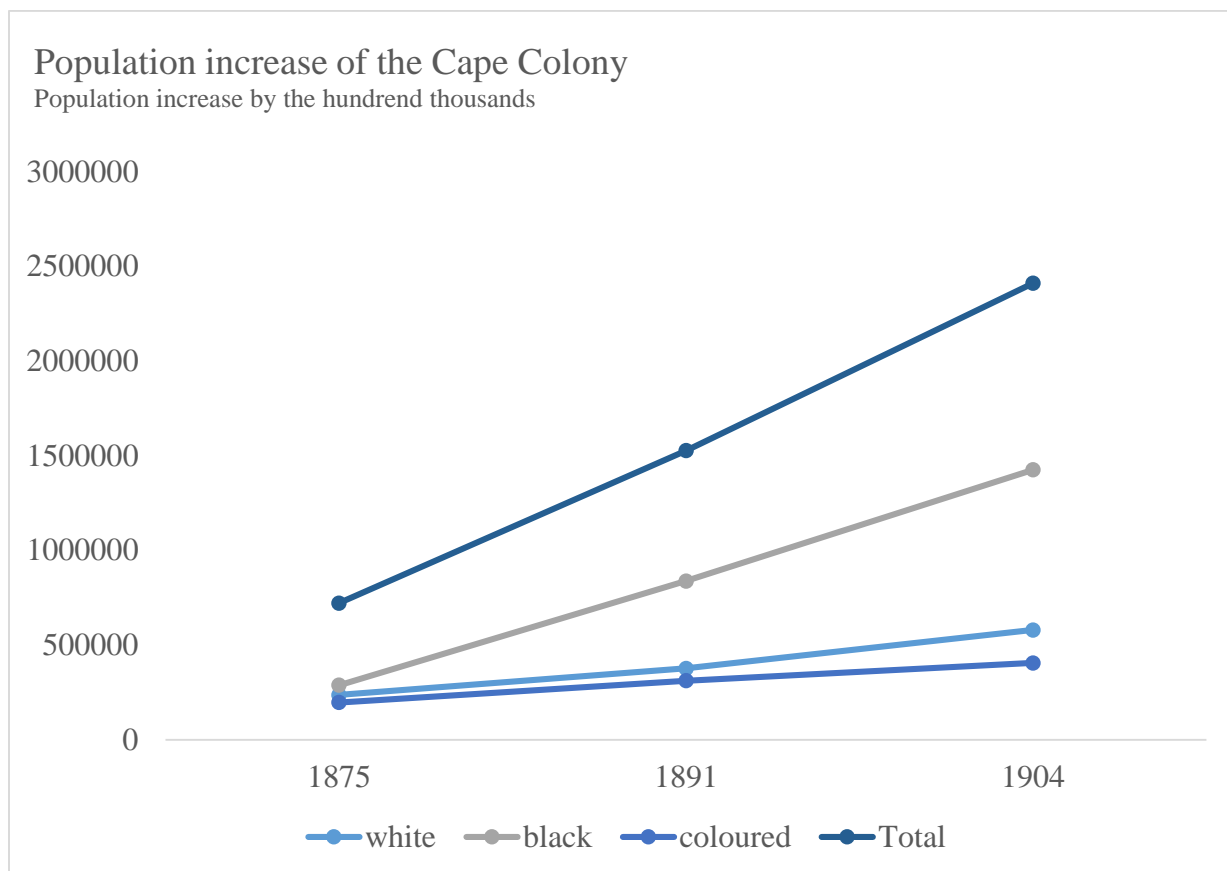


Figure 3: *Population increase of the Cape Colony*

It does not seem satisfactory, however, that territorial expansion and population growth would be sufficient conditions for the stability of the occupational structure in the midst of a mineral revolution which changed the economic trajectory of the Cape Colony and the Union of South Africa. Kuznets (1973) argued that modern economic growth was associated with major changes in the structure of the economy. The change was a transition of labour from primary sectors, particularly agriculture, to a labour absorption into secondary and tertiary sectors of the economy. Shaw-Taylor and Wrigley (2015) indicate that the industrial revolution of England saw ‘radical structural change’ between c.1710-c.1817 with an increase in the importance of the secondary sector from 37.2% to 42.1%, increase in tertiary sector from 12% to 18.4% and a decline in primary sector from 50.8% to 39.4%. The fundamental difference between the revolutions is that structural change occurred across sectors within Britain, driven by a transition from manual labour to greater levels of mechanization propelled by greater technological innovation. The industrial revolution penetrated every aspect of life and contributed to increasing average income, population growth and sustained increase in the standard of living for the general population. In contrast, the Cape Colony did not exhibit ‘radical structural change’ - as described by Kuznets – forty-four years after the discovery of diamonds and gold. Firstly, the structural change in the colony occurred within sectors with the discovery of minerals influencing mining in the primary sector. However, the change in the primary sector indicates that the colony saw little ‘radical structural change’ between 1875-1911, with decreasing primary sector activity from 53,8% to 48.6%, decline in secondary sector activity from 10.8% to 6.3%, and an increase in tertiary sector activity from 35.4% to 45.1% (Figure 3). Secondly, the mineral revolution penetrated every aspect of life with uneven economic and social prospects for different race groups (Feinstein, 2005:93). The GDP per capita in the colony only began to rise after the discovery of minerals. Cilliers and Fourie (2012:24) argue that living standards may have started to increase before the rise of GDP per capita in 1870s. Despite the overall rise in living standards, the general pattern of high primary sector participation in the occupational structure of the Cape Colony remained intact. The next section(s) shows that South Africa’s mineral revolution led to a ‘radical structural change’ within the different race groups.

Male Occupational patterns

The aggregated data of the different colonies without marked racial categorizations often mask differences that merit consideration. The Cape Colony is the only colony/territory that collected

data for all racial groups, particularly black people, from the late nineteenth century. Figure 4 below shows estimates of adult male occupational shares between 1875 and 1911 for the three different racial groups, namely white, black and coloured males. There are several striking features. First, the secondary sector share of employment for black males declined from 1875 to 1911. In addition, the secondary sector share of employment for coloured males was stable from 1875 to 1904 but experienced a sharp decline from 1904 to 1911. Second, the primary sector share of employment for black males increased during this period. The initial rise was primarily due to the discovery of minerals, and as demand increased for labour, more black migrant workers were recruited to the mines. The rise was sustained through legislation like the hut and poll taxes designed to lure black male workers into earning wages on the farms and mines in exchange for their labour¹³ (Massey, 1978; Redding, 2000). Third, the occupational structure of white male workers across sectors remained relatively stable, with minor fluctuations in comparison to other race groups. When we compare Britain's male participation with male labour participation in the Cape Colony, we notice that the Europeans' labour participation in selected northern counties in 1871 was dominated by secondary sector employment (Shaw-Taylor and Wrigley, 2014). This is because the mechanization process of the industrial revolution forced labour augmentation, particularly for those engaged in agriculture which used to be extremely labour intensive. In contrast, the colony's white male labour participation across the different race groups was dominated by primary sector participation. The selected southern counties (Appendix: table 12 and 13) of England had similar patterns to the Cape Colony in that primary sector employed 'more than three-fifths of the workforce in c1710' (Shaw-Taylor and Wrigley, 2014:12).

¹³ David Massey (1978) argues that the hut tax was driven by a mutuality of interest in migrant labour among colonialist, tribal authorities and South African mining houses leading to active collaboration rather than the Hut Tax simply being an instrument for inducing a flow of labour to the farms and industries in South Africa.

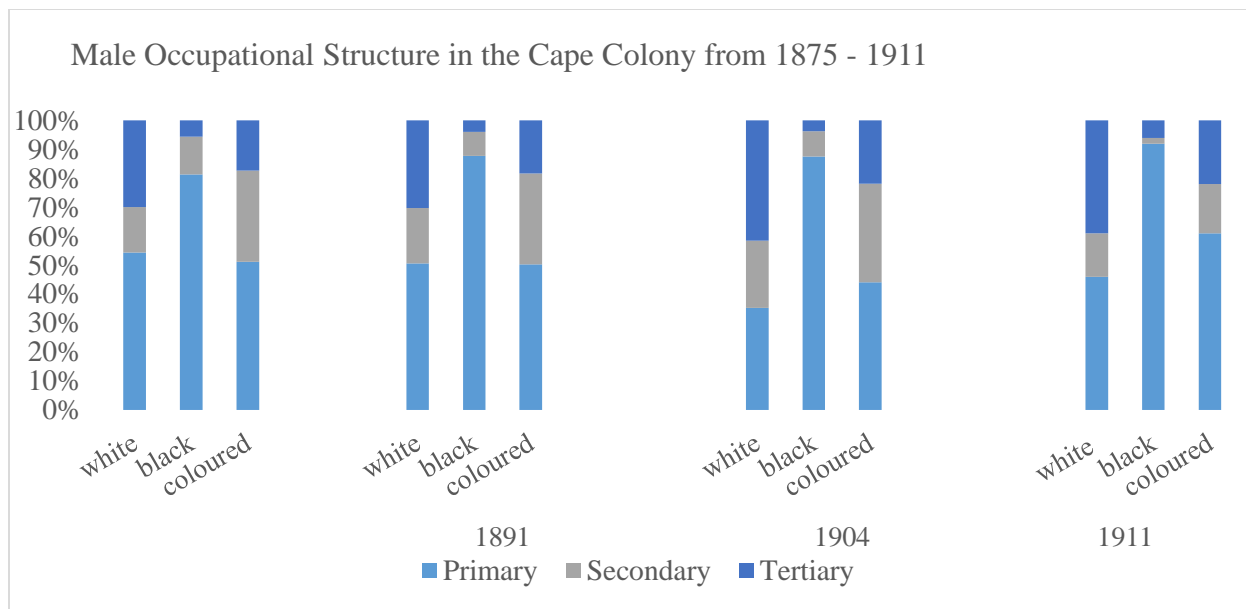


Figure 5: *Male Occupational Structure in the Cape Colony from 1875-1911*

Female Occupational Patterns

The role of women in the South African economy is ‘invisible’ in history books at the start of the twentieth century. What is emphasized consistently within secondary sources (Bradlow, 1993; Ntwape, 2016) is that women’s role was fundamentally a domestic one; it included feeding, care of the family and child rearing. History books have largely ignored women’s political organization, the struggle for freedom from oppression, for community rights and, importantly for gender equality. In addition, there is no systematic study on the contribution of women’s economic role during the mineral revolution.

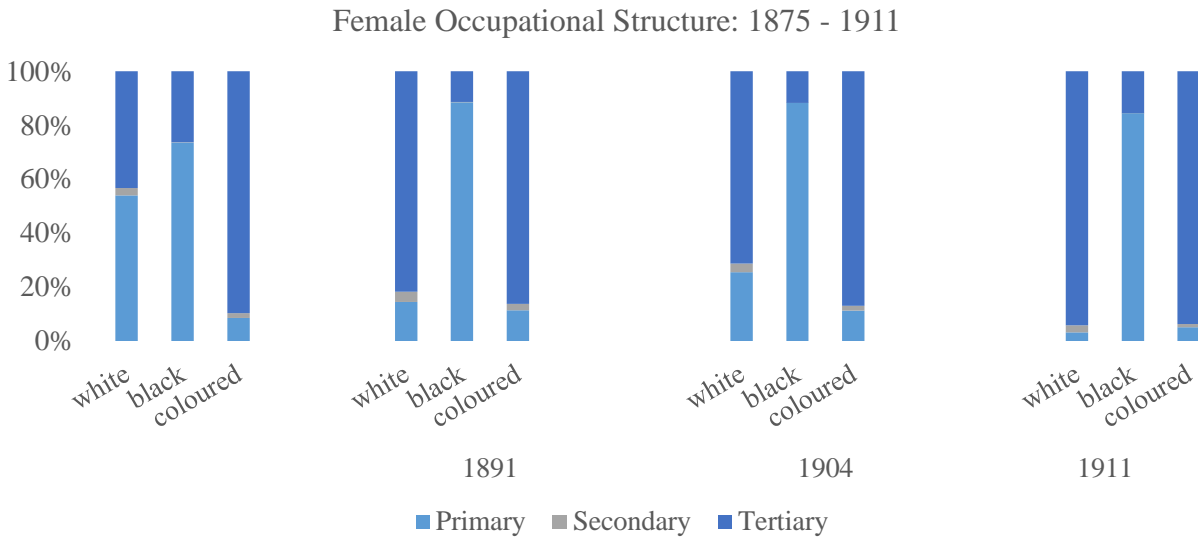


Figure 5: *Female Occupational Structure in the Cape Colony from 1875-1911*

Before discussing figure 5, I will make a few brief remarks on the enumeration of female employment on twentieth century censuses. The censuses on face value provide substantially complete enumeration on adult male and female employment. However, women often performed irregular or part-time work and this is not accounted for within the censuses. It remains unclear as to what could have led to this bias. It is possible that reasons for the ‘skewness’ of records stems from an ideological agenda that seeks to undermine women’s participation in the economy. The data does not make a distinction between those who worked part-time and full-time. It is possible that a higher proportion of women than men, for whom occupations were recorded in the censuses, worked part-time. In the words of Shaw-Taylor and Wrigley (2014:12), “censuses contain a countervailing bias of unknown size”. This problem is not peculiar to South Africa and can be found in international literature (Higgs, 1995; Horrell and Humphries, 1995; Sharpe, 1995). It is argued that the bias comes from an ideology that hinges on promoting patriarchy and in turn understates women’s contribution in economies around the world. Given that we are uncertain about the nature and direction of the any bias in the census, the discussion in this paper will take the results at face value.

Figure 5 shows that in 1875, before the discovery of diamonds in the colony, more than half of white female workers were involved in primary sector activity, with black females working roughly three quarters in the primary sector. However, after the discovery of minerals (1886), there

was a clear shift in the occupational structure of white female workers. They moved out of the primary sector, particularly agriculture – where they constituted less than a quarter of the workforce - and were absorbed mainly in the tertiary sector undertaking domestic services. In contrast, after the mineral revolution black females' participation increased within the primary sector. It can be argued that there was a labour substitution effect at play, as the demand for adult black and white male labour increased in the mines. Black women took up greater employment in agriculture, first, within their own households, second, on white farms where white male and female labour had shrunk considerably. Another trend that we can identify is that the coloured occupational structure remained stable, with the majority of females employed within the tertiary sector, employed mainly in domestic service.

In 1871 Britain's female employment patterns differed from black females in the Cape Colony, where a large proportion of the female workforce was likely to be found in the tertiary sector. But the occupational patterns of white female workers in Britain was similar to that of white and coloured females in the colony, where the majority of females were employed in the tertiary sector (Shaw-Taylor and Wrigley, 2014). The large difference between Britain's female occupational structures and the colony's was the superior participation of women in the secondary sector, predominantly in clothing and textiles. On the other hand, women's participation in the colony was insignificant in sub-sectors such as mining, metal-working and construction and transport.

Kuznets structural change and modern economic growth

The section above was fundamentally about laying the facts about the development of the occupational structure of the Cape Colony. We now focus on how the different parts of the economy were interlinked to influence the structure of the economy. Kuznets argued:

A country's economic growth may be defined as a long time rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands. All three components of the definition are important. The sustained rise in the supply of goods is the result of economic growth, by which it is defined. (Rugina, 2003:454)

Economic historians distinguish between 'Smithian economic growth' and 'modern economic growth'. The former term is from Adam Smith's discussion about the importance of the division

of labour in raising output per head, spearheading economic growth. The latter term, ‘modern economic growth’, was derived by Simon Kuznets who argue that three factors were central to the concept, namely; population, advancing technology and institutional and ideological adjustments. Drawing on data, Kuznets specified that from the outset modern economic growth was associated with major changes in the structure of the economy. Initially, in transition labour and output shifted away from the dominance of primary sector mainly agriculture to greater labour absorption and output in secondary and tertiary sector. However, Kuznets was always aware that the blessings brought forth by the improvements in the economic lives of many, was accompanied by ‘disruptions, social evils also known as disequilibrium, problems’ (Rugina, 2003:454).

Kuznets considered “institutional and ideological adjustments” a critical factor in increasing economic growth for the betterment of society. The Cape Colony on the surface (figure 2) looks unresponsive to changes in modern technology from 1875-1911 introduced by the discovery of minerals. However, disaggregation of the data to male and female participation reveals an occupational structure that became racially polarized over time. Let us explore some of the reasons why the ‘institutions and ideological adjustments’ from the change in economic fortunes resulted in a differentiated occupational structure for the different race groups. First, the mineral revolution led to a labour substitution effect where black labour was coerced into the mines through legislation, for example, the Glen Grey Act, the hut and poll tax served this direct purpose. On the other hand, white male labour declined in the primary sector from 1875 to 1904, and there was an increase in white male secondary sector participation for the same period. Second, the impact of the Glen Grey Act, hut and poll taxes affected the occupational structure of women. Initially, black women’s participation in agriculture increased, while white women moved into tertiary sector employment, predominantly domestic services. The data does not reveal the dual employment (also known as by-employment) that black women had to undertake. The data together with secondary sources (McGeevor, 2013; Sebastian and Shaw-Taylor, 2013) about the role of [black] women within the household indicate the nature of employment of [black] women that the data misses. Third, the ideological consideration of the social problems that arise from the ‘Gordian knot’ associated with modern technological innovations would rest squarely on black workers (Rugina, 2003). The first, being the tempo, which is the pace of development from the time minerals were discovered, affected all workers in varying degrees. The second and most important is that in the colony real capital formation to finance the mineral revolution was at the expense of

black workers. This is evident in the ‘abysmally low wages’ paid to the black workers compared to white workers in the mines to ensure the profitability of the mines (Feinstein, 2005). This was a period where institutions, ideologies and legislation promulgated would have a lasting effect on the racial income distribution of South Africa.

Modern economic growth in the Cape Colony

Modern economic growth, as purported by Simon Kuznets, was based on conventional measures of national product and its components, population and labour force. We provide an institutional analysis of the performance of critical components that are essential in determining the nature of the occupational structure. First, in developed countries we observe higher rates of per capita growth and population compared to the developing world. The historical macroeconomic data of nineteenth century Cape Colony has had less reliable estimates of Gross Domestic Product (GDP, output, expenditure and income as a result of under reporting and measurement errors (Feinstein, 1972). Fourie and Van Zanden (2013) have attempted to reconstruct GDP figures for the Dutch Cape Colony using the earlier work of Greyling, Lubbe and Verhoef, (2010) that provided estimates of the Cape Colony from 1850 and 1909. Greyling and Verhoef (2015) have since revised their work to give a comprehensive explanation of growth in the late nineteenth-century in the Cape Colony. Magee, Greyling and Verhoef (2016) demonstrate the impact the discovery of diamonds and gold and an acute upward trend since the early 1890s leading to a fivefold increase in the Cape Colony’s GDP by 1909. The GDP per capita increased by 4.89 per cent annually, while population growth was at an average of 3.94 per cent. The Cape Colony’s GDP growth eclipsed that of Australia and New Zealand but was lower than that of other British dominions.

The GDP figures demonstrates how GDP was responsive to different shocks within the economy highlighted above. The business cycle was responsive to commodity booms and bust. But these did not impact the occupational structure of the Cape Colony. What had an impact on the occupational structure was the adverse effects of the South African War of 1899-1902, that led to a decline in real GDP growth since 1895 and a secondary sector decline within the occupational structure (Greyling and Verhoef, 2015). The challenge of using GDP per capita to ascertain the living standard of the Cape Colony during the nineteenth century is that it does not capture how discriminatory laws and practices reduced the living standards of black people and locked them out of benefitting from these times of increasing prosperity within the colony.

Kuznets (1973) argued that a second component that characterized modern economic growth is that the 'rate of structural transformation of the economy is high'. This refers to major aspects of the economy shifting from primary sector activity, predominantly agriculture to secondary and tertiary, from industry to services and a move to large firms accompanied by an equivalent change in occupational status. Figure 2, does not resemble an economy undergoing a structural transformation stemming from the discovery of minerals. However, Figures 5 and 6 reveal that the occupational structure of the different race groups was undergoing a structural transformation at different rates, with whites, especially white females, experiencing the most rapid change from agriculture to non-agricultural pursuits, from industry to services. The occupational structure of black and coloured workers was resistant to change, instead agriculture participation increased. Therefore, it can be argued that the Cape Colony underwent a racial-structural-transformation of the economy where the rate of transformation was high for all racial groups in different directions.

Development theory regards urbanization and industrialization as essentially interchangeable. These form the third components upon which modern economic growth rests. Urbanization and industrialization rapidly change society's important structures and ideology (Rugina, 2003). The relationship between the two is so strong that urbanization rates are sometimes used as proxies for income per capita (Acemoglu, Johnson and Robinson, 2002, 2005). The theory on the development process regards structural transformation, as mentioned above a shift from agriculture to nonagricultural into manufacturing and services and a shift of labour from rural to urban areas. Gollin, Jedwab and Vollrath (2014:2), argue that 'urbanization and structural transformation are mechanically linked through a combination of a low income elasticity for food and the assumption that manufacturing and services are predominantly or exclusively urban activities'

The standard view of structural transformation is that urbanization is a by-product of either a 'push' from agricultural productivity growth or a 'pull' from industrial productivity growth. This leads to 'production cities' with workers spread across tradable and non-tradable sectors. The second view is that structural transformation occurs from natural resource exportation and urbanization rapidly increases (Vollrath, Gollin and Jedwad, 2014:2). In this view urbanization is a result of the income effect of natural resource endowments instead of growth in the manufacturing and services share of GDP. This brings about 'consumption cities', from resources rents unevenly spent on urban goods and services, where labour is slanted in favour of non-tradable services. The Cape Colony

resembles a consumption city where a large part of the labour force is located within agriculture and mining, particularly black male and female – estimated at 92.4 per cent and 84.52 per cent respectively. The percentage share of labour employed within manufacturing and other secondary sector activities remains relatively small for most of the population, with only significant result for white and coloured males above 10 percent. The increase in profession and services from the tertiary sector is driven by an increase domestic services dominated by white and coloured females (Table 5). African and Middle East countries an example that managed to urbanize without industrialization, where manufacturing and services are relatively small unproductive (McMillian and Rodrik, 2011). In contrast, Asian and Latin American countries that underwent a green revolution and industrialization followed by urbanization characterized by a shift away from agriculture to non-agricultural pursuits (Evenson and Gollin, 2003).

Table 5: *Speculative estimates of the Cape Colony 1911*

	White male %	White female %	Black male %	Black female %	Coloured Male %	Coloured female %	Total %
Agriculture	44.8	3.1	87.1	84.4	55.7	4.9	63.0
Mining & quarrying	2.3	0.0	5.3	0.1	2.7	0.1	2.0
Rest of primary	1.0	0.0	0.1	0.0	2.6	0.0	0.3
Clothing	0.6	2.2	0.4	0.0	0.9	0.7	0.4
Building & construction	4.0	0.0	0.2	0.0	5.1	0.0	0.9
Rest of secondary	11.0	0.6	1.9	0.0	10.3	0.5	2.7
Dealers	2.8	1.0	0.1	0.0	1.7	0.3	0.6
Professions and services	15.4	91.5	4.5	7.4	10.3	93.2	26.4
Transport & communication	6.2	0.0	0.0	0.0	0.0	0.0	0.0
Rest of tertiary	11.8	1.5	0.4	8.0	11.0	0.3	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The discovery of minerals saw the expansion of transportation and communication, increasing the ability of the diamonds and gold to reach the rest of the world. Herranz-Loncan and Fourie (2017)

argue that late nineteenth century economic growth and globalization for developing countries was driven by the development of sound infrastructure and the bedrock of this infrastructural development was the railway system. The railways were all linked to the mining towns and those mining towns became urban centres. The Cape Colony benefitted from the discovery of diamonds to produce one of the largest and most dense rail networks on the African continent. The exporting of minerals resulted in the steady increase of GDP and contributed immensely to economic growth – railways may account for 30 percent increase income per capita in the Cape during the period from 1875 to 1905. However, the benefits of railway development were not enjoyed by everyone. The accumulation of resource rent meant the mining centers benefitted disproportionately from goods imported via the western parts of the colony. In contrast, government policy dictated that the eastern regions such as the Transkei with a majority black population lacked railway and remained economically locked out to expand agricultural exports. Table 5 shows how economic participation within transportation and communications were dominated by white males. White males represented 6.6 percent the only groups that was actively significant within this sector. This serves to reinforce how black populations were excluded from the mineral boom given the critical role railways played in the economic growth of the Cape Colony.

Development of Capitalism in the Colony

The relationship between the development capitalism and the evolution of the occupational structure has not been explored by historians working on occupational literature. Yet capitalism remains the bedrock upon which the occupational structure depends. Rodney (1973) argues that capitalism is a total system that rests on key ideological aspects for its development, and within the African context capitalism is undoubtedly associated with the rise of racism, particularly structural racism, that is deeply rooted in European thought. Marx's analysis of occupational structure, according to Kohn (1976:111), 'emphasized ownership of the means of production and division of labour, both especially salient in the early stages of the [mineral] revolution'. Figure 6 accounts for the growth in the number of capitalists in the Cape Colony, all of who were whites¹⁴. It is evident that before the discovery of minerals in 1875 there were only 19 white male, and 1 white female, capitalists in the Cape Colony. After the discovery of diamonds and gold there was

¹⁴ A definition of capitalism relies on what the data classified as 'capitalists'. We cannot discuss who and which criteria the numerators used to define an individual as a 'capitalist' because of the missing data.

an exponential increase in the number of capitalists, particularly in the case of white male ownership. In the space of 16 years, from 1875 to 1891, male ‘ownership’ had increased 20 fold, while female ownership had gone from 1 capitalist to 284 capitalists. But from 1891 white female ownership declined while white male ‘ownership’ continued to increase until 1904. From 1904 to 1911 there was a decline in the number of capitalists in the Cape Colony and this could be as result of increasing migration to Johannesburg. Earlier in this paper we saw how the South African War had changed the occupational structure from 1904, through a reduction in secondary sector participation (Figure 2). Kubicek (1972) argues that the capitalists were partly responsible in manipulating events that led to the South African War. The instability that South Africa was experiencing at the time led to capital flight. And it was perhaps this dis-investment in the economy that forced structural change, particular the decline in secondary sector activity. It goes without saying that there were no black capitalists for this period, at least not as recorded in the official records.

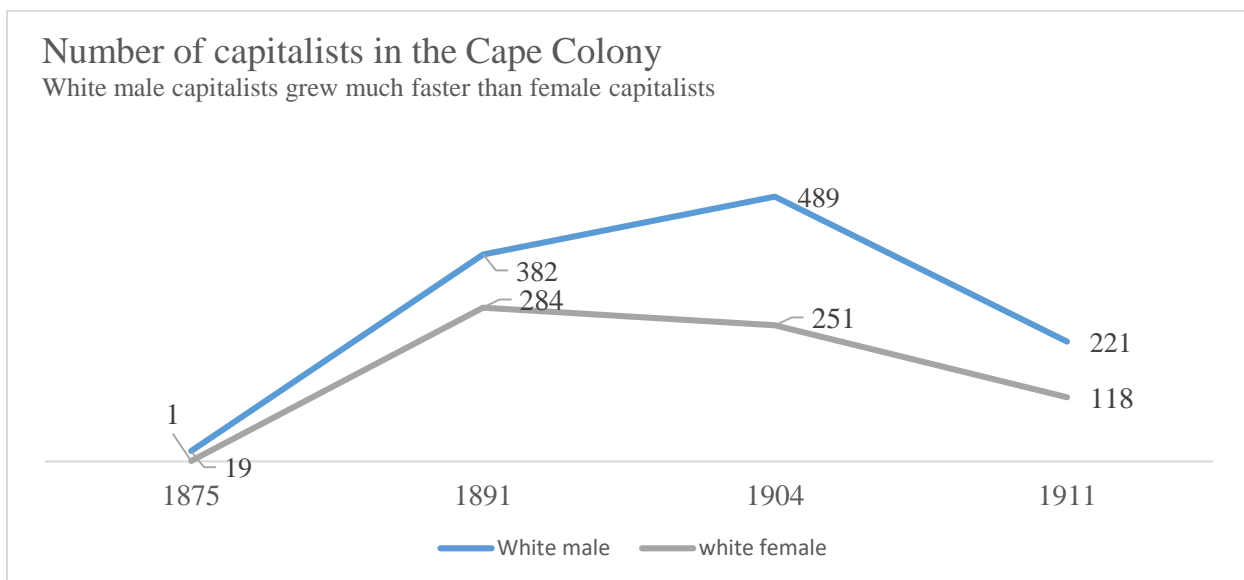


Figure 6: *Number of capitalist in the Cape Colony*

The emergence of a black middle class

Defining the middle class in industrialized, industrializing and postcolonial society is problematic. The middle class is often employed in government and the corporate sector, has no direct ownership of the means of production and is in an adjutant relationship with the capital-owning class. Southall (2004, 2014, 2016) characterizes the black middle class as a group drawing its

primary income from non-manual employment, as white collar workers, managers and professionals. For the study of the emergence of a black middle class such a definition may be too advanced without loose configurations for fluctuations within the formation of class. Economists often distinguish between two definitions of being middle class. First, middle class can be defined by its middle share of the national income distribution. Second, it can also be defined by absolute level of affluence and lifestyle (Visagie and Posel, 2013). This paper defines the middle class following the sociological tradition of class analysis centered on occupational status. This class did not own the ‘means of production’ and does not participate in manual (agriculture) labour (Nzimande, 1990; Southall, 2004; Seekings and Natrass; Seekings, 2008). Instead, the middle class during the nineteenth century would have been literate and skilled technocrats. What often distinguishes middle class from working class is the values (e.g. tolerance) and lifestyle (e.g. dress code). In the following sections, I discuss the black and coloured middle classes respectively. The occupations of the black middle class included qualifying as teachers, clerks, law agents, interpreters, blacksmiths, ministers, telegraph operators and printers. Figures 7 and 8 below show the growth of the selected middle class occupations.

A broader characterization is required to discuss the origins of the black middle class. The black middle class emerged out of a crucible of war and conquest after the Xhosas had suffered nine wars of dispossession and lost much of their land in 100 years between the 1780s and 1880s (Odendaal, Merrett, Winch, and Reddy, 2017:43). Odendaal (1984:286) depicts the black middle class before 1912 as mission educated-elites, ‘equipped to fit into European society by virtue of their education, Christianity and economic assimilation’. Copley (1990:5) gives a comprehensive picture of the black middle class arguing that ‘the missionary endeavor was crucial to the future character of the black petty bourgeois’. The project depended on the promotion of literacy and the English language (Southall, 2014). The spillover effects from mission education meant that Africans could start pushing for involvement in the Cape colonial society, economically, politically, and socially’. It is with this ‘moderate strategy’ that we should analyse the emergence of the black middle class (Odendaal, 1984:286).

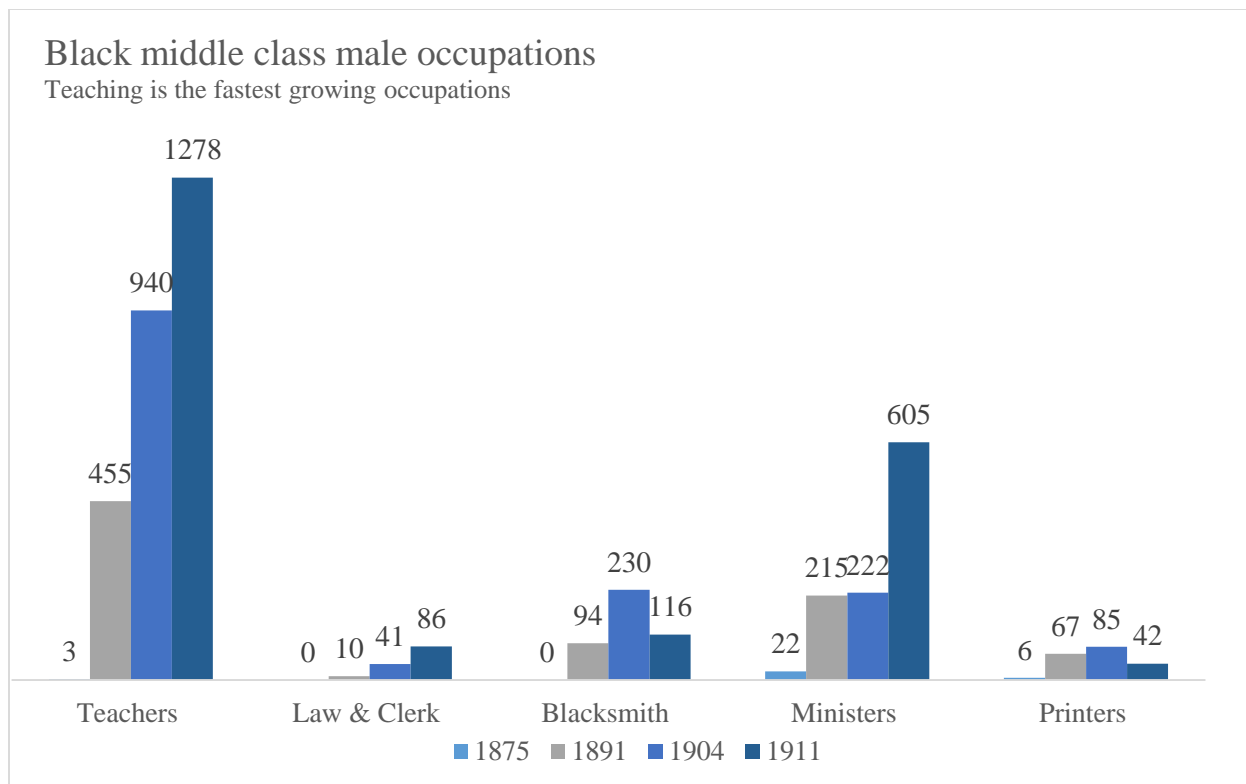


Figure 7: *Black middle class male occupations*

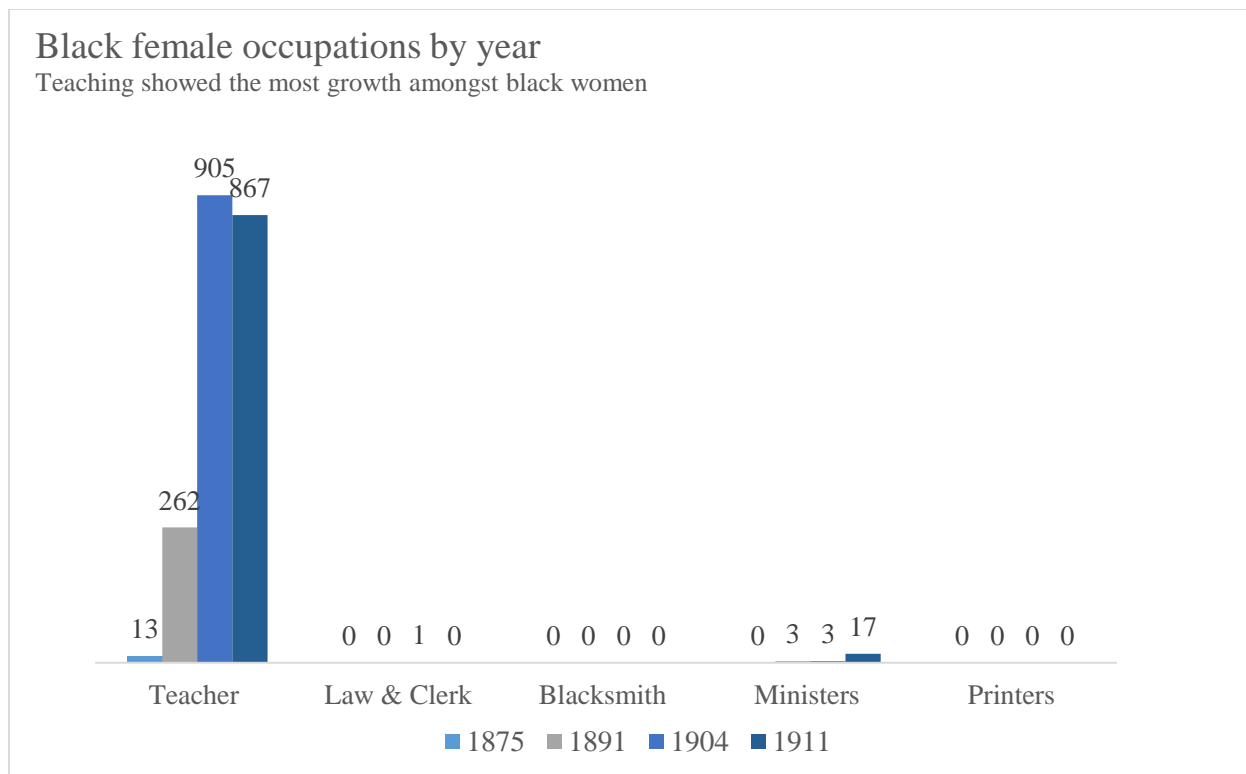


Figure 8: *Black middle class female occupations*

The broad trends show little or no black middle class participation for the selected occupations in 1875. But after 1875 more black males qualify in all these professions, with teacher occupation showing the greatest increase. Another trend is the constant lack of representation, except in the teacher occupation, of women in the late nineteenth century. The final trend is that blacksmiths, telegraph operators and printers were affected by the South African War as there was a decline in the labour participation of black males in particular. The war slowed down the production of goods and services; this in turn affected the value chain of economic participation. The emergent growth of this class would lead to the formation of the South African Native National Congress in 1912.

A careful reading of texts suggests that the emergence of a black middle class had very little to do with the need to overturn colonialism. A large contingent of this mission educated intellectuals were demanding ‘political rights for qualified black people in line with Christianity and British liberal values of equality’ (Odendaal et al, 2017; Plaut, 2016). This process of seeking to assimilate into colonialist society though meant that the black middle class was never concerned about transforming society. One of the reasons the black middle class fought for political rights, particularly voting rights, was that they saw voting as a mechanism through which certain groups

(males, whites) benefited from the mineral revolution. In the Cape, of course, coloureds and blacks could vote, at least those with the required qualifications. However, the black middle class at the time lacked the critical mass to influence the *polis*.

The black middle class would never realize its capacity in production, invention and building in the aftermath of colonialism because they use the ideology of Africanisation or decolonisation to mask what is fundamentally ‘racketeering’ or ‘looting’ (Mbembe, 2015). What this alludes to is the continuation of the structural features that initially locked the black middle class out of economic participation, these would in turn be used by the black middle class to be active participants in maintain the status that seeks to undermine the working conditions and the occupations that black workers participate in.

Coloured middle class

The interest in the middle class in South Africa has predominantly revolved around black upward social mobility. This highlights the lack of attention the middle class as a wider group (including coloureds, Indians and Asians) has received. In fact, the literature has largely focused on the white working class, with no substantial body of work specific to the ‘white middle class’ (Southall, 2016:41). There’s a vast literature on the history of the black middle class as it was essential to the rise of the ANC and black resistance to apartheid. The literature on the Indian and Coloured middle class is just as scarce as work on the white middle class. However, the Indian middle class has received better attention with a focus on merchant capital and entrepreneurship with references to a subaltern Indian bourgeoisie (Padayachee and Hart, 2000). The profiling of Indian and Coloured middle class would require a deep analysis into the historical undergrowth. This paper does not distinguish between Coloureds and Indians when classifying occupations. The term coloured used to refer to coloureds, Indians, Asians and others.

The occupations of the coloured middle class included qualifying as teachers, clerks, law agents, interpreters, blacksmiths, ministers, telegraph operators and printers. Figures below 9 and 10 show the growth of the selected middle class occupations.

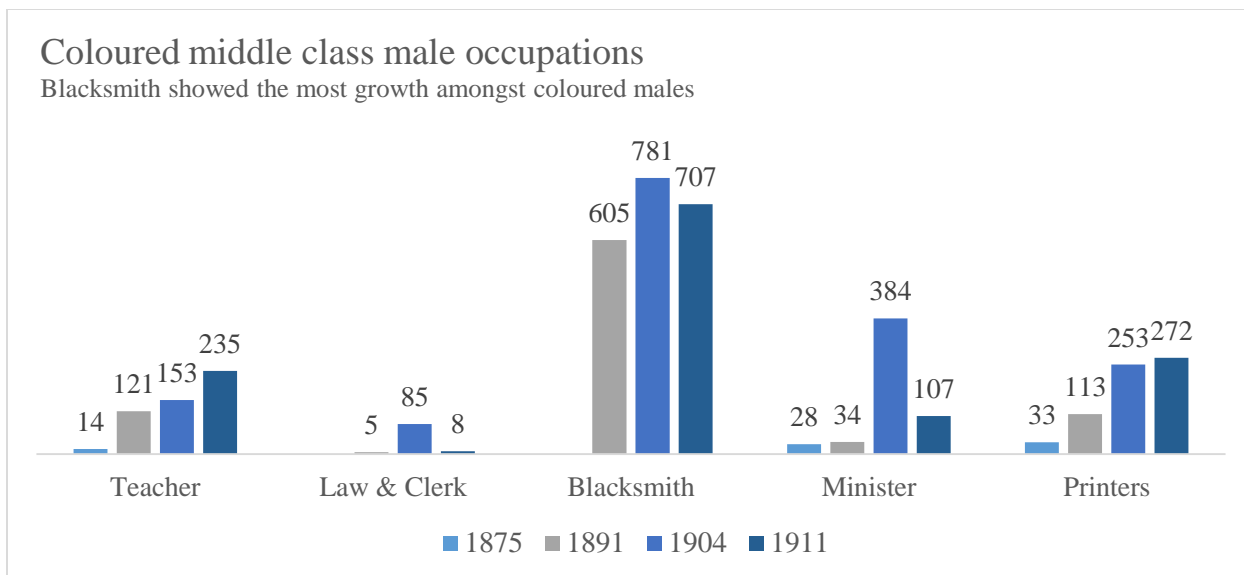


Figure 9: *Coloured middle class male occupations*

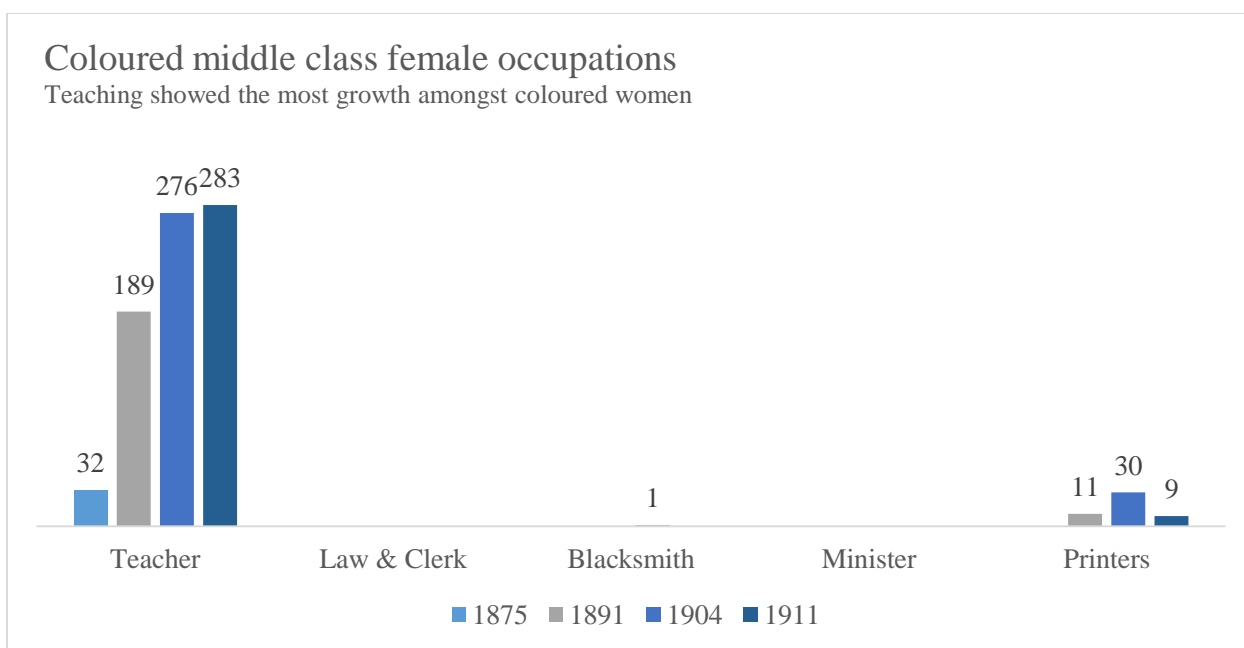


Figure 10: *Coloured middle class female occupations*

The broad trends reveal that there was no coloured middle class before 1875. However, from 1891 there is an emergence of blacksmiths and teachers for male and female respectively. Both these occupations absorb the largest share of the coloured middle class from 1891 to 1911. The emergence of teachers among the coloured community was relatively scarce when compared to black male and female teachers, whose numbers were increasing exponentially. This, according to

Professor Marais, was because coloured children were subjected to inferior mission schools, only a few managed to obtain good middle class education¹⁵ (Simons, 1983). The other male occupations namely teachers, ministers of religion and printers experience a modest increase for the time period. Black middle class had insignificant participation among lawyers and clerks. Identical to black female middle class, coloured female middle class lacks representation in largely all occupations: law and clerk, blacksmith, ministers of religion and printers. It was only within the teaching fraternity where the coloured female middle class had access to participate in the economy.

Conclusion

The mineral revolution, unlike in other parts of the world, did not lead to an abrupt change in the general occupational structure of the Cape Colony from 1875 to 1911. Instead the dynamic period saw an increase in population and geography of the Cape Colony. The use of legislation (hut and poll taxes) to lure black workers into the wage economy brought a radical and racial change to the occupational structure of the Cape Colony. The black male and female occupational structure from 1875-1911 was similar to those of poor countries who have an estimated 80 percent of the population involved in the primary sector. In contrast, the white male and female occupational structures have high structural transformation characterized by a shift from primary to tertiary sectors. White females' occupational structure experienced the highest rate of structural transformation, while white men remaining within agriculture despite the increase in secondary and tertiary sector participation. This state of affairs would constitute the disequilibrium (or evils/curse) that exist within South Africa's occupational structure. The occupational structure would similarly mirror other ills within South African society such as structural racism, structural underdevelopment that failed to foster social cohesion.

Despite the racially 'sticky' nature of the occupational structure of the Cape Colony, modern economic growth was set in motion by the discovery of minerals. The Cape Colony experienced increased per capita and population growth. The colony was urbanizing to produce a consumption city that brought little investment to manufacturing. The development of infrastructure,

¹⁵ The segregated schooling system in the Cape that developed during the nineteenth century led to the establishment of the Teachers League of South Africa (TLSA) that became influential in Coloured politics and the production of intellectuals within the Coloured community (Dick, 2012).

particularly rail networks, were developed to support the profitability of the mines. This infrastructural development was often dictated by capitalists. Capital is instrumental in shaping the occupational structure, as it dictates how investments within the country will be allocated and used. In the Cape Colony, capital was used to extract minerals for the development of Europe, while leaving the Cape Colony structurally fragmented. The spillover effect, or rather than an intended consequence, of the mineral revolution was the emergence of a black male dominated middle class.

Chapter 4 - Occupational Structure of the Union of South Africa in 1911

The Union of South Africa was formed in May 1910 and was composed of four British colonies. Subsequently, the foundational census, also known as the ‘Domesday’ survey, was conducted in May 1911, covering the Union’s industries, agriculture, livestock, population, housing and population (Christopher, 2010a:22). Given that the Union was a constituent part of the British Empire, the imperial government was charged with the responsibility of conducting a census that would form a part of the *Census of the British Empire*; however, the outbreak of World War I never allowed the project to be completed. Nonetheless, the census was undertaken within the tradition formulated by the Colonial Office and the General Register Office in London. The reason it is known as the ‘Domesday’ survey is because of its ‘comprehensive scope and coverage which were never to be repeated, and it remains as a remarkable survey of the country as it attained internal administrative and political independence’. This view of the census document stands in contrast to Statistics South Africa’s (2005:8) idea that the foundational benchmark to measure progress for South Africans begins in October 1996. For example, the 1911 publication consists of close to 1,500 pages of tables covering the population and production of South Africa in that year, and only the 1996 census represented anything close to this magnitude. In addition, the name draws from the Domesday Book of England of 1086, which was so comprehensive in scope as to include major landowners and was considered the book by which everyone would be judged come the biblical judgment day (William and Martin, 2002). The similarity between the two books is that they remained without comparable surveys for more than a century at least.

Given the historical importance of the census as a foundational document, one would have thought that *South Africa 1911* would be a source of intense academic study in historical geography and economic history. However, this is simply not the case. There have been limited cross-sectional views, from historical geography, looking at the evolution of Southern Africa and the impact of European settlement (Pollock and Agnew, 1963; Christopher, 1976). In economic history this dissertation is the first to provide a detailed analysis of the occupational structure of the Union of South Africa. Despite the wide-ranging scope and inclusiveness of the census, Christopher (2010a) argues that the subsequent destruction of most of the underlying working documents and the

absence of detail in the published reports of the census make impossible the geographical studies of household structure, population migration and to some degree occupational segregation.¹⁶

In this chapter, I provide a static analysis of the occupational structure of the Union in 1911, and observe the occupational structure of each of the four constituent provinces. Table 6 shows the published statistics that were produced in 10 separate parts. Christopher (2010a) offers a brief summary of the different parts, but for the purpose of this paper we will only focus on occupations. Occupations data is the most comprehensive part of the tabulations, the production of which must have been a laborious and time-consuming task of processing the classifications. The time constraints within which to produce the census meant that the classification scheme adopted for the Cape of Good Hope in 1891 was used for the whole country. The changes in the classification of White farmers' wives from 'agricultural' to 'dependents' rendered comparability with the earlier enumerations dubious, and reflected the general trend to equate occupation more closely with paid employment. Thus, the classification scheme was layered with multi-levels of complexity stemming from 8 classes, 18 orders, 66 suborders and 429 'items' or closely linked occupations, supplemented by an even longer list of individual occupations. Therefore, very little work could be presented at the district or urban centre level, and the detailed published tables were limited to the national and provincial levels.

Table 6: *Contents of the 1911 Census*

Part	Contents	No. Pages	Government printer's date (1900's)
I	Population and dwellings	93	17-Jan-12
II	Ages	139	4-Apr-12
III	Education	119	2-May-12
IV	Conjugal condition	89	6-Jun-12
V	Occupations	477	2-Jul-12
VI	Religions	61	15-Aug-12
VII	Birthplaces	75	22-Aug-12
VIII	Infirmities	153	22-Oct-12
IX	Livestock, agriculture, irrigation, etc.	159	7-Dec-12
X	Supplementary tables	87	17-Dec-12

¹⁶ British censuses and the detail contained therein have conversely made possible the geographical studies of household structure, population migration and occupational segregation. This has led to the establishment of The Cambridge Group for the History of Population and Social Structure. The group is primarily concerned with tracing the occupational structure of Britain 1379-1911. <http://www.campop.geog.cam.ac.uk/research/occupations/>

Source: South Africa, 1912

The South African economy by the time of unification was heavily dependent on the primary sector, with agriculture and mining constituting 59.5 per cent and 8.8 per cent of economic activity respectively. The tertiary sector formed the second largest sector at 26.5 per cent, but the spread was among different sectors of the economy. South Africa's secondary sector remained small at 4.7 per cent (Figure 12). South Africa at union was the most industrialized state on the African continent. The Belgian Congo was the second most industrialized state. For example, the sectoral employment of the total labour force in the Belgian Congo in 1934 was estimated at 96 per cent in the primary sector, 2.5 per cent in the secondary sector and 1.5 per cent for the tertiary sector (Frankema, Haas and Juif, 2016). The work of da Silva (2016), shows that Mozambique's economy in 1930 was largely dominated by the primary sector, estimated at 97 per cent. And after 20 years (1930-1950) Mozambique was still behind South Africa structurally with the primary sector estimated at accounting for 85 per cent of the economy.

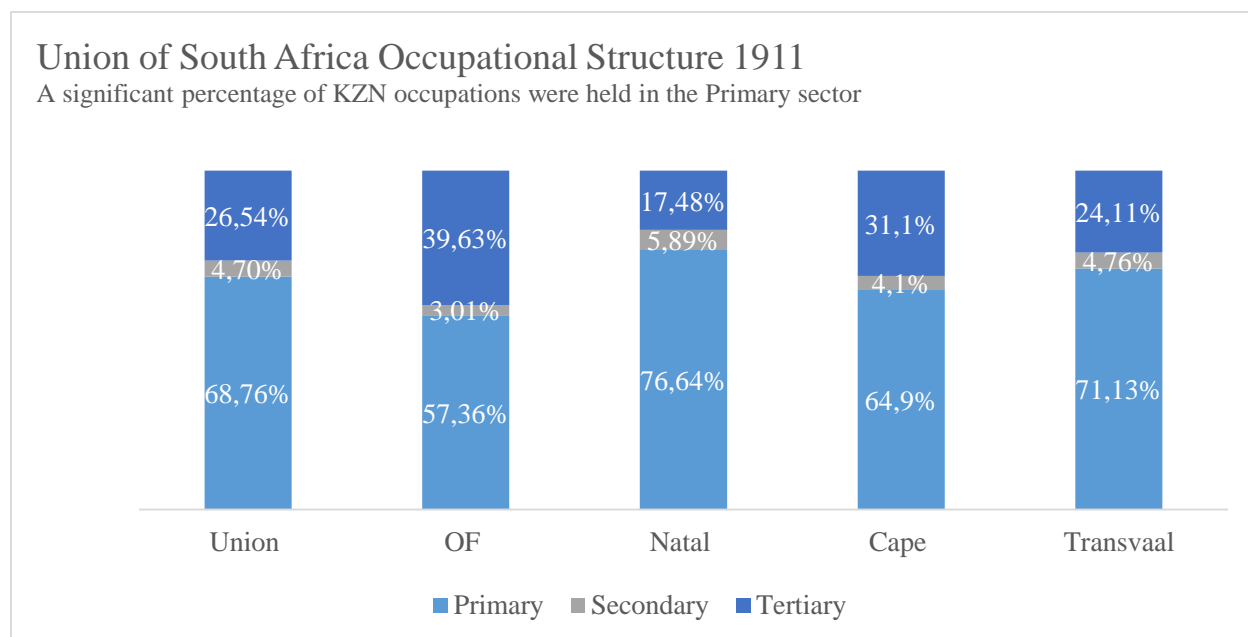


Figure 11: *Union of South Africa Occupational Structure 1911*

Despite being the most industrialized country in Africa, beneath the surface the occupational structure remained highly stratified along racial lines. In fact, the occupational structure of black South Africans resembled that of the rest of the African continent, with the estimated participation

of over 87 per cent of males and females in the primary sector. In contrast, white and coloured males were estimated at 45 and 51 per cent respectively active in the primary sector. White and coloured females had small representation in the primary sector at an estimated 7 per cent for both races (Table 7).

Table 7: *Speculative overall estimates of the Union of South Africa 1911*

Speculative overall estimates of the Union of SA 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	37.1%	7.1%	64.5%	86.2%	45.0%	6.9%	59.8%
Mining & quarrying	7.9%	0.0%	22.1%	0.0%	5.4%	0.1%	8.8%
Rest of primary	0.5%	0.0%	0.1%	0.0%	1.4%	0.0%	0.2%
Clothing	0.7%	2.0%	0.0%	0.0%	0.8%	0.6%	0.3%
Building & construction	5.3%	0.0%	0.3%	0.0%	4.0%	0.0%	0.9%
Rest of secondary	11.3%	0.3%	2.6%	0.0%	16.2%	2.9%	3.4%
Dealers	1.8%	0.9%	0.1%	0.0%	1.3%	0.3%	0.4%
Professions & services	11.1%	6.7%	1.0%	0.5%	4.3%	5.5%	3.3%
Transport & communication	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of tertiary	24.3%	83.0%	9.3%	13.2%	21.5%	83.7%	22.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 11 above shows the occupational structure of the Union in 1911 and how it compared to the four provinces. The prevailing narrative of occupational structures is that economic development and urbanization often resemble a decrease in primary sector participation, and a concomitant increase in secondary and tertiary sector participation (Shaw-Taylor and Wrigley, 2014). The literature on the economic development and urbanization levels of Natal and Orange Free State suggest that these colonies had little economic development and urbanization taking place. The Cape Province and Transvaal, however, were major economic centres with increasing interest in mining and agriculture, and these regional economies were in contradiction to this narrative of economic development and urbanization with greater participation in the primary sector. The main reason for this apparent contradiction is, first, the fact that mining and quarrying are classified within the primary sector, which does not capture the economic importance of mining (gold mining in particular) and quarrying, coupled with the technological sophistication brought

about by the industry in the nineteenth century¹⁷. Second, mining and quarrying had spillover effects such as infrastructural development e.g. railways. The gold (and diamond) rush meant an increase in the population of the Transvaal and the Cape Province, and this led to an increase in demand for food production, leading to high demand for agricultural activity. Charles van Onselen's (2001) documentation of everyday life on the Witwatersrand in 1886-1914 reveals the changing nature of economic development and urbanization, more importantly, the development of new occupations e.g. prostitution, domestic servants and jobs in the liquor industry that arose as a result of the growth of gold mining within the Transvaal. In 1888 already, 500 bars were doing business in Johannesburg's area of about 1.5 square miles. By 1895, Johannesburg had 97 brothels. This demonstrates the painstaking disadvantage of lacking micro-level data, as we are unable to analyse the granular detail that is necessary for understanding economic development and urbanization in the nineteenth century.

Provincial Occupational Structures

Transvaal - Male

The white male occupational structure of the Transvaal was the most sophisticated of all four provinces. The total population of the Transvaal stood at 1 686 212. Black people constituted more than 70 per cent of the total population. The percentage of people without occupation or whose occupation was unstated was the lowest among all four provinces at 35.2 per cent (Appendix: Table 16). More specifically, white males' secondary sector participation was the highest among all provinces at 21.3 per cent, with building and construction constituting 8.1 per cent. Primary sector participation was 46.6 per cent, working within agriculture and mining and quarrying. The tertiary sector labour participation was at 32.1 per cent, with professions and services, at 14.8 per cent, employing close to half of the people in that sector.

Table 8: *Speculative Overall estimates of the Transvaal colony 1911*

Speculative overall estimates of the Transvaal colony 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	28.7%	10.3%	35.7%	88.5%	21.0%	15.1%	46.5%

¹⁷ The mineral revolution that propelled South Africa from a backwater into a target for massive foreign direct investment that would transform the country into one of the economic powerhouses of the 20th century, depended on first diamonds and gold, then copper, coal, iron ore and other resources.

Mining & quarrying	17.9%	0.0%	48.7%	0.0%	15.9%	0.0%	24.7%
Rest of primary	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clothing	0.9%	2.0%	0.0%	0.0%	1.1%	0.7%	0.3%
Building & construction	8.1%	0.0%	2.4%	0.0%	4.0%	0.0%	1.2%
Rest of secondary	12.3%	0.5%	3.7%	0.0%	4.2%	0.1%	3.2%
Dealers	1.7%	0.7%	0.1%	0.0%	1.7%	0.0%	0.4%
Professions & services	14.8%	5.9%	3.1%	0.4%	12.0%	8.5%	3.5%
Transport & communication	0.1%	0.0%	5.3%	0.0%	0.1%	0.0%	0.0%
Rest of tertiary	15.4%	80.6%	1.1%	11.1%	40.0%	75.5%	20.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Black male occupational structure at face value resembled an underdeveloped structure with primary sector participation at 84.36 per cent. However, a closer look suggest that the occupational structure was more sophisticated with a large proportion of black males employed in mining and quarrying at 48.7 per cent. Agricultural participation was at 35.7 per cent. Black male secondary and tertiary sector participation was relatively small at 6.05 per cent and 9.59 per cent, respectively. Coloured males, similarly to black males, had low levels of secondary sector participation. Primary sector participation of coloured males was at 53.82 per cent with more than 12 percent in the profession and services industry. Primary sector participation was shared between agriculture at 21 per cent and mining and quarrying at 15.9 per cent (Figure 12). Despite the apparent sophistication in the occupational structure of black and coloured males, secondary sources (Feinstein, 2005), are littered with wage differentials between the different race groups. And this shows that despite the tendency or drift towards ‘occupational symmetry’, the wage distribution was asymmetrically beneficial towards whites.

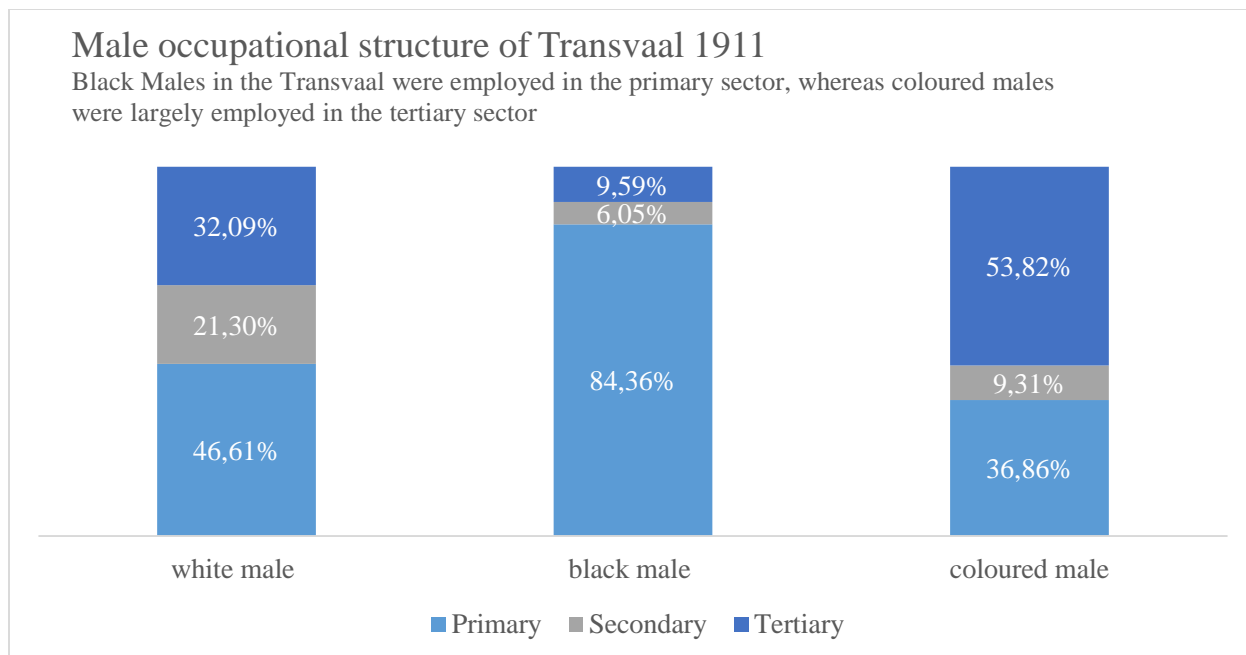


Figure 12: *Male Occupational Structure of Transvaal 1911*

Transvaal - Female

Female occupational structure of white and coloured females was similar, dominated by tertiary sector participation with 87.23 per cent and 84.09 per cent respectively. Within the tertiary sector it was the professions and services that represented a significant amount of employment for both white and coloured women at 5.9 per cent and 8.5 per cent respectively, together with a composition of other occupations known as ‘rest of tertiary’. Primary sector participation for both these races remained small with whites at 10.34 per cent and coloureds at 15.12 per cent.

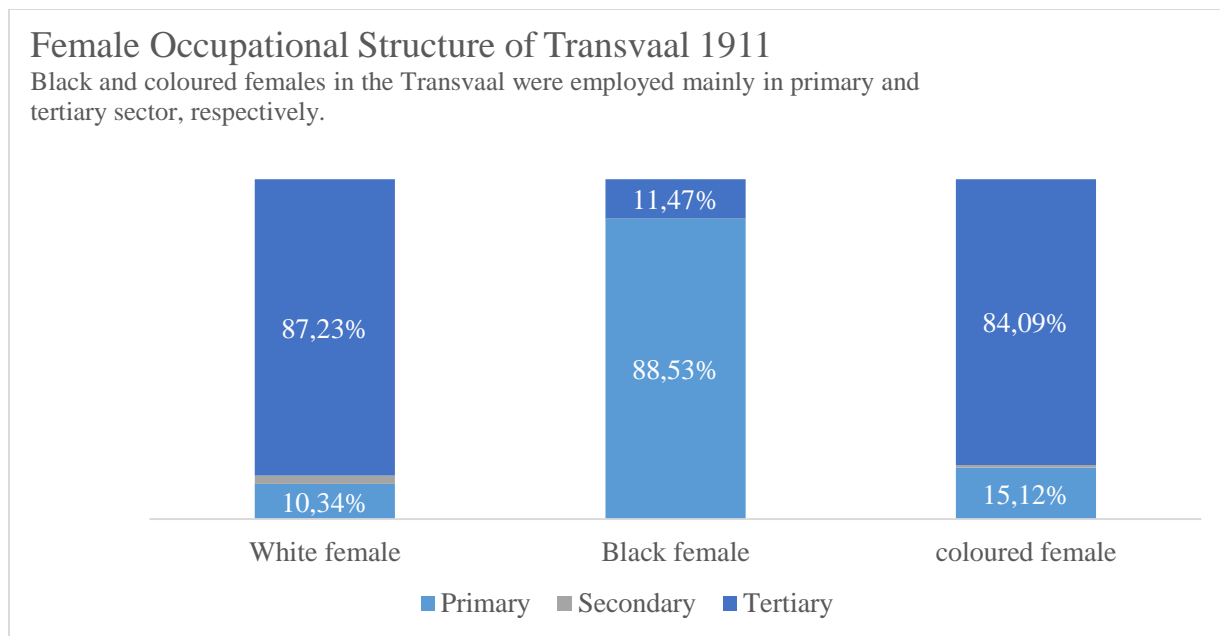


Figure 13: *Female Occupational Structure of Transvaal 1911*

In the Transvaal secondary sector female participation was extremely small for all race groups. This pattern of low absorption rates of women in the secondary sector has changed very little in contemporary South Africa. The lack of secondary sector advancement for females refers largely to the lack of development within the textile industry, where women within industrializing economies were employed (Wrigley, 2014). Black females had low levels of participation within the tertiary sector at 11.47 per cent. On the other hand, primary sector participation of black females was mainly dominated by agriculture at 88.5 per cent. Black females' extremely high participation within agriculture could be seen as labour supplementation, where white men, black men, and white women, took up other occupations and black women often filled the gap within the agriculture.

Natal - Male

Natal had a total population of 1 194 043. Black people constituted roughly 80 percent of the population. 'Unemployment or unstated' occupation was a staggering 40.5 per cent, of which black males were the majority of those 'unemployed or unstated' at 45.5 per cent. Figure 14 below shows estimates of male occupational structure in Natal in 1911. The white male occupational structure of Natal shows greater participation in the secondary and tertiary sectors than Transvaal. And this was particularly in the building and construction occupation. Conversely, there was less

participation in the primary sector. Black males made up more than three quarters of the primary sector with agriculture being dominant. But black males only accounted for 12.20 per cent in the tertiary sector and remained largely insignificant within the secondary sector. Coloured males were relatively evenly distributed across all three sectors, with around one third constituting each sector. In the primary sector, this was mainly in agriculture, and in the tertiary sector in professions and services.

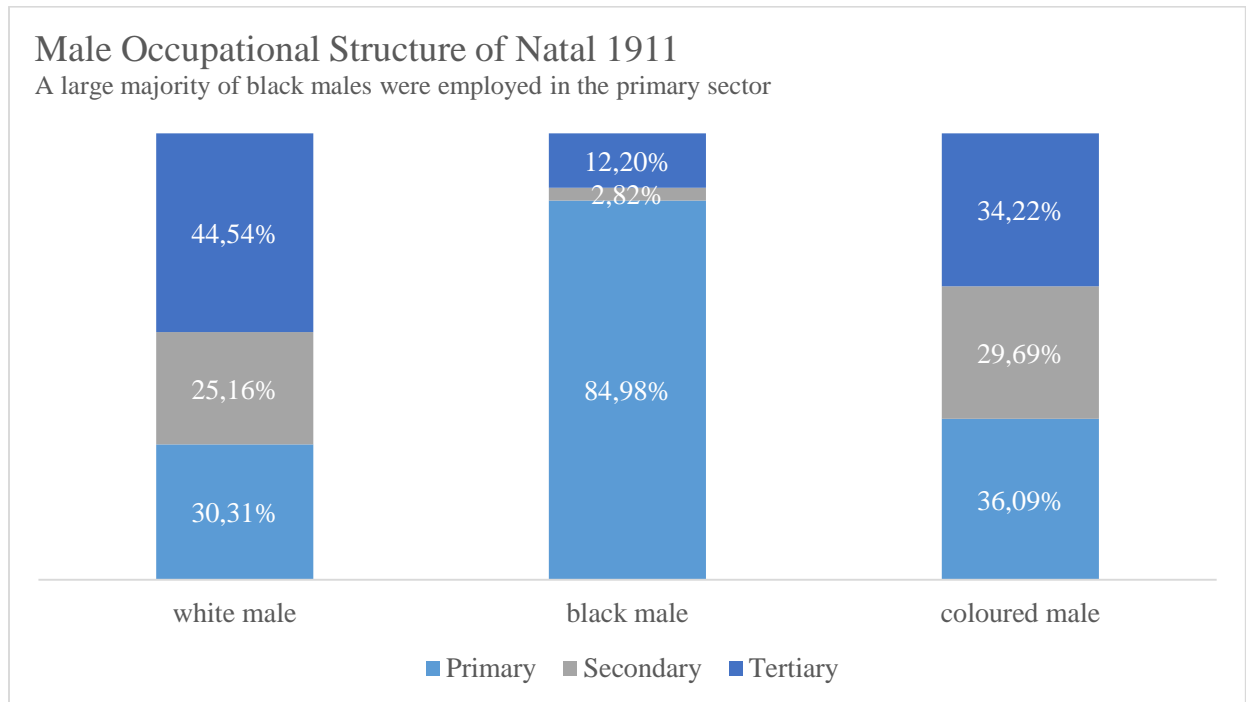


Figure 14: *Male Occupational Structure of Natal 1911*

Natal - Female

Figure 15 below demonstrates the occupational structure of the female labour force. Natal and Transvaal had similar structural characteristics. First, the white and coloured female labour force had considerably more than 74 per cent likelihood to be employed in the tertiary sector, particularly in the profession and services occupation. The rest were predominantly engaged in the primary sector, especially in agriculture. Secondly, black female members of the labour force, similarly to the position in the Transvaal, were predominantly (97.4 per cent) employed in the primary sector, most being engaged in agriculture. The common trend across all race groups is that secondary sector participation was insignificant. Black female representation was insignificant in the tertiary

sector. Female unemployment or ‘unstated’ occupation was the highest among coloured females at 42.5 per cent. Black and white females were both below the 40 per cent mark of unemployment or ‘unstated’ occupations.

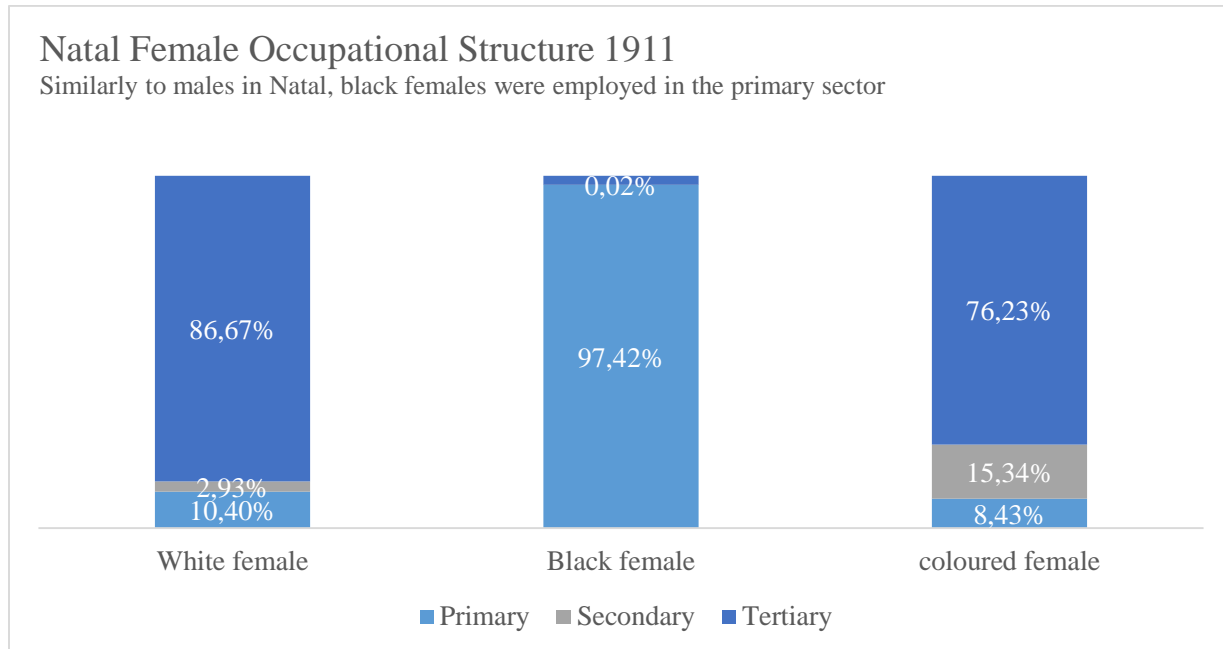


Figure 15: *Natal Female Occupational Structure 1911*

Orange Free State - Male

Figure 16 below shows the labour force composition of the Orange Free State in 1911. The Orange Free State had the lowest total population (528 174) amongst the four provinces. The ‘unemployed or unstated’ occupational group of 40.7 per cent of the total population of the province was the highest among the four provinces. In addition, white males had the highest incidence level of being ‘unemployed or unstated’ at 39.5 per cent. White male workers were more likely to be employed in the primary sector, being principally engaged in agricultural employment, but less likely to be employed in the tertiary sector and slightly less likely in the secondary sector. Black male members of the labour force were more likely to be employed in the primary sector, engaged mainly in agriculture (65.1 per cent) and mining and quarrying (11.9 per cent). Black male tertiary sector employment was at 20.6 per cent. Coloured male members of the labour force made up more than half of the primary sector but accounted for more than one third of the tertiary sector in the

profession and services sector. Black and coloured males had relatively low secondary sector participation.

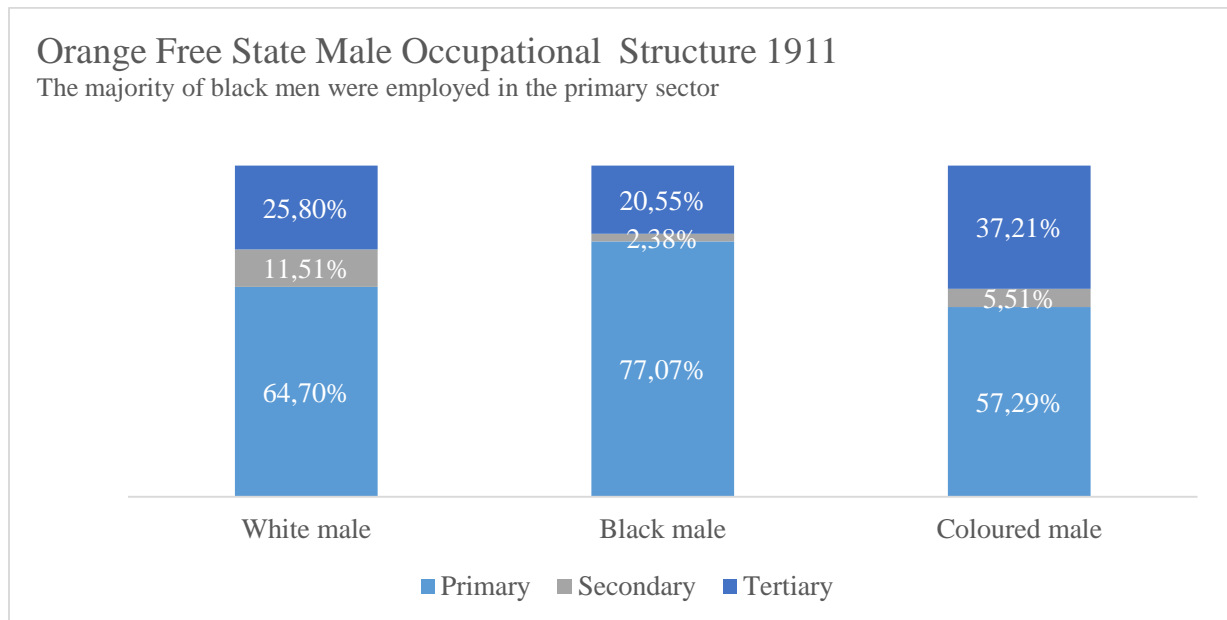


Figure 16: *Orange Free State Occupational Structure 1911*

Orange Free State - Female

Figure 17 below shows that the Orange Free State's white and coloured female occupational structure was similar to those of the Transvaal and Natal, with more than three quarters of white females (85.5 per cent) and slightly less than three quarters for coloured females (72.6 per cent) being employed in the tertiary sector, especially in the profession and services occupation. Primary sector participation accounted for more than half the black female members of the labour force, but less than one third for coloured females in the primary sector and an estimated 12.1 per cent for white females. Black female members in the tertiary sector constituted 43.8 per cent of the black female labour force, largely employed within profession and services. The common trend across racial lines was the relatively small size of secondary sector participation. The Free State was an impoverished province and poverty was most rife among white people. For instance, the highest incidence of 'unemployment or unstated' was recorded among white females at 46.1 per cent. In other words, from all race groups white females recorded the highest incidence of 'unemployment or unstated' (Appendix: Table 20).

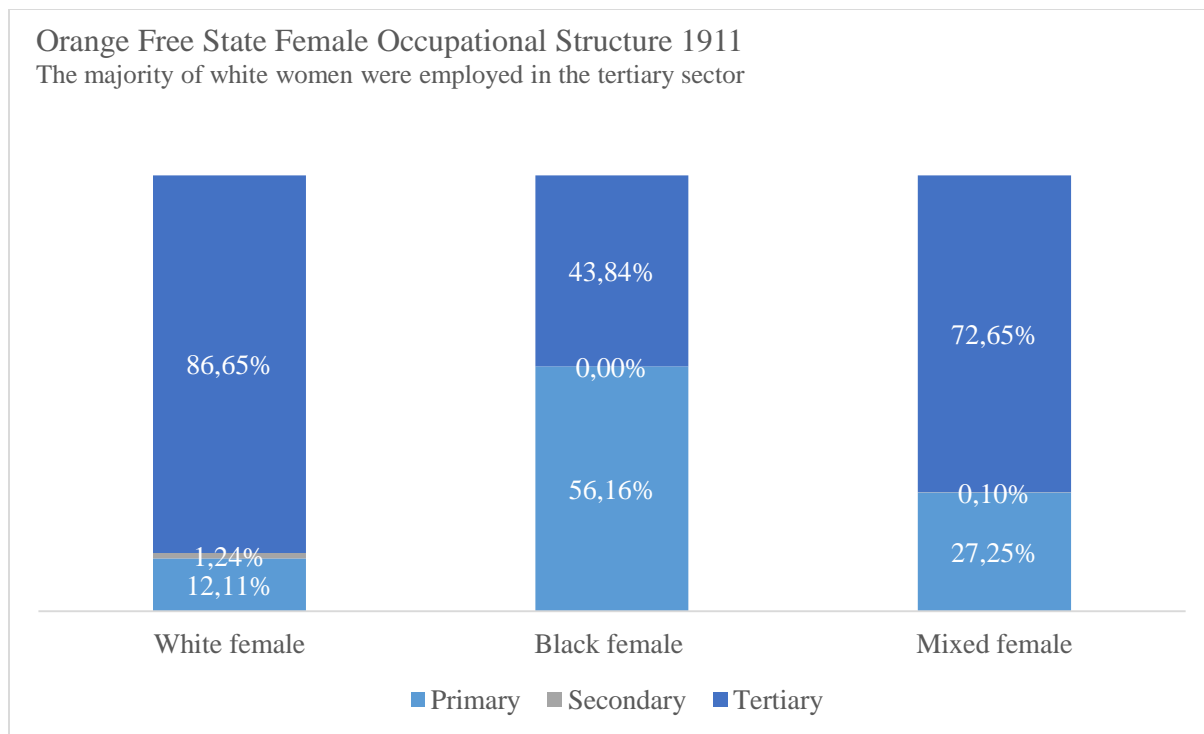


Figure 17: *Orange Free State Female Occupational Structure 1911*

Cape Colony - Male

The Cape of Good Hope was the most sophisticated province of them all and was the most developed at the time. It also covered the largest area geographically within South Africa. The Cape had the first mover advantage in the mineral revolution, with the Kimberley diamond mines falling within this province. Therefore, all infrastructural development that flowed to extract diamonds from the mines or transport with people rushing to the mines benefitted the economic development of the Cape before any other province. It necessarily follows that the Cape of Good Hope had the largest total population of 2 564 965. The black population, similar to that of the other provinces, remained the largest at an estimated 60 per cent. On the other hand, the Cape of Good Hope had the second lowest incidence of ‘unemployed or unstated’ people at 38.3 per cent. And white males were the highest in this category at 40.1 per cent. The low levels of unemployment in the Cape were consistent with the idea that economic growth leads to a reduction in unemployment.

Figure 18 below shows the male occupational structure of the Cape Colony. White and coloured male members of the labour force had a similar structure, with an estimate of 48 per cent and 61 per cent, respectively, of the workers employed in the primary sector. Secondary sector participation is estimated at 16 per cent or more for both races. Tertiary sector employment for white males was at 36 per cent and 23 per cent for coloured males. Black male members of the labour force were predominantly engaged in the primary sector, in particular agriculture, at 87.1 per cent. Secondary and tertiary sector participation for black males remained limited, if not insignificant.

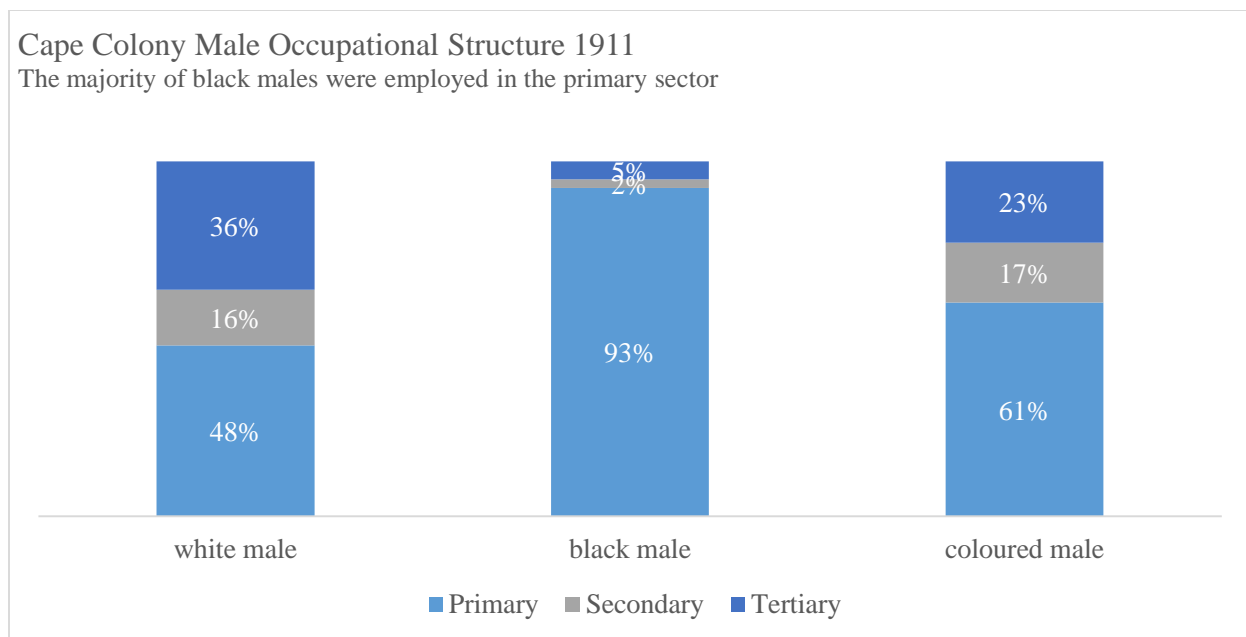


Figure 18: *Cape Colony Male Occupational Structure 1911*

Cape colony - Female

Figure 19 below shows that the female occupational structure of the Cape Province had a similar structure to those of the other three provinces in that white and coloured female members of the labour force had more than three quarters of the workers in the tertiary sector mainly involved in profession and services. Black female members of the labour force were mainly employed in the primary sector with more than three quarters (84.5 per cent) in that sector occupied in agricultural labour. Tertiary sector participation for black females was 15.47 per cent. Jointly, secondary and primary sector employment remained insignificant for all three race groups. The highest incidence

of those who do not form part of the labour force or occupation structure strictly speaking, was recorded among white females at 41.6 per cent (appendix: Table 22).

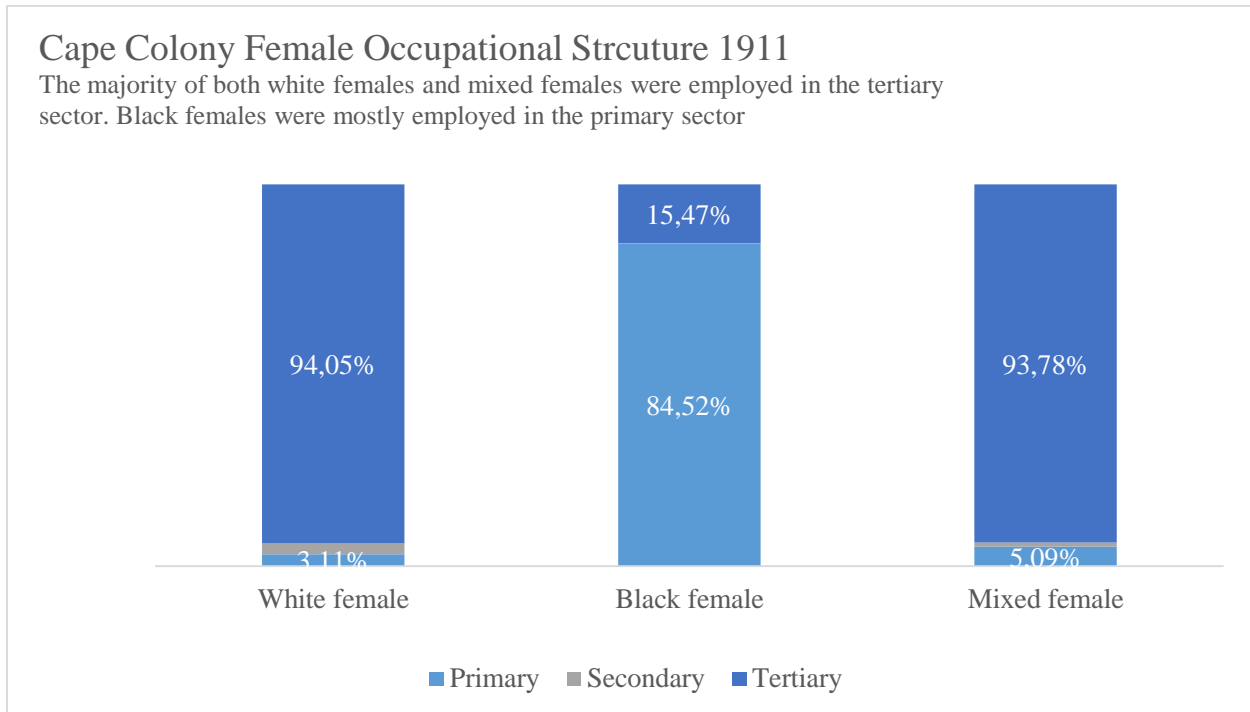


Figure 19: *Cape Colony Female Occupational Structure 1911*

Black middle class

In the previous chapter, I discussed how mission education in the Cape Colony from the mid-nineteenth century ushered in the emergence of a black middle class before 1911. In this chapter we assess the status of the black middle class at the formation of the Union of South Africa. According to Southall (2016) the overwhelming characteristic of the black middle class during this period was its small size and the limited opportunities for social upward mobility. The character of the black middle class of the nineteenth century has been a subject intense scrutiny. Paul Maylam (1986) thought of the black middle class as the African petty bourgeoisie that held superior economic positions and better lifestyles compared to the rank and file. Wolpe (1986) thought the black African middle class was located between the state and the black population it ruled and between white capital and the black working class. Southall (2016) states that at the formation of the Union the black middle class could be identified by its employment in professional, services and clerical spheres. In addition, the status resulted from education, literacy,

lifestyle, political authority and the values of individual accumulation. The cornerstone for the origins of the black middle class during the nineteenth century remains the educational efforts of the Christian missionaries (Giliomee and Mbenga, 2007; Welsh, 2000; Worden et al, 2004).

Figure 20 below shows black middle class male occupations for the year 1911. A large share of the black middle class from the selected occupations were employed as teachers and the Cape Colony had the highest number of teachers among the colonies. The other significant occupation was the ministers of religion of whom the majority were from the Cape. The South African Native National Congress, which later became known as the African National Congress, had many teachers and ministers that were mission educated. Occupations such as the law and clerks, blacksmiths and those involved in printing formed a relatively small portion of the black male middle class. Figure 21 below shows the coloured male middle class that was predominantly employed in more ‘technocratic’ occupations like blacksmithing and printing. The dominant occupation was being a blacksmith. Unlike the black male middle class, the coloured male middle class had a very small segment involved in teaching.

Alfred Mangena was born in Escort in present day Kwazulu Natal circa 1879. He completed his studies abroad and returned home in 1910 to become the first black South African to qualify as an attorney. In 1911, Pixley Seme qualified as the second black African attorney (Joyce, 1999). Dr. Abdullah Abdurahman was a medical doctor, and in 1914 became the first coloured person to be elected to the Cape Provincial Council. John Langalibalele Dube was born into royalty, his father Reverend James Dube being one of the minor Zulu chiefs of the AmaQadi tribe and one of the first ministers ordained by the American Zulu Mission. It was Dube’s grandmother Dalitha (first convert of the Lindley Mission Station in Inanda) in the 1840s, however, who wanted a break away from the traditional AmaQadi way of life, for the Christian way which was associated with middle class values of ‘freedom, education and civilization’. John Langalibalele went on to become an educator, politician, religious minister among other occupations (Hughes, 2011). These anecdotes show that the emergence of the black and coloured male middle class was interwoven with the influence and growth of mission education. The members of the black and coloured middle class often held more than one occupational title.

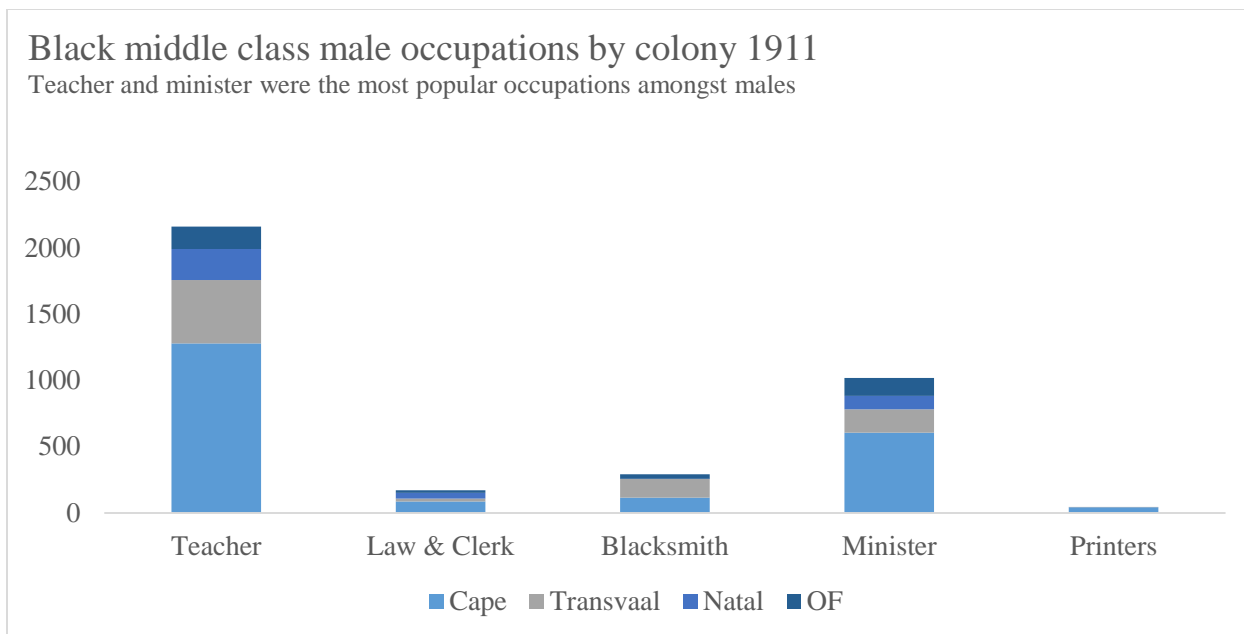


Figure 20: *Black middle class male occupations by colony 1911*

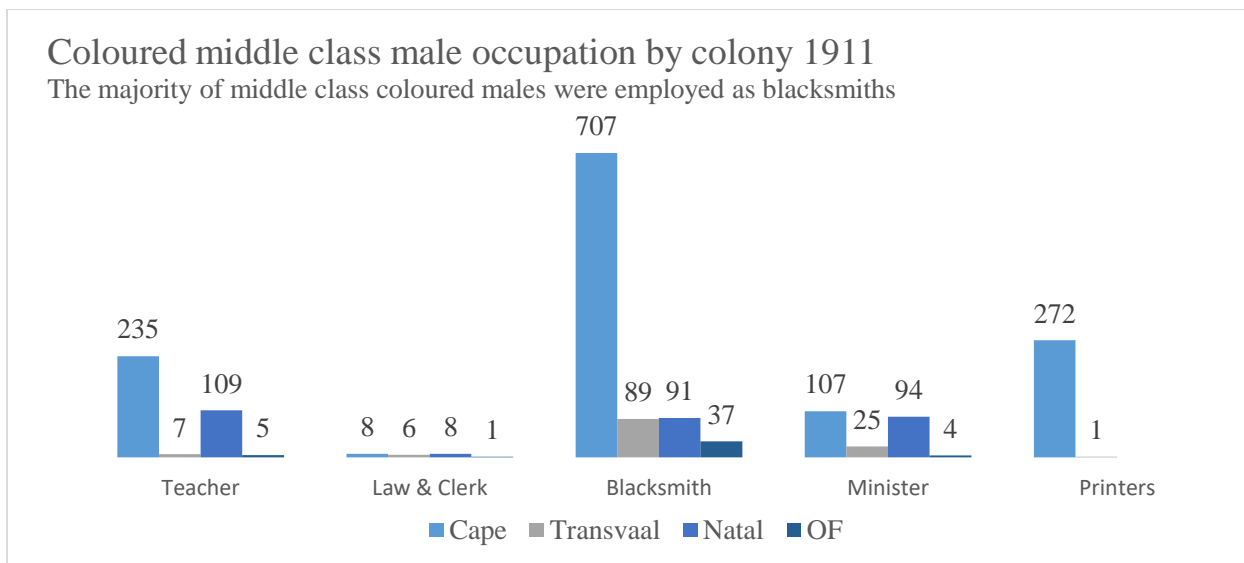


Figure 21: *Coloured middle class male occupation by colony 1911*

Figures 22 and 23 below show the low levels of participation from the black and coloured female middle class from selected occupations, except as teachers. Black and coloured women were primarily employed as teachers, with either no or very little participation in other sectors of the economy. The lack of black and coloured female participation in industry meant that the only substantial form of paid employment was as domestic servants (Feinstein, 2005). The other prominent middle class occupation among females that does not appear in the selected data is

nursing. Cecilia Makiwane, for example, was registered as the first black professional nurse in 1908. Prior to her nursing qualification, she had a teacher's certificate from Lovedale girls' school. Makiwane was born into a middle class home where the father was a teacher and a religious minister. The wife of Alfred Mangena, A.V. Ncobela, was also a nurse from Natal. Charlotte Maxeke was mission educated, later she attended Wilberforce University in 1896 where she became South Africa's first black women to graduate with a B.Sc. degree (Brody, 1998). Women just like the men also held more than one occupational title. The difference between male and female employment is that there were significantly more men employed among selected occupations. The issue of by-employment, however, cuts across the gender divide and is prevalent within both black and coloured middle class.

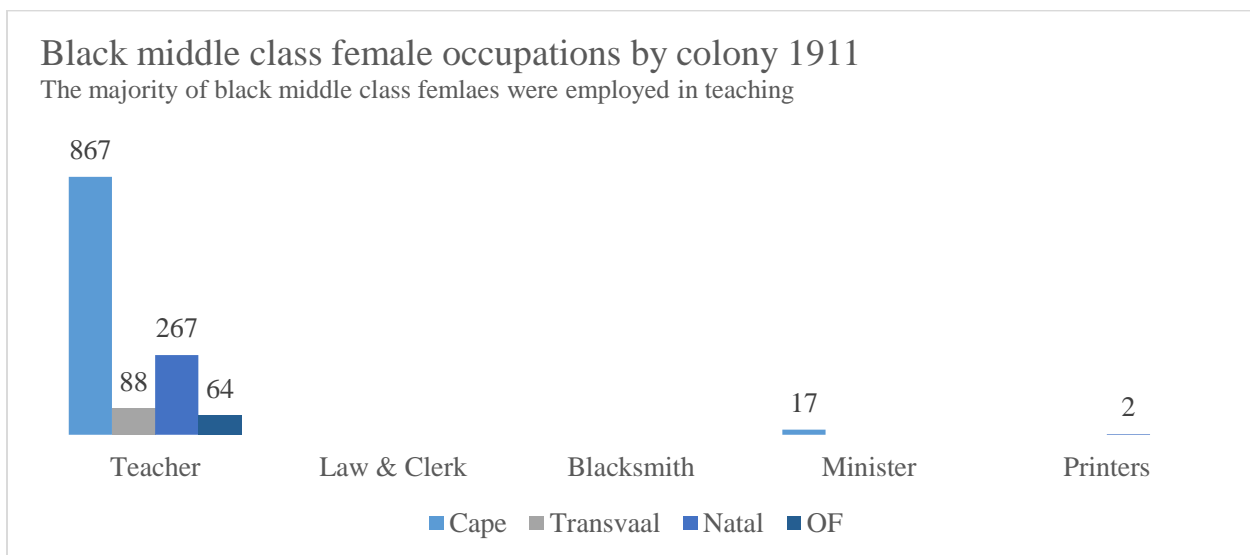


Figure 22: *Black middle class female occupations by colony 1911*

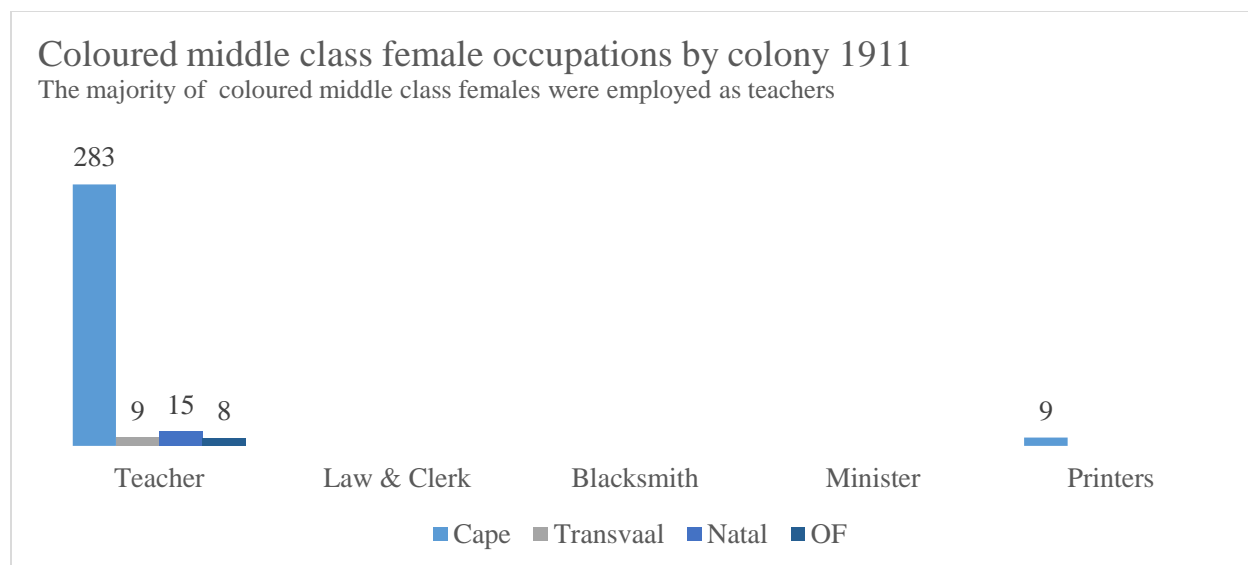


Figure 23: *Coloured middle class female occupations by colony 1911*

Conclusion

The PST system at a national and provincial level shows South Africa to have been an ‘underdeveloped economy’ in 1911, with high levels (estimated at greater than 70 per cent) of participation in the primary sector, followed by employment in the tertiary sector and the small secondary sector. When we take a closer look at geographic location it becomes apparent that the occupational structure was segregated along racial and gender lines. The emergent trends were, first, that the white and coloured male occupational structure was the most developed across all provinces. In other words, both these race groups experienced decreasing levels of primary sector participation, and conversely increasing secondary and tertiary sector participation across all provinces. Second, the black male and female occupational structure remained underdeveloped with an estimated 75 per cent (except for females in the Orange Free State) participating in the primary sector, and an insignificant participation in the secondary sector for all provinces. Third, white and coloured females had a similar occupational structure with high levels (greater than 70 per cent) of tertiary sector participation. All female groups had insignificant participation in the secondary sector, except for females in Natal (15.4 per cent).

The racial segregation of the occupational structure does support the narrative that the accumulation of wealth that circulated from the exploitation of minerals was widening racial inequality in the twentieth century. However, it was not only capital accumulation that contributed

to the racial inequality: the migrant labour system was critical in sustaining and generating higher levels of income for the mines. First, the lack of migration data across provinces makes it difficult to quantify how many people were moving from the rural areas to the urban centers. Nonetheless, Wilson (2011) argues that the heartbeat of South Africa's industrial revolution rested on the large proportion of black male workers who migrated between rural and urban centers where they came under contract work. Second, the migrant labour system was destructive for social and economic development. It thwarted the normal process of urbanization that industrializing countries undergo, that is the need for building family homes, schools, parks and general infrastructure. Third, black women were 'locked-out' of the urban centres and that meant the secondary income stream that would alleviate the economic pressures was no longer there. In other words, the shared responsibility of family life no longer existed.¹⁸ Fourth, the weakness of the census data is that it does not provide scope to understand the role of foreign migrants from Tanzania, Zambia and elsewhere. We know historically their importance in keeping black wages low in real terms. The long term consequence of these patterns of accumulation is reflected in the occupational structure, whereby in the urban centres, particularly the Transvaal and the Cape Province, the black male occupational group was predominantly occupied in mining and agriculture. Black female economic activity was mainly confined to the agricultural sector. During the course of the twentieth century this pattern continued to deepen as discriminatory laws were made more stringent after 1911.

In juxtaposition to the idea that accumulation of wealth that circulated from the exploitation of minerals was widening racial inequality in the 20th century, was the emergent and rapidly increasing size of the black middle class. What is evident from the anecdotes is that part of the increase in the middle class was driven by a culture that was developing among black people who were embracing education, literacy, lifestyle, political authority and the values of individual accumulation and were encouraging their children to attend mission school. The nineteenth century black middle class was different in that it was not the pillar of the country that played a critical role between capital and working class.

¹⁸ The Carnegie Commission when investigating white poverty noted the importance of factory jobs for white women to support their families (Report on the Carnegie Commission 1932). In contrast, black women were prevented access to urban centers through the pass laws.

Chapter 5: Union Occupational Structure 1911-1951

In the aftermath of the formation of the Union of South Africa, the government conducted its ‘Domesday survey’ of May 1911. There was never again to be a census approximating this survey in terms of its degree of comprehensiveness. In fact, subsequent census exercises of 1918, 1926, 1931 and 1941 only enumerated Whites.¹⁹ The lack of comprehensive and detailed censuses has led to a lacuna in research on occupational structures during this period. The limitation of micro-level data does not allow us to delve into the granular analysis of specific occupations, provincial and racial decompositions, like we have done in preceding chapters. Therefore, the purpose of this chapter is to construct the evolution of the occupational structure of South Africa at a national level using the PST schema. The data for this particular chapter does not come from the British classification scheme used in the preceding chapters. Here I use the Union’s Jubilee 1910-1960 census reflecting on the Union’s growth and development over the preceding half century (Union of South Africa, 1960).

Before 1910, the Witwatersrand’s gold mining industry had risen from nothing to become the world’s major source of gold. As a result, Johannesburg became the largest city in the southern part of the continent within a mere six years. The Transvaal boer republic became the wealthiest state in Africa; by the turn of the century, it was to surpass Russia, Australia and the United States of America to become the world’s leading gold producer, generating more than a quarter of the world’s gold. The transport infrastructure, rail networks etc. were in place by 1910. South Africa became home to many migrants who came to work at the mines or other industries that were indirectly connected to the mines. However, the most startling feature of the Union was the degree of extreme unevenness. The Pact government (1924) and the Unionist predecessors were established to address these extreme levels of inequality. In this period, ‘skewed’ state intervention played a critical role in growing the South African economy. The government built institutions like ESCOM, ISCOR, National Roads Act and National Land and Agricultural Bank²⁰. These

¹⁹ Also known as “Europeans”, a definition often fraught with problems. At some stage it depended on whether one had great-great grandparents who had been living in the country. The South African Act, 1910, however, simplified the matter by only referring to those of ‘European descent’ (Christopher, 2010).

²⁰ The Electricity Act led to the formation of the Electricity Supply Commission (ESCOM) in 1923. Its primary function was to encourage private enterprise by a process of industrialization built on cheap labour. The Iron and Steel Corporation (ISCOR) was created in 1934 to ensure competitive mining prices. Both these entities were under the directorship of H. J. van der Bijl and had to ensure that these entities collectively were complementary to promote

institutions were interlinked in growing the South African economy. The National land and Agricultural banks would be instrumental in financing the start-up cost of a reliable low-cost electricity power supply and establishing an iron and steel industry; that would put South Africa among the world's industrialised nations. In addition, the government committed to better construction, maintenance and financing of roads. The adoption of this infrastructural development strategy created new employment opportunities but did not necessarily lead to a reduction in inequality (Freund, 2011).

The period after the formation of the Union was largely a failed attempt to establish a hegemonic order in South Africa. Bill Freund (2011:211) argues that hegemony in South Africa was about 'pervasive and internalized dominance that flows from nationally based and structured institutions and civil society'. According to Freund (2011:246) the hegemonic project was destined to fail given its reliance on a narrow section of the population; in fact, for the people of colour it was source of 'alienation, opposition, and the intermittent emergence of counterhegemonic activity'. However, it could be argued that the Smuts era (especially from his return to power in 1939 until 1948) had more inclusive social policies, albeit on a segregated basis. Nonetheless, this attempt at creating a more inclusive country based on the patterns of capitalism internationally would be short-lived and the internal contradictions within the South African economy would remain until 1948, and after this period white hegemony would become more entrenched.

The population of the Union of South Africa doubled from 1910, 5 972 757 million, to 1946, 11 415 925 million (Du Plessis, 1950). According to Du Plessis (1950), the racial percentages of the overall demographic composition changed very little during this period. In addition, South Africa became more urbanized during this period, with the urban population estimated at 40 per cent of the total population by 1950. Figure 24 below shows the occupational structure of the Union of South Africa from 1911 to 1951.

existing economic interest. These two entities were also instrumental in the implementation of affirmative action measures in favour of poor whites, which further entrenched inequality in the occupational structure.

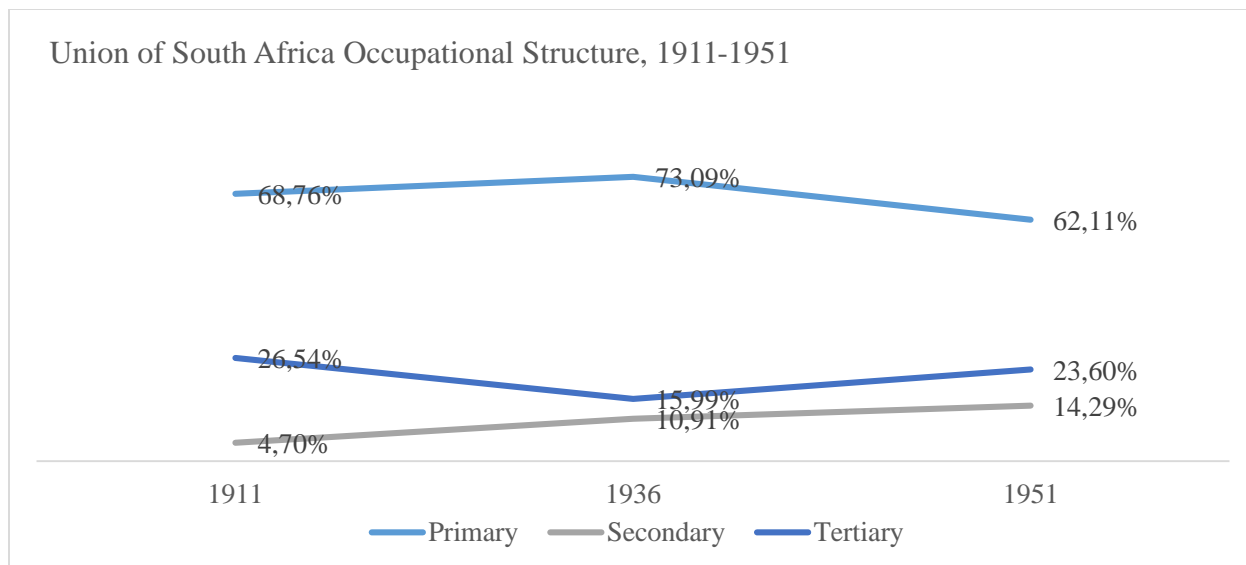


Figure 24: *Union of South Africa Occupational Structure, 1911-1951*

Here primary sector participation accounted for close to 70 per cent of the total employment of the labour force, a figure that increased a little until 1936, when the primary sector's share of economic activity began to fall moderately. The relative decline in primary sector employment was mainly driven by growing weakness in agriculture, which required state intervention to boost its productivity. Technologically, mining was the most advanced sector of the economy, and was heavily dependent on unfree forms of labour. We can assume that, despite the weakness of agriculture during this period, the growth of mining led to a moderate decline rather than a sharp decline in primary sector activity (Freund, 2011). Secondary sector employment increased steadily across the twentieth century. The steady increase may be attributed to various interventions by the state to develop manufacturing and industrialization through institutions like ESCOM and ISCOR. Manufacturing grew rapidly, and boomed during the middle and late 1930s despite the impact of the Great Depression. This led to industrial growth in two directions: first, there were the direct needs of the mining industry that required supply to expand extraction and production. For example, chemical products were required for energy purposes. Second, consumer demand for the increasingly urban population and a small textile industry took off using imported raw materials. These industries were located on the edge of the "native" / "bantu" reserves to access cheap black labour. The state's industrial thought process had come to appreciate the importance of black labour and consumption. Tertiary sector employment declined steadily until 1936 and experienced modest growth thereafter. The Union of South Africa displayed the kind of change in the

occupational structure that a familiarity with the historiography of economic development would expect. In other words, an increase in the relative importance of secondary sector employment led to a decline in agricultural activity (Kuznets, 1966; Freund, 1991 and Lindert and Williamson, 1982).

Male occupational structure 1911-1951

The male occupational structure (below, figure 25) shows similar trends for the different race groups, albeit at different rates. Primary sector participation was decreasing during this period for all races. Secondary sector participation increased from 1911 to 1936, and then declined for white and coloured males. For black males it increased at a decreasing rate from 1936 to 1951. Tertiary sector participation decreased from 1911 to 1936 for black and coloured males. It then increased from 1936-1951. In contrast, white male participation was stable from 1911 to 1936, then increased from 1936 to 1951. In general, we can surmise that white and coloured males' occupational structures showed greater level of economic development. In addition, when the PST system has greater concentration among sectors it demonstrates the rapid pace of industrialisation. Therefore, the effect of industrialisation and economic development was more pronounced for white and coloured males.

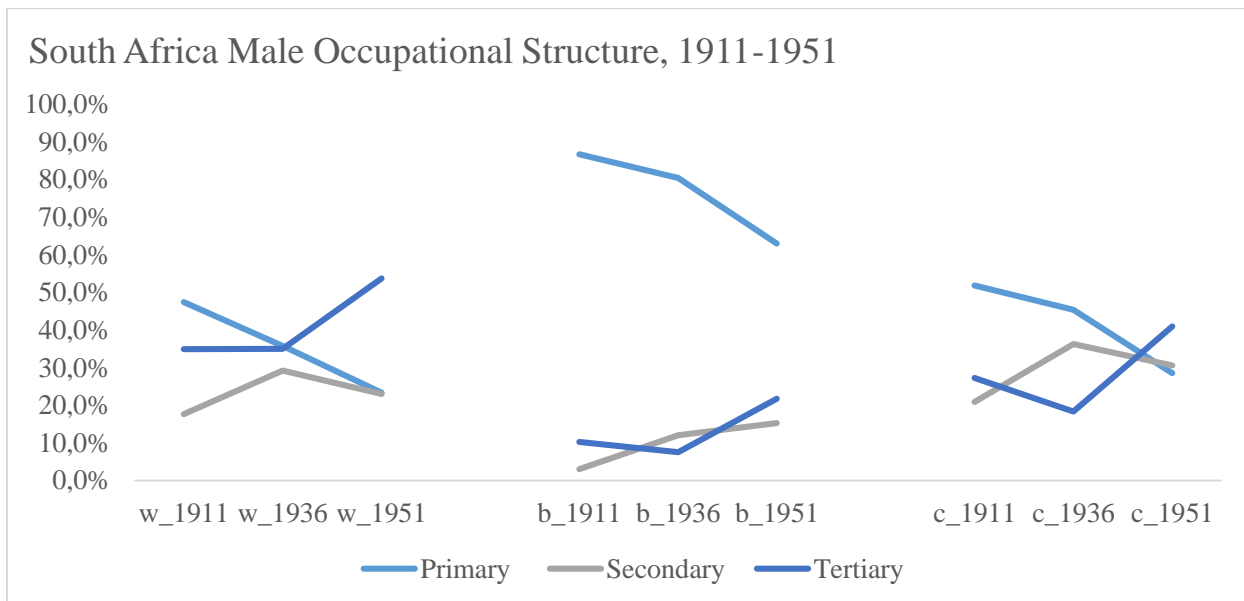


Figure 25: *South Africa Male Occupational Structure 1911-1951*

The PST system for the occupational structure of South Africa is consistent with the fact that the state encouraged the socioeconomic advancement of the white population and neglected that of the black population. The historiography, however, often positions the coloured labourer as someone who has been equally disenfranchised as the black labourer. The occupational structure of the twentieth century refutes that idea, as the evolution of the coloured male occupational structure is a mirror image of the white male occupational structure. This means that coloured males were direct beneficiaries of the pseudo-developmental state pursued by the state at the expense of black males. And by extension of this argument, the coloured middle class would have been more sophisticated than the black middle class. The primary disadvantage of this analysis is that it rests on aggregated data, and that it does not allow for a micro-level investigation of whether white and coloureds males shared similar occupations within the same sectors. In addition, inasmuch as there was occupational symmetry among whites and coloureds, the literature often points to asymmetry within the wage structure.

Female occupational structure 1911-1951

The female occupational structure (below, figure 26) shares the same developmental narrative as the male occupational structure, with white and coloured females sharing similar occupational sectoral patterns. White female occupational employment in the tertiary sector participation decreased from 1911 to 1936, then increased from 1936 to 1951. This sector was the most dominant, absorbing more than two thirds of the white female labour force. Secondary sector participation for white females' increased from 1911 to 1936, then decreased until 1951. White and coloured females' primary sector participation decreased from 1911 to 1951. Coloured females' tertiary sector participation decreased progressively, yet tertiary sector participation had more than two thirds participation. Secondary sector participation for coloured females was increasing at an increasing rate. Black females' primary sector participation was decreasing and formed the dominant sector with more than a two thirds labour force participation even in 1951. Secondary sector participation was insignificant for the entire period. Tertiary sector participation initially remained stable, and then increased from 1911 to 1951.

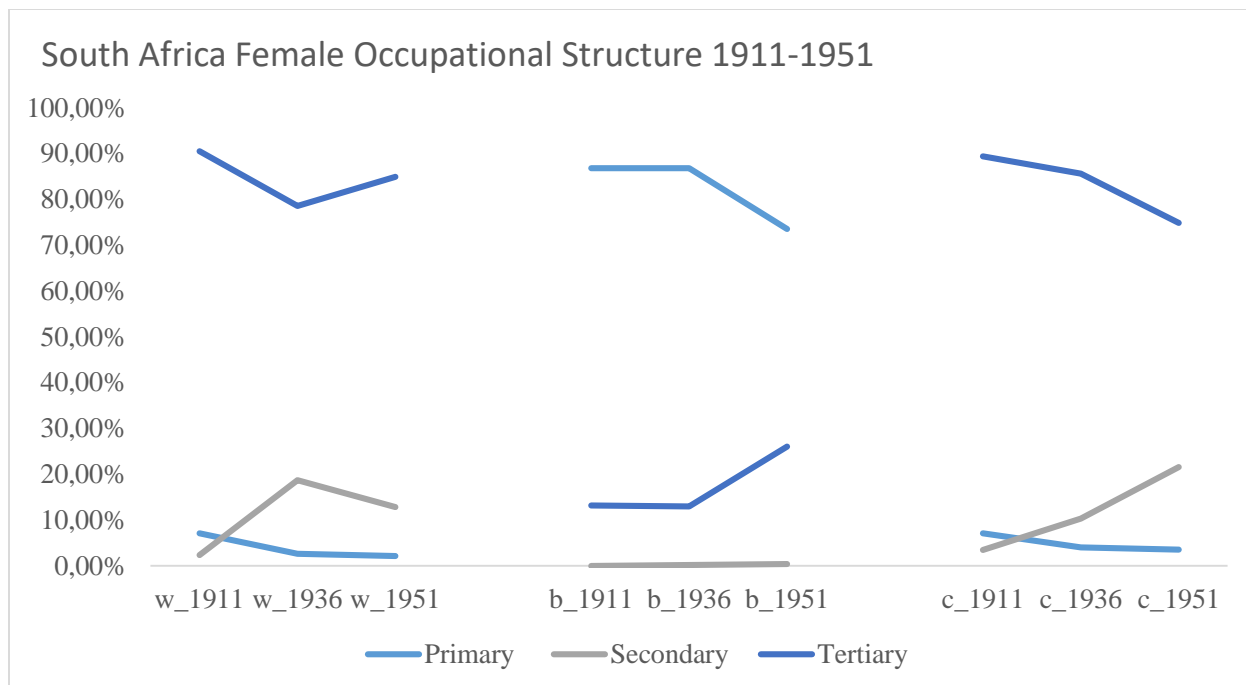


Figure 26: *South Africa Female Occupational Structure 1911-1951*

South Africa during this period was considered the most industrialized state on the African continent. The Belgian Congo was the second industrial state on the continent. Frankema et al (2016) shows that the Belgian Congo was a society based on primary sector activity with little secondary and tertiary sector. In the broad sense South Africa also looks like a society based mainly on primary sector activity. However, deeper inspection suggest that the industrialized state of South Africa was only evident within the white and coloured labour force. The Black labour force resembled a similar occupational structure to the rest of the continent with high levels of economic participation in the primary sector and relatively low levels of participation in the secondary and tertiary sectors.

Aggregation of data at a country level makes it difficult to analyze the drivers of the economy. We are unable to comment on how migration patterns were changing within provinces, as interest in mining and manufacturing grew during this period. How do we begin explaining the decline in primary activity within the black male occupational structure? It is nearly impossible to quantify if it's a decline in agriculture or mining that leads to this steady decrease. The argument until now has relied upon secondary sources. It is perhaps prudent for future researchers in the field of occupational structures to use, macro data, secondary sources, micro-level data (i.e. blue books)

and from there onwards work to triangulate the implications for economic development and urbanization.

Conclusion

Economists often acknowledge the critical relationship between the production and occupational structure of a country and the degree of economic development. As countries become more economically affluent, primary sector participation declines relative to other sectors in the economy. This dissertation has shown how this relationship was an integral part of the evolution of the occupational structure of South Africa. The mineral revolution increased production across all sectors, aided by infrastructural development (e.g. railways). The growth in the economy led to changes in the occupational structure with a decline in primary sector participation and a relative increase in secondary and tertiary activity, in particular for white males. The degree of economic development is captured by the process of urbanization, specialization and economies of agglomeration.

This relationship did not hold outright; in fact, as South Africa's industrialization gained momentum, the effects of colonization became more turbulent and unpredictable, particularly for black South Africans. In the Cape Colony from 1875 to 1911 black male primary sector participation increased. Coloured males had a more sophisticated occupational structure than black males. This, however, had changed by 1911 with increased primary sector participation for both race groups. Similarly, black female primary sector participation increased, while coloured females shifted to the tertiary sector, and white female primary sector participation declined and experienced a relative increase within the tertiary sector.

A few important lessons from the South African case is that an increase in primary sector activity and a decline in other relative sectors does not necessarily translate into economic stagnation. Second, it is important to remember that South Africa's industrialization process depended on mining, an occupation that is classified within the primary sector in the PST system. If, for example, another researcher using the PST system regarded mining as a secondary sector occupation (which it arguably could be), black males from the Cape Colony and Transvaal would have a radically different occupational structure profile with increased participation within the secondary sector. Finally, the occupational structure of South Africa changed to reflect an improvement in the living standards of South Africans, albeit the magnitude of the improvement

differed according to race and gender. In fact, the emergence of a black middle class is testimony to improving living standards associated with industrialization.

On the other hand, the racial segregation of the occupational structure does support the narrative that the accumulation of wealth that resulted from the exploitation of minerals was widening racial inequality in the twentieth century. The right to vote was one mechanism through which certain groups (males, whites) ensured that the gains from the mineral revolution benefited them predominantly. The migrant labour system was critical in sustaining and generating higher levels of income for the mines. The migrant labour system was destructive for social and economic development. It thwarted the normal process of urbanization that industrializing countries undergo, that is the need for building family homes, schools, parks and general infrastructure. The period from 1911 to 1951 indicates the racial inequality in the twentieth century. South Africa was the most industrialized state on the African continent, yet only white and coloured males reflected the industrial phase of the country. Black males' and females' occupational structures mirrored the occupational structure of the continent with high levels of economic participation in the primary sector and relatively low levels of participation in the secondary and tertiary sectors.

In the Cape Colony, the black male middle class was engaged in tertiary services and the professional sector, notably in teaching and ministry occupations. The coloured middle class, conversely, was engaged in secondary sector 'technical' occupations like blacksmith and printing (except for coloured females, who were employed mainly as teachers). This labour pattern is reflected within the broader PST system where coloured male participation in secondary sector is greater than black male participation. The emergence of a black middle class signals that average real incomes per capita among black people were increasing, as that is associated with a proportional increase of those employed in tertiary services.

The middle class was driven by a culture that was developing among black people who were embracing education, literacy, lifestyle, political authority and the values of individual accumulation and were encouraging their children to attend mission school. The cornerstone for the origins of the black middle class during the nineteenth century remains the educational efforts of the Christian missionaries. The spillover effects from mission education meant that Africans could start pushing for involvement in the Union of South Africa, economically, politically, and socially. In this sense the nineteenth century black middle class was different in character in that

it could not be the pillar of the country that often plays a critical role between capital and working class.

The empirical evidence on the evolution of the occupational structure of South Africa from 1875 to 1951, whether analyzed from provincial or national level, suggest that natural resources were a blessing for economic development, in particular for infrastructural development, urbanization and specialization. A mineral revolution benefits those groups with political rights. Coloureds and blacks initially had some political rights in the Cape. You see that, initially, they seemed to benefit from the mineral revolution. But as disenfranchisement began to occur, blacks especially were pushed to the primary sector occupations. This was followed, after unification, by legislation that entrenched such labour segregation.

In addition, economic development led to the formation of a black middle class that would later become critical in undoing the legacy of colonialism and apartheid. On the other hand, the rapid pace of industrialization from the mineral revolution together with economic policy became a curse in economic development by stifling the organic developmental path that industrializing societies embark upon. In other words, economic development without political rights leads to higher levels of inequality. This, in turn, was reflected in the occupational structure that was polarized along race and gender lines. This dissertation demonstrates that while resources are supposed to be a benefit to society, the evidence I present shows that it can also be a curse, in reshaping the racial distribution of wealth in society. Unfortunately, the dawn of democracy has not managed to rupture itself from race, class and gender divides, present day South Africa reflects these continuities in the occupational structure.

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Appendix:Table 9: *Cape Colony census data 1875-1911*

Cape Colony census data: 1875-1911				
	1875	1891	1904	1911
Primary	53.80%	50.50%	48.60%	48.60%
Secondary	10.80%	10.80%	11.90%	6.30%
Tertiary	35.40%	38.70%	39.50%	45.10%

Table 10: *Population Statistics*

Population Statistics				
	1875	1891	1904	1911
White	236783	376987	579741	
Black	287639	838136	1424787	
Coloured	196562	311201	405276	
Total	720984	1526324	2409804	5992000
		1875-1891	1891-1904	1904-1911
Absolute increase		805340	883480	3582196
Percentage increase		111,7001	57,88286	148,6509

Table 11: *Population estimates of South Africa*

Province	Total	Europeans or Whites	Black	Coloured
Cape of Good Hope	2,564,965	582,377	1,519,939	462,649
Natal	1,194,043	98,114	953,398	142,531
Transvaal	1,686,212	420,562	1,219,845	45,805
Orange Free State	528,174	175,189	325,824	27,161
South Africa	5,973,394	1,276,242	4,019,006	678,146

Table 12: *Male occupational structure: selected southern counties*

Sector	c.1710	c.1817	1851	1871
	%	%	%	%
Primary	61.4	59.5	49.6	42.7
Secondary	31.2	29.5	34	36.8
Tertiary	7.4	11.1	16.4	20.5

Source: (Shaw-Taylor and Wrigley, 2014)

Table 13: *Male occupational structure: selected northern counties*

Sector	c.1725	c.1785	c.1817	1851	1871
	%	%	%	%	%
Primary	50.5	24.6	23.6	19.4	16
Secondary	42.3	65.4	64.1	60.3	58
Tertiary	7.2	10	12.1	20.2	25.9

Source: (Shaw-Taylor and Wrigley, 2014)

Table 14: *Union of South Africa Occupational Sectors 1911*

Union of South Africa Occupational Sectors							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Primary	29.1%	4.1%	53.1%	53.3%	29.9%	4.3%	41.7%
Secondary	10.8%	1.4%	1.8%	0.0%	12.0%	2.1%	2.8%
Sectorally unspecified	0.9%	0.0%	2.0%	0.0%	7.0%	0.2%	1.2%
Tertiary dealers	1.5%	0.5%	0.0%	0.0%	0.9%	0.2%	0.3%
Tertiary sellers	2.8%	0.4%	0.4%	0.0%	2.7%	0.1%	0.7%
Tertiary services & professions	13.0%	51.2%	5.2%	8.1%	9.6%	53.8%	14.5%
Transport & Communication	4.3%	0.1%	0.6%	0.0%	2.7%	0.0%	0.6%
Without occupation or unstated	37.7%	42.3%	36.8%	38.6%	35.3%	39.4%	38.2%

Table 15: *Speculative overall estimates of the Union of South Africa 1911*

Speculative overall estimates of the Union of SA 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	37.1%	7.1%	64.5%	86.2%	45.0%	6.9%	59.8%
Mining & quarrying	7.9%	0.0%	22.1%	0.0%	5.4%	0.1%	8.8%
Rest of primary	0.5%	0.0%	0.1%	0.0%	1.4%	0.0%	0.2%
Clothing	0.7%	2.0%	0.0%	0.0%	0.8%	0.6%	0.3%
Building & construction	5.3%	0.0%	0.3%	0.0%	4.0%	0.0%	0.9%
Rest of secondary	11.3%	0.3%	2.6%	0.0%	16.2%	2.9%	3.4%
Dealers	1.8%	0.9%	0.1%	0.0%	1.3%	0.3%	0.4%
Professions & services	11.1%	6.7%	1.0%	0.5%	4.3%	5.5%	3.3%
Transport & communication	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of tertiary	24.3%	83.0%	9.3%	13.2%	21.5%	83.7%	22.8%

Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 16: *Transvaal Occupational Sectors 1911*

Transvaal Occupational Sectors 1911							
	White male	White female	Black male	Black female	coloured male	coloured female	Total
Primary	29.9%	6.0%	57.5%	51.9%	26.5%	9.4%	45.3%
Secondary	13.1%	1.3%	2.8%	0.0%	6.0%	0.5%	3.3%
Sectorally unspecific	0.6%	0.0%	2.4%	0.0%	3.0%	0.0%	1.1%
Tertiary dealers	1.5%	0.4%	0.1%	0.0%	1.0%	0.0%	0.3%
Tertiary sellers	3.1%	0.5%	0.5%	0.0%	8.5%	0.2%	0.9%
Tertiary services and professions	13.6%	49.4%	6.6%	6.7%	25.2%	51.8%	13.1%
Transport and Communication	3.8%	0.1%	0.7%	0.0%	4.8%	0.0%	0.9%
Without occupation or unstated	34.5%	42.4%	29.5%	41.4%	25.0%	38.1%	35.2%

Table 17: *Speculative Overall estimates of the Transvaal colony 1911*

Speculative overall estimates of the Transvaal colony 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	28.7%	10.3%	35.7%	88.5%	21.0%	15.1%	46.5%
Mining & quarrying	17.9%	0.0%	48.7%	0.0%	15.9%	0.0%	24.7%
Rest of primary	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clothing	0.9%	2.0%	0.0%	0.0%	1.1%	0.7%	0.3%
Building & construction	8.1%	0.0%	2.4%	0.0%	4.0%	0.0%	1.2%
Rest of secondary	12.3%	0.5%	3.7%	0.0%	4.2%	0.1%	3.2%
Dealers	1.7%	0.7%	0.1%	0.0%	1.7%	0.0%	0.4%
Professions & services	14.8%	5.9%	3.1%	0.4%	12.0%	8.5%	3.5%
Transport & communication	0.1%	0.0%	5.3%	0.0%	0.1%	0.0%	0.0%
Rest of tertiary	15.4%	80.6%	1.1%	11.1%	40.0%	75.5%	20.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6: *Natal Occupational Sectors 1911*

Natal Occupational Sectors 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Primary	14.7%	6.3%	44.8%	59.8%	22.5%	4.8%	45.1%
Secondary	15.7%	1.8%	1.5%	0.0%	24.2%	8.7%	3.4%
Sectorally unspecific	0.4%	0.0%	1.8%	0.0%	7.4%	43.2%	1.3%
Tertiary dealers	1.8%	0.5%	0.0%	0.0%	0.4%	0.1%	0.1%
Tertiary sellers	4.7%	0.8%	0.5%	0.0%	2.7%	0.3%	0.6%
Tertiary services and professions	19.1%	50.7%	5.3%	1.6%	10.9%	42.9%	8.2%
Transport and Communication	9.9%	0.2%	0.7%	0.0%	1.7%	0.0%	0.8%
Without occupation or unstated	33.6%	39.8%	45.5%	38.5%	30.3%	42.6%	40.5%

Table 19: *Speculative overall estimates of the Natal Colony 1911*

Speculative overall estimates of the Natal colony 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	28.4%	10.4%	82.7%	97.4%	28.1%	8.3%	75.2%
Mining & quarrying	1.7%	0.0%	2.1%	0.0%	7.8%	0.1%	1.4%
Rest of primary	0.2%	0.0%	0.1%	0.0%	0.3%	0.0%	0.1%
Clothing	0.7%	2.4%	0.0%	0.0%	0.5%	0.3%	0.2%
Building & construction	8.8%	0.0%	0.1%	0.0%	1.2%	0.0%	0.5%
Rest of secondary	15.6%	0.5%	2.7%	0.0%	28.0%	15.0%	5.2%
Dealers	5.2%	0.8%	0.0%	0.0%	0.4%	0.1%	0.2%
Professions & services	22.2%	83.4%	7.7%	2.5%	15.5%	74.3%	13.5%
Transport & communication	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of tertiary	15.3%	2.4%	4.5%	0.1%	18.2%	1.8%	3.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 7: *Orange Free State Occupational Sectors 1911*

Orange Free State Occupational Sectors							
Sector	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Primary	37.3%	6.5%	45.4%	32.2%	35.1%	16.3%	33.2%
Secondary	6.8%	0.7%	1.4%	0.0%	3.4%	0.1%	1.7%
Sectorally unspecific	1.0%	0.0%	3.5%	0.0%	5.3%	0.0%	1.4%
Tertiary dealers	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%

Tertiary sellers	1.4%	0.2%	0.3%	0.0%	0.4%	0.0%	0.4%
Tertiary services & professions	11.6%	46.3%	11.4%	25.2%	21.2%	43.6%	21.9%
Transport & Communication	1.9%	0.0%	0.4%	0.0%	1.1%	0.0%	0.5%
Without occupation or unstated	39.5%	46.1%	37.6%	42.6%	33.4%	40.0%	40.7%

Table 21: *Speculative overall estimates of the Orange Free State 1911*

Speculative overall estimates of the Orange Free State 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	60.5%	12.1%	65.1%	56.2%	52.0%	27.2%	52.9%
Mining & quarrying	2.1%	0.0%	11.9%	0.0%	5.3%	0.0%	4.4%
Rest of primary	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clothing	0.3%	1.2%	0.0%	0.0%	0.1%	0.1%	0.1%
Building & construction	4.6%	0.0%	0.3%	0.0%	2.8%	0.0%	1.0%
Rest of secondary	6.6%	0.1%	2.1%	0.0%	2.6%	0.0%	1.9%
Dealers	0.6%	0.3%	0.0%	0.0%	0.1%	0.0%	0.2%
Professions & services	9.8%	85.6%	14.0%	43.8%	28.1%	72.6%	34.2%
Transport & communication	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of tertiary	13.8%	0.7%	6.6%	0.0%	9.0%	0.0%	5.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 22: *Cape Colony Occupational Sectors 1911*

Cape Colony Occupational Sectors 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Primary	28.3%	1.8%	55.4%	54.0%	32.7%	3.1%	39.2%
Secondary	9.2%	1.6%	1.2%	0.0%	8.8%	0.7%	2.5%
Sectorally unspecific	1.1%	0.0%	1.4%	0.0%	7.4%	0.0%	1.2%
Tertiary dealers	1.7%	0.6%	0.1%	0.0%	1.0%	0.2%	0.4%
Tertiary sellers	2.7%	0.4%	0.4%	0.0%	2.1%	0.1%	0.7%
Tertiary services & professions	11.8%	53.8%	2.3%	9.9%	6.4%	57.2%	16.7%
Transport & Communication	5.1%	0.1%	0.5%	0.0%	2.8%	0.0%	1.0%
Without occupation or unstated	40.1%	41.6%	38.7%	36.1%	38.6%	38.6%	38.3%

Table 23: *Speculative overall estimates of the Cape Colony 1911*

Speculative overall estimates of the Cape Colony 1911							
	White male	White female	Black male	Black female	Coloured male	Coloured female	Total
Agriculture	44.8%	3.1%	87.1%	84.4%	55.7%	4.9%	62.5%
Mining & quarrying	2.3%	0.0%	5.3%	0.1%	2.7%	0.1%	2.0%
Rest of primary	1.0%	0.0%	0.1%	0.0%	2.2%	0.0%	0.3%
Clothing	0.7%	2.2%	0.4%	0.0%	0.9%	0.7%	0.5%
Building & construction	4.0%	0.0%	0.2%	0.0%	5.1%	0.0%	0.9%
Rest of secondary	11.0%	0.6%	1.9%	0.0%	10.3%	0.5%	2.7%
Dealers	2.8%	1.1%	0.1%	0.0%	1.7%	0.3%	0.6%
Professions and services	15.4%	91.5%	4.5%	7.5%	10.3%	93.2%	26.4%
Transport & communication	6.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of tertiary	11.8%	1.5%	0.4%	8.0%	11.0%	0.3%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

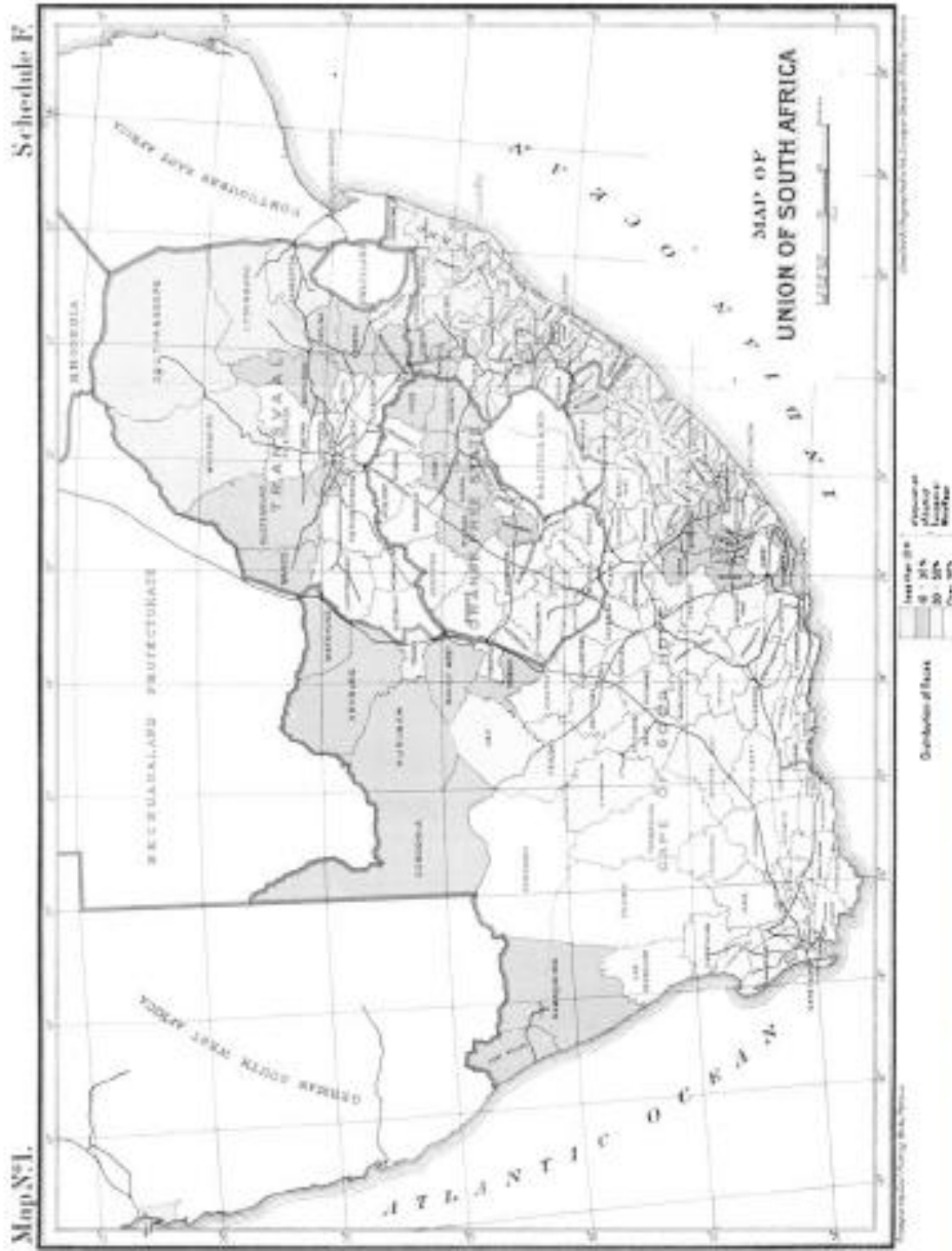


Figure 1. European percentage of the population in South Africa, 1910.
Source: South Africa, 1912.

Figure 3: Map of the Union of South Africa

