2022

Migration Analysis: Investigating the Impact of International Migration on Skills Supply and Demand in South Africa

Labour Market Intelligence research programme

higher education & training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NSF
National Skills Fund
FUNDING TO SKILL OUR NATION

LABOUR MARKET iNTELLIGENCE

University of Cape Town · Iyunivesithi yaseKapa · Universiteit van Kaapstad

DPRU
DEVELOPMENT POLICY RESEARCH UNIT

Published in 2022 by:

Department of Higher Education and Training
Private Bag X174
Pretoria 0001
www.dhet.gov.za

ISBN: 978-1-77018-930-0

2022

Migration Analysis: Investigating the Impact of International Migration on Skills Supply and Demand in South Africa

Labour Market Intelligence research programme

Corresponding author: Derek Yu (University of the Western Cape)

Abstract

This study analysed a wide range of local and international data sources to conduct a comprehensive investigation on the demographic, education and labour market characteristics of three groups of people: 1) immigrants into South Africa; 2) natives who remained in the country; and 3) emigrants out of South Africa into the top five destination countries (Australia, Canada, New Zealand, the United Kingdom [UK] and the United States of America [USA]). The empirical findings were used to investigate the extent of migration to and from the country, from the perspectives of skills supply and demand.

The study first discussed the migration types, concepts and theories, as well as the South African migration policy instruments and past local empirical studies since the advent of democracy. After providing a brief review of the labour supply and demand trends from 1995–2019, the study analysed various local and international census and survey datasets to examine the aforementioned three groups of individuals. The empirical findings showed that, out of the three groups, the emigrants were most educated, enjoyed the lowest unemployment probability (about 10%), and were most likely to be involved in high-paying, skilled occupations and tertiary sector activities as full-time employees (if they were employed). The immigrants fared worse than the emigrants but better than the native group. These immigrants, mainly originating from other African countries (e.g. Lesotho, Malawi, Mozambique and Swaziland), were slightly more educated, but enjoyed a higher labour force participation rate (LFPR) (75%) and lower unemployment likelihood (20%), compared to the natives (55% and 30% respectively). Both immigrants and emigrants were also more likely to engage in self-employment activities.

Furthermore, both immigrants and emigrants were categorised according to long-term, medium-term and short-term migrants. The empirical findings suggested that long-term migrants fared relatively better in the labour markets of their respective host countries. Moreover, short-term immigrants suffered significantly greater underemployment likelihood, according to the over-education and low-income approaches, while the econometric analysis and kernel density functions suggested that immigrants earned lower than natives. However, the result was statistically insignificant after controlling for differences in characteristics.

Overall, the empirical findings strongly indicated a brain drain (an exodus of highly educated, skilled people) out of South Africa. Moreover, the exodus of highly educated and skilled people is not complemented by a rapid increase in supply of equally educated and skilled labour force entrants into the country, even after taking the immigrants into consideration. The study ended by suggesting four policy recommendations: 1) ease the regulations to attract skilled immigrants; 2) promote entrepreneurial activities of immigrants; 3) better develop and retain the skills of the native population; and 4) improve migration and vacancy data capture, availability, usage and analysis.

DEREK YU
University of the Western Cape

Table of contents

List of abbreviations

ACS	American Community Survey
ANC	African National Congress
CS	Community Survey
CSP Services	Community, social and personal services
DHA	Department of Home Affairs
DM	Documented Migration
DOL	Department of Labour
DRC	Democratic Republic of Congo
EAR	Employment absorption rate
FET	Further Education and Training
GDP	Gross domestic product
LFPR	Labour force participation rate
LFS	Labour Force Survey
NDP	National Development Plan
n.e.c.	Not elsewhere classified
NQF	National Qualifications Framework
OHS	October Household Survey
OECD	The Organisation for Economic Co-operation
QLFS	Quarterly Labour Force Survey
RRO	Refugee Reception Office
SADC	Southern African Development Community
SAMP	Southern African Migration Programme
SETA	Sector Education and Training Authority
StatsSA	Statistics South Africa
UK	United Kingdom
UNGMD	United Nations Global Migration Database
USA	United States of America
WAP	Working-age population

List of tables

List of figures

PART 1

Introduction

1.1 Background

Migration has been part of human history since the dawn of time, and South Africa is no exception. Historically, South Africa has been an immigrant-receiving country; the country was occupied by forebears of the Bushman and Khoisan tribes before the Europeans arrived, whereas a great number of people migrated from central Africa to South Africa during the 17th century. The discovery of minerals led to an increased demand for labour in the mining sector and, subsequently, immigration of workers from other countries (Modi 2003: 1759). Moreover, looking at the Documented Migration (DM) data between 1940 and 2003, released by Statistics South Africa (StatsSA), a total of 1.25 million people immigrated to South Africa from other countries, whereas 0.61 million South Africans left the country, resulting in a net gain of 0.64 million people into the country. Hence, the South African migration phenomenon is nothing unique in the world history.

As globalisation has encouraged greater specialisation and division of labour, and the transfer of skills across national borders, it is no longer possible for countries to manage the movement of individuals independent of international norms and global trends (Wöcke & Klein 2002: 442). In fact, such movement is regarded as an important force that helps increase economic efficiency and shared prosperity, just like the movement of goods and capital (Christiaensen et al. 2019: 5–6).

In the context of international migration, many South Africans have left the country over the years due to various economic and non-economic push and pull factors (Van Rooyen 2000; Waller 2006; Segatti 2011; Gibson & McKenzie 2011; Rasool et al. 2012), such as slow economic growth, persistently high and growing unemployment (especially for the youth population), poor working conditions, high levels of personal income and company tax rates, high poverty and inequality levels, crime, violence, political uncertainty and poor infrastructures. In particular, the emigration of skilled people occurs easily because these highly educated people have greater career advancement opportunities for higher paid jobs abroad, compared to their less educated compatriots, who have a considerably lower likelihood of escaping from their home environment. This brain drain phenomenon leads to the erosion of skilled human capital that is vital to the functional core of the South African economy.

The high incidence of skilled emigration out of South Africa results in not only a net transfer to human capital and scarce resources from South Africa to more developed countries in the form of foregone tax revenues and fiscal cost of educating these skilled workers, but also a potential further loss of skills in the next generation. This is because emigrants most likely take their children with them if emigration turns out to be permanent (Waller 2006; Leipziger 2008). Unemployment levels of the country could worsen further, given the fact that skilled and unskilled workers are complementary in the labour market. In fact, it is argued that each skilled emigrant who leaves South Africa could lead to the loss of as many as 10 unskilled jobs in the country (International Business Publications 2012: 67).

On the contrary, while South Africa is not a favoured immigration destination globally, in a regional context, it is a popular destination country for migrants from other African countries, as it is one of the most developed countries on the continent. The immigrants replenish the local labour supply at both ends of the skills spectrum, stimulate entrepreneurship and innovation, and contribute to fiscal revenue in the form of value added tax, income tax and company tax. Nonetheless, it is also argued that these immigrants tighten labour markets by increasing competition for local jobs (particularly less skilled jobs) and create social tensions (Organisation for Economic Co-operation and Development [OECD] 2018; Christiaensen et al. 2019).

There is an abundance of recent local empirical studies on inter-provincial migration (Van der Berg et al. 2002; Oosthuizen & Naidoo 2004; Moses & Yu 2009; Jacobs 2014; Schiel 2014; Buwembo 2015; Kollamparambil 2017). On the other hand, many studies on international migration in South Africa investigated how immigrants fared in selected regions with the aid of primary data (e.g. Sinclair 1999; McDonald et al. 2000; Wentzel et al. 2004; Theodore et al. 2017), examined the emigration intention of natives (e.g. Rogerson 2000; De Jong & Steinmetz 2004), or estimated the macroeconomic impact of skilled emigration in terms of gross domestic product (GDP) foregone (e.g. Bohlman 2010).

Only a handful of studies used the Census and Community Survey (CS) data to investigate whether immigrants fared relatively better than natives in the labour market (e.g. Zuberi & Sibanda 2004; Facchini et al. 2013; OECD 2018; Vermaak & Muller 2019), but did not thoroughly compare *all* three core groups of individuals at aggregate level, namely immigrants, natives and emigrants. These studies also did not comprehensively investigate international migration in South Africa from the perspectives of skills supply and demand, as well as possible imbalances between the two (or skills mismatch).

1.2 Purpose and rationale of the study

The primary purpose of this study is to analyse a wide range of available local and international data sources to conduct a comprehensive investigation to compare the demographic, education and labour market characteristics of three groups of individuals (immigrants, natives and emigrants), before using the empirical findings to explore the extent of migration to and from South Africa from the perspective of skills supply and demand.

More specifically, this study analyses numerous census and survey datasets released by StatsSA, as well as census and survey data from the top countries of destination for South African emigrants. The labour market profiles of these three groups are examined: 1) South African emigrants working abroad; 2) natives who remain in the country; and 3) international immigrants into the country. The results of the empirical analyses help to better understand the impact of international migration on skills supply and demand in South Africa, and to identify the skills needs of the country.

Given that the South African labour market is characterised by an over-abundance of unskilled and semi-skilled labour but an under-supply of skilled labour, and the shift in labour demand trends towards high-skilled, capital-intensive sectors, this study can benefit stakeholders and policymakers by helping them to better identify the priority occupations and critical skills needs of the country. These are critical skills that are lost as a result of brain drain, and skills that are in great demand but short supply. As such, these skills needs should be prioritised when it comes to issuing work and residence permits to immigrants. Subsequently, this study can lead to improvement in national skills planning and skills match, which have a direct bearing on the achievement of various macroeconomic and social objectives (such as real GDP growth and more rapid job creation), as well as effectiveness of government spending on education and training.

1.3 Research questions

The general research question of the study is: how do international immigration and emigration affect skills supply and demand, and how has it affected the extent of skills match (and mismatch) in the South African labour market in the past 15–20 years (i.e. from the 2000s to the 2010s)? The more specific research questions to be answered by the study are as follows:

- What are the key trends in labour supply and demand since the advent of democracy, according to the StatsSA labour survey data?
- What are the key historical trends in international immigration and emigration from 1983–2003, using the already discontinued DM data?
- What are the differences in education and skills levels, employment/unemployment status, as well as work activities, of immigrants, natives and emigrants, according to the more recent, but available, local and international data?
- In what ways do international immigrants contribute to the South African labour market?
- What is the extent of skills loss due to the emigration of individuals out of South Africa?
- How can the empirical findings assist the relevant stakeholders to improve national labour market policy and skills planning, as well as immigration policy?
- How can the empirical findings of this report link to other LMI projects?

1.4 Target audience for the report

The three main target groups of this report are the Department of Higher Education and Training (DHET), the Department of Labour (DOL) and the Department of Home Affairs (DHA). The empirical findings derived from the report would most help these officials to better identify the impact of international migration on skills supply and demand in South Africa, as well as the skills needs of the country. The results would help to improve policy formulations in terms of national education and training, as well as issues of residence and work permits for potential immigrants.

1.5 Outline of the study

The remainder of the report is structured as follows: Chapter 2 defines the key migration concepts and types, discusses the core migration theoretical model and reviews the results of past empirical studies. Chapter 3 explains the methods and data, before Chapter 4 goes on to present and discuss the results of the empirical findings, using a wide range of local and international data sources. Finally, Chapter 5 reviews the key findings and addresses the policy implications.

PART 2

Literature review

2.1 Introduction

This chapter begins by defining various migration concepts and types of migration, before going on to explain the commonly known theoretical models that initiate and perpetuate migration. The chapter proceeds to review past local empirical studies on international migration, before discussing changes in the South African international migration policies. The chapter concludes by highlighting the research gaps to be filled by this study.

2.2 Conceptual framework

2.2.1 Migration definition and types

The term "migration" can mean many things, depending on the context in which it is used. In the animal kingdom, migration is the natural behaviour of animals moving from one place to another. Human behaviour is patterned after this. In the USA, Goetz (1999) defines migration as the movement of individuals across state lines. Clark (1986: 33) asserts that migration takes place when an individual moves residentially with distance between the two locations being "so large that it is no longer possible for the mover to commute to the old place of work." In addition, Kok et al. (2006: 10) define migration as the "crossing of the boundary of a predefined spatial unit by persons involved in a change of residence". What all these definitions have in common is that migration takes place when individuals change their geographical location from one place to another, either permanently or for a long period of time.

Table 1 lists the main types of migration, whereas Table 2 shows the key migration concepts. In this study, the focus is on international migration, particularly on its impact on the South African labour market, in terms of skills supply and demand, as well as the extent of skills match (and mismatch).

TABLE 1: Main types of migration

TYPE OF MIGRATION	DEFINITION
Internal	Migration from one place to another within a country.
Intra-provincial	Migration from one place to another within a province in a country; it is a subset of internal migration.
International	Migration from one country to another country.
Circulatory	Migration of an individual in the earlier stages of his/her life to an urban area and who returns to the rural sending area upon retirement.
Oscillatory	Regular movement between the community of origin and areas where employment is pursued or gained.
Voluntary	Migration of people due to economic and social reasons.
Forced	Migration of people due to external factors, such as natural disasters and conflicts. Refugees and asylum seekers are included.

Source: Moses and Yu (2009); DHA (2017); Christiaensen et al. (2019).

TABLE 2: Key concepts relating to migration

TERM	DEFINITION
Migration origin	The place where a migrant comes from.
Migration destination	The place that a migrant moves to.
Home country	Country or location of origin that a migrant comes from.
Host country	Country or location of destination that an individual migrates to.
Immigrant	An individual who migrated from another country.
Native	An individual who was born and still resides in a province or country.
Emigrant	An individual who migrated to another country.
Asylum seeker	An individual who seeks safety from persecution or serious harm in the host country, and awaits a decision on the application for refugee status.
Refugee	An individual who resides in the host country, for fear of persecution by the home country, and is unable or unwilling to avail himself/herself of the protection of the latter country.
Short-term migrant	An individual who moves to another place other than that of his/her place of usual residence for at least three months but less than a year.
Long-term migrant	An individual who moves to another place for at least one year, so the country of destination becomes his/her new place of usual residence.
Return migrant	An individual who returns to the home country after migrating to the host country for a period of time.
Work permit/visa	A legal document issued by a competent authority of a state giving authorisation for employment of migrant workers in the host country during the period of validity of the permit.
Business permit/visa	A legal document issued by a competent authority of a state giving authorisation for someone to conduct business in the host country during the period of validity of the permit.
Permanent residence permit	Authorisation granted to a foreign national by the state of the host country to reside in the country permanently.
Temporary residence permit	Authorisation granted to a foreign national by the state of the host country to reside in the country temporarily.
Brain drain	Emigration of a country's most highly skilled people.
Brain gain	Improvement in human capital level in the home country, as some individuals invested in further education in reaction to the prospect of future migration, but who ended up not migrating.

Sources: Van Rooyen (2000); Moses & Yu (2009); Gibson & McKenzie (2011); DHA (2017); Kollamparambil (2017); European Commission (2019).

2.2.2 Migration theories and models

From a theoretical perspective, there are various theories and models that explain the initiation and perpetuation of international migration. The most well-known of these is the push-pull model, as migration is driven by numerous push and pull factors. In the local context, the main push factors include the following in the country of origin (or South Africa, in this study): slow economic growth, high and growing unemployment (especially amongst the youth), high incidences of crime and violence, political instability and poor infrastructures. On the contrary, the main pull factors in the countries of destination are as follows: more rapid economic growth, more job opportunities and higher remuneration, better quality of life and family ties (Van Rooyen 2000; Moses & Yu 2009; Rasool et al. 2012). Refer to Appendix A for a summary of other theories and models of migration, which is based primarily on Massey et al. (1993).

2.3 South Africa's migration policy

South Africa's existing international migration policy aims to attract high-skilled expatriates. This section will first briefly explain the country's migration policy during apartheid (1948–1994), before focusing on the changes in policy since the economic transition. Note that migration policy during the colonial and pre-1948 period falls beyond the scope of this study and will not be discussed here – refer to DHA (2007: 8–9) for more information.

2.3.1 Migration policy during apartheid

During apartheid, immigration took place through a so-called "two-gate" policy (OECD 2018; Van Lennep 2019a): the "front gate" welcomed high-skilled individuals with desirable traits that corresponded with the criteria of attractiveness as defined by the government, whereas the "back gate" prevented unwanted migrants with undesirable characteristics from arriving and settling in South Africa; however, it allowed unskilled labour to enter and even work in the country temporarily, to meet the labour demand in the labour-intensive agriculture and mining sectors.

In fact, Crush and McDonald (2001), Segatti (2011) and DHA (2007) asserted that apartheid-era immigration policy strictly linked immigration and citizenship to individuals deemed to be European, while tight border security and restrictions were placed on Africans, who were exploited for cheap migrant labour, even in case they were allowed to enter the country for a temporary period. It was only in the dying years of apartheid that the state eventually allowed selected skilled Africans and Asians to "bolster apartheid's pernicious homelands strategy of co-optation" (Crush & McDonald 2001: 2).

Van Lennep (2019a: 2) summarised the four key aspects of apartheid-era immigration policy as follows: 1) control over a rights-based approach to immigration; 2) distinction between high-skilled desirable immigrants and low-skilled undesirable African immigrants; 3) increasing restrictionism complemented by growing temporary low-skilled immigration of African individuals; and 4) ambivalence and even hostility of society towards immigration under the nation-building project.

2.3.2 Migration policy since the advent of democracy

In the initial years since the democratic transition, the African National Congress (ANC) did not place international migration policy among the key issues in the country's various economic development and reform strategies (i.e. Reconstruction and Development Programme; Growth, Employment and Redistribution; Accelerated and Shared Growth Initiative). There was also a lack of understanding on

various pressing issues in the broad field of migration, such as the presence of more asylum seekers, the brain drain and brain gain phenomena, and the skills needs of the country (Segatti 2011: 31, 39–40).

It was only in November 1996 that the DHA and then minister Mangosuthu Buthelezi appointed a task team to write the 1997 Green Paper on International Migration. Its publication was followed by the release of the 1998 Refugees Act and 2002 Immigration Act. These two acts have been amended numerous times since, before the International Migration Green Paper and White Paper were published in 2016 and 2017, respectively. Over the years, new categories of permanent and temporary residence were introduced to gain better control over the types of migrants entering the country, and a points-based system was proposed to replace a stringent quota system on skilled immigration. Nevertheless, it is argued that post-apartheid international migration policy instruments remain restrictive and slow to respond to both national demands and regional developments (Peberdy 2001: 17; Van Lennep 2019: 2).

The numerous international migration policy instruments are summarised in Table 3 and will be explained in more detail for the remainder of this section, with greater emphasis on the 2002 Immigration Act and the 2017 International Migration White Paper.

TABLE 3: South Africa's international migration policy instruments since 1994

INSTRUMENT	DOCUMENT
Migration Green Paper	1997 International Migration Green Paper
	2016 International Migration Green Paper
Migration White Paper	1999 International Migration White Paper
	2017 International Migration White Paper
Aliens Act	1995 Aliens Amendment Act
Refugee Act	1998 Refugees Act
	2008 Refugees Amendment Act
	2017 Refugees Amendment Act
Immigration Act	2002 Immigration Act
	2004 Immigration Amendment Act
	2007 Immigration Amendment Act
	2011 Immigration Amendment Act
	2016 Immigration Amendment Act

Source: Adapted from Mbiyozo (2018: 3).

2.3.2.1 1995 Aliens Amendment Act

This act replaced the original Aliens Act of 1991. The two main highlights of the 1995 Act are as follows (Van Lennep 2019: 3–4): 1) time spent by an immigrant in detention without trial was restricted to 30 days and 2) skilled labour migration was ensured, with the establishment of an Immigration Selection Board to warrant the selection of immigrants on the basis of their experience and qualifications.

2.3.2.2 1998 Refugees Act and 2008 and 2017 Refugees Amendment Act

The 1998 Act was introduced to grant both refugees and asylum seekers the right to education and work, yet a rights-based approach was applied to asylum that "rejects encampment and allows asylum-seekers freedom of movement" (Van Lennep 2019a: 4). After 10 years, the 2008 Refugees Amendment Act was introduced, mainly in response to the increasing numbers of Zimbabwean migrants using the asylum regime to try to legitimise their stay in South Africa. The key highlights of this 2008 Act include, amongst others, the following (Van Lennep 2019a: 7–8): 1) removing refugees' right to the same basic healthcare and primary education as native South Africans; 2) enforcing the abandonment of asylum-seeker permits if they are not renewed 90 days after their expiry date; 3) repealing the section of the 1998 Act that stated asylum seekers should be treated the same as refugees until their status is determined; and 4) differentiating the extent of asylum-seeker rights and refugee rights, particularly the former's need to renew the asylum-seeker permit periodically.

The Refugees Act was amended again in 2017 to impose further restrictions on asylum seekers. The most noticeable changes are as follows (Van Lennep 2019a: 10): 1) excluding asylum seekers from refugee status if they fail to report to a Refugee Reception Office (RRO) within five days of entering the country; 2) further limiting the right of asylum seekers to work; 3) introducing fines or imprisonment up to five years for those possessing an expired asylum-seeker visa; and 4) cracking down on DHA officials and workers who assist undocumented asylum seekers.

2.3.2.3 Immigration Act 2002

The 1999 White Paper on International Migration was implemented mainly through the Immigration Act 2002 and partly through the Refugees Act 1998, discussed above. The Immigration Act 2002 emphasised a number of principles, which include, amongst others, the following (DHA 2017: 4, 12 & 45; OECD 2018: 62; Van Lennep 2019a: 5):

- Simplifying the requirements and procedures, as well as expeditious issue, of residence permits.
- Issuing visas to foreign individuals with skills (i.e. critical skills) that could not be obtained in South Africa or to those with substantial amounts of capital to invest in the country.
- Introducing various categories of visas to facilitate easier access by native employers to foreign, skilled individuals, such as permanent residence visas, critical skills work visas, general work visas and intra-company transfer visas.
- Creating and implementing quota permits on identified scarce skills sectors. This quota permit system was later given the specific objective of skills transfer under the Joint Initiative on Priority Skills Acquisition (JIPSA), which was launched in 2006.
- Recruiting low- to middle-skilled individuals from South African Development Community (SADC) countries only by farmers, mines and other firms under a temporary corporate work visa.
- Ensuring human rights protection in immigration control, as well as preventing and countering xenophobia within civil society and the government.

Despite these changes being implemented, the 2002 Act has been criticised for the following shortcomings (DHA 2017: 2–5 & 45–52; OECD 2018: 57; Van Lennep 2019a: 5): 1) the new laws were much like the "two-gate policy" during apartheid in that they placed restrictions on unskilled immigration while promoting high-skilled immigration; and 2) the Amendment Immigration Act 2004 remained silent on how to better align with the country's African-centred foreign policy, by managing international migration flows (including the semi-skilled and unskilled immigrants) from the SADC countries to promote and strengthen regional integration, as well as significantly improve intra-African trade and industrial development of South Africa.

Furthermore, it is argued that South Africa has not been able to adequately attract and retain foreign individuals with the required scarce skills and capital to invest in the country, because the international migration policy is not strongly linked to the country's skills development and investment priorities. Secondly, there is an insufficient, and reactive rather than proactive, inter-sectoral and inter-governmental approach to attract and retain these international migrants. Lastly, there is virtually no attention paid to engagement with South African emigrants abroad.

2.3.2.4 2004, 2007, 2011 and 2016 Immigration Amendment Act

The Immigration Act was amended four times since its introduction in 2002. Firstly, the 2004 Immigration Amendment Act was refined towards ascertaining skilled labour migration, by revising the work permit policy to people of a specific profession, category or class. Secondly, it aimed to reduce the number of available quota permits. In addition, RROs were established, and asylum seekers were required to report to an RRO within two weeks of entry into South Africa, or their presence in the country automatically became illegal (Van Lennep 2019a: 6). In the 2007 Immigration Amendment Act, work permit quotas were once again limited to foreign individuals who fell within a specific professional category or within the specific occupational class, as stipulated by the DHA for each sector. Nonetheless, a more outwardly pro-African stance was taken in this Act, by relaxing the requirements that African students pay repatriation deposits and by making some changes that favoured cross-border traders, in particular women (Van Lennep 2019a: 7).

As far as the 2011 Immigration Amendment Act is concerned, the key highlights are as follows (OECD 2018: 62; Van Lennep 2019: 8–9): 1) the temporary residence permit was redefined as a visa, and a critical skills work visa was introduced; 2) applications for business visas imposed added conditions for capital injection to the South African economy and employment creation; 3) the duration of intra-company transfer permits of foreign executives was extended to four years; and 4) the reporting period of asylum seekers to the RRO was shortened from two weeks to five days. One big criticism of the 2011 Act from businesses was that the list of skills and professions relevant to the quota system for work permit applications was "established without any direct consultation with the business sector, and to be largely out of sync with the reality of skills needs" (OECD 2018: 62).

Lastly, the 2016 Immigration Amendment Act was envisaged as a response to irregular migration, by extending sanctions on foreigners who overstayed their visas, whereas the confidentiality of asylum seekers' applications were protected, unless disclosure was in the public interest (Van Lennep 2019a: 9).

2.3.2.5 2017 International Migration White Paper

The new White Paper on International Migration, approved by the Cabinet in March 2017, is a policy statement that guides the comprehensive review of immigration legislation in the following eight areas (Mbiyozo 2018: 3–4): 1) admissions and departures; 2) residency and naturalisation; 3) international migrants with skills and capital; 4) ties with South African expatriates; 5) international migration within the African context; 6) asylum seekers and refugees; 7) integration process for international migrants; and 8) enforcement. More specifically, this White Paper took its cue from the National Development Plan (NDP), which argues that South Africa needs to adopt a more open approach to skilled immigration, so as to enable the expansion of high-skilled labour supply for the economy "in a manner that obviates displacement of South Africans" (DHA 2017: 7).

The key policy and strategic interventions are as follows (DHA 2017: 45–51; OECD 2018: 29; Van Lennep 2019a: 11):

- Introduce a flexible points-based system to facilitate the proactive recruitment and retention of foreign individuals with critical skills and capital to invest in South Africa, as well as replace the "status quo" of corporate visas typically used in agriculture and mining to hire SADC nationals.
- The points in the above-mentioned system can be revised frequently by considering a wide range of factors, including age, educational qualifications and work experience, the amount of money to invest in South Africa, the type of business to invest in, as well as willingness and ability to transfer skills.
- Introduce long-term family-oriented residence visas for migrants with the necessary skills, investment and entrepreneurial interests, so as to allow them easier access to citizenship.
- Ensure the transfer of skills from immigrants to natives to close the skills gap in the domestic labour market by, for example, requiring the funding to train citizens directly or via a levy, or establishing a training scheme wherein foreign national immigrants are liable to contribute funds that will be used to train South African native workers.
- Address the importance of maintaining links to South Africans who have settled in other countries by including new elements in the emigration policy, such as diaspora communities (continuation of dual citizenship, effective provision of consular services and country ambassadorial network programmes) and re-integration programmes (to assist returnees to re-enter and re-adjust to the South African economy and labour market).

2.4 Review of past empirical studies

2.4.1 Studies using primary data

Of the international migration studies involving the use of primary data, five studies interviewed immigrants to examine how they fared in South Africa as the host country. Sinclair (1999) is a highly qualitative study that interviewed 77 immigrants in Cape Town and Johannesburg; the migrants in general declared that they responded to hostility with anger and indignation, and they formed migrant communities to support one another. On the contrary, McDonald et al. (2000) interviewed 2 300 immigrants from Lesotho, Mozambique and Zimbabwe to examine their reasons for visiting and leaving South Africa, as well as attitudes towards cross-border movement and immigrant policy. The study found that seeking employment was the primary reason immigrants came to South Africa (Lesotho: 50%, Mozambique: 40%, Zimbabwe: 35%) and, surprisingly, they did not have a very strong desire to be a permanent South African resident (the respective proportions were 33%, 14% and 13%).

Wentzel el al. (2004) interviewed immigrants from six African countries (Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe). About two thirds of the overall sample declared that "no suitable employment" was the main reason for leaving their previous area of residence, whereas 76% of respondents claimed that the key reason for moving to South Africa was "best employment opportunities". The latter result aligns with the findings of McDonald et al. (2000).

Theodore et al. (2017) interviewed 600 immigrant day labourers who worked in Tshwane but came from Zimbabwe. The study found that the migrants and their dependents endured poverty and food and housing insecurity, due to underemployment in informal activities, which were associated with

persistently low wages and unstable employment security. Lastly, Kalitanyi and Visser (2010) interviewed a total of 120 immigrant entrepreneurs who ran businesses in various suburbs of Cape Town. More than half of the respondents left their countries of origin due to political instability, about 55% were engaged in clothing or footwear businesses in South Africa and, most importantly, more than 80% hired South Africans in their businesses.

The next group of studies (four in total) relates to emigration intention and dealing with emigration of staff. Mattes and Richmond (2000) interviewed 725 skilled South Africans with at least a Matric qualification to investigate their desire to leave the country in the next five years. The study found that 31% of participants thought a lot about moving to another country to live and work in and 14% had already applied for a work permit, permanent residency or foreign citizenship in another country at the time of the interview. Moreover, a high share of interviewees were dissatisfied or very dissatisfied with their taxation level (74%), cost of living (71%), upkeep of public amenities (70%), family's safety (68%) and personal safety (66%). On the contrary, at least two thirds perceived things to be better or much better overseas in the areas of personal safety (80%), family's safety (80%), upkeep of public amenities (72%) and customer services (67%).

De Jong and Steinmetz (2004) interviewed about 3 600 households to examine their emigration intention. The study showed that 16.4% and 25.4% intended to emigrate in the next one and five years, respectively. The study also found that the following households were associated with a significantly greater intention to leave South Africa in the near future: 1) headed by older individuals with post-Matric qualifications; 2) pressure imposed by a spouse to emigrate; and 3) poor quality of electricity services and low levels of life satisfaction. Mattes and Mniki (2007) analysed the 2002 data collected by the Southern African Migration Programme (SAMP) on a sample of 4 800 postgraduate and final-year undergraduate students, to examine their emigration potential. About 40% of the survey participants gave a great deal of consideration to relocating to another country to live and work, whereas 28% reported they had a great desire to move to another country to live and work for two years or longer. In addition, financial resources, family encouragement, prospects of a better life elsewhere, previous travel abroad to access information about life abroad, and possible government attempts to make emigration more difficult were the key factors increasing the students' probability of leaving the country. On the other hand, patriotism and strong national identity decreased emigration potential.

Rogerson and Rogerson (2000) interviewed 200 companies from various industries to examine how they dealt with the actual and potential emigration of skilled personnel, especially on recruitment and training. The key findings were as follows: 33% of companies claimed the impact of brain drain was significant, nearly 60% used specialist agencies to recruit skilled personnel and 62% adopted in-house training methods for skilled personnel.

Two studies specifically investigated the efficiency of the DHA. The study from Rogerson and Rogerson (2000) includes a section that investigated the experience of firms in dealing with the DHA. When it comes to recruiting skilled people from overseas, 31% and 29% rated the experience as negative and very negative, respectively. In particular, the firms asserted that the following structural problems prevented foreign, skilled individuals from entering South Africa: 1) highly time-consuming, obstructive and procedural processes of the DHA to secure high-skilled personnel; 2) high cost of firms to use lawyers or consultants; 3) lack of transparency in the decision-making process within the DHA, as well as internal operations, functioning and staffing at the DHA; and 4) insufficient understanding of the DHA of the demand for skilled workers by the enterprises.

In contrast, upon interviewing more than 3 000 people with regard to their perceptions about the DHA, Davids et al. (2005) found that the results were very positive in general, contradicting the findings of Rogerson and Rogerson (2000). For example, more than 80% were satisfied with the attitude of the DHA staff, describing them as attentive, considerate, friendly, helpful, honest and knowledgeable. The mean waiting time at the DHA offices was only about 20 minutes, whereas 49% of respondents claimed the DHA was more efficient at the time of the survey compared to during the apartheid period. The positive results greatly contrasted the negative media reporting on the DHA around the time of the study. In spite of this, there were concerns arising from some of the results upon interviewing 179 DHA officials, as nearly 40% indicated that they were unfamiliar with the 2002 Immigration Act, while 60% said they were unfamiliar with the1998 Refugees Act.

Finally, Adjai and Lazaridis (2013) interviewed 3 600 South Africans about their views on various issues relating to immigrants and xenophobia. The empirical findings showed that the natives generally exhibited high levels of xenophobia towards fellow African citizens, subjecting the latter group to numerous forms of discrimination and prejudice.

2.4.2 Studies using surveys and censuses

Three studies analysed the Quarterly Labour Force Survey (QLFS) data and focused on international immigrants. One study by Budlender (2014) analysed data from the migration module of the 2012 third quarter QLFS conducted by StatsSA to examine personal characteristics and labour market outcomes of different groups of South Africans, one of which was international immigrants into the country. The study found that these immigrants (1.23 million) accounted for 4% of the working-age population (WAP). Compared to natives, these immigrants enjoyed higher labour force participation (77%) and employment (65%) rates but lower unemployment likelihood (16%). For the international immigrants who found work in the country, they were relatively more likely than native individuals to work in construction and trade industries, as well as agriculture and private households. The latter two were low-paying industries often associated with inferior working conditions. Foreign-born workers were also much more likely to work in the informal sector and enjoyed fewer benefits (e.g. medical aid and pension scheme).

Fauvelle-Aymar (2014) used the same dataset but used it to take one step further by conducting a multivariate econometric analysis. The key labour market outcome indicators (as dependent variables of the regressions) of this analysis were employment, time-based underemployment, informal activities and precarious employment likelihoods. The results indicated that the probability of employment was significantly higher for international immigrants. The probability of employment in informal and precarious activities (both characterised by low levels of earnings) was also significantly higher for international immigrants, but this result was only valid for African black immigrants.

StatsSA (2019a) examined both the 2012 and 2017 QLFS migration module data to examine the socio-economic and demographic profile of the migrant labour force, and to investigate the link between employment and immigration. Two key empirical findings were derived upon comparing three migrant groups (non-movers, internal migrants and immigrants): 1) about one third of immigrants moved to South Africa to look for work or start a business and 2) immigrants were about twice as likely to be employed than internal migrants and non-movers. One drawback of this study is that it did not examine the type of work the three groups (if employed) were involved in, as Budlender (2014) and Fauvelle-Aymar (2014) did.

Five studies used the Census and the CS data to examine international migration, three of which also compared immigrants and natives. First, Zuberi and Sibanda (2004) examined the relationship between migration status, nativity and labour market outcomes in South Africa, using the 10% sample of the 1996 Census data and focusing on male individuals aged 20–55. The study distinguished two groups of immigrants: Southern African Development Community (SADC)-born and other foreign-born. Both groups were further categorised into long-term immigrants (those who came to South Africa before political independence in 1994) and recent immigrants (those who only moved to South Africa between 1994–1996). The empirical findings showed that all four groups of immigrants were more likely to participate in the labour force and find employment, compared to the indigenous population. However, SADC-born immigrants enjoyed an additional advantage: most of them faced significantly lower fixed costs of migrating to South Africa, as many SADC countries share a common border with South Africa.

Vermaak and Muller (2019) used the more recent 2011 Census data to investigate whether naturalised immigrants and foreigners fared better than locals in the labour market. The study found that, on average, immigrants were relatively more likely to seek work; part of this was attributed to the networks that some immigrants had access to. Nonetheless, some immigrants (particularly the foreigners) were involved in more precarious forms of employment associated with lower returns. After controlling for differences in worker characteristics, the study found that both employed naturalised immigrants and foreigners earned less than locals, but social networks helped them access better quality jobs with higher incomes. The OECD (2018) analysed both the 2001 and 2011 Census data to conduct a similar study. It found that immigrants performed significantly better than native-born individuals, in terms of labour force participation and employment probabilities. However, immigrants were relatively more likely to be involved in low-skilled (craft and elementary) occupations, and earned less than native-born workers, as also found by Vermaak and Muller (2019).

Next, Facchini et al. (2013) analysed the 1996 and 2001 Census, as well as the 2007 CS, data to examine the labour market effects of immigration, paying specific attention to south-south migration. At district level, increased immigration had a negative and significant effect on natives' employment rates (but not on income), especially for skilled white native workers. At national level, increased immigration had a negative and significant effect on natives' total income, but not on employment rate. Peters and Sundaram (2015) also somewhat paid attention to south-south migration, but only conducted a brief empirical analysis to compare the employment prospects of south-south and north-south immigrants from seven countries, with the aid of the 2001 Census data. The authors found that immigrants from advanced countries outperformed the natives. Moreover, educational attainment was positively associated with employment probability for immigrants.

2.4.3 Other studies

Myburgh (2004) used data from the statistical bureaus of the top emigration destination countries (i.e. the USA, Australia, the UK and New Zealand) to examine trends in emigration out of South Africa. The study found that these trends could be explained by three key factors, namely real wage differentials, immigration restrictions in the destination countries and political uncertainty. The study did not examine personal and labour market characteristics of the emigrants at all. On the other hand, Bohlman (2010) was the only time-series, macroeconomic study to conduct a computable general equilibrium analysis, with three simulation scenarios, of the macroeconomic impact of skilled emigration from South Africa in 2007–2014. It found that real GDP was 3% lower over the period as a result of skilled emigration.

2.5 Conclusion

This chapter provided a comprehensive literature review of migration concepts, types and theoretical models, migration policy changes since the advent of democracy, as well as past local empirical studies. For the latter, in addition to the use of primary data, the StatsSA Census, CS and QLFS data were also analysed. The main findings of these studies purport that while international immigrants into South Africa were more likely to participate in the labour force and find employment than natives, they also earned lower wages, as they were more likely to be involved in low-skilled occupations and informal sector activities. In other words, these studies did not strongly indicate that these immigrants were heavily engaged in high-paid and high-skilled activities in the labour market. The empirical findings also did not suggest that immigrants possess the skills that are of great demand in the South African labour market.

In light of the above, three research gaps from the existing local studies were identified: 1) only one study (Zuberi and Sibanda 2004) distinguished short-term from long-term immigrants; 2) how emigrants fared in the destination countries was not examined at all and 3) none of the studies comprehensively compared the personal and labour market characteristics of all three groups (immigrants, natives and emigrants). Therefore, this study aims to fill these existing research gaps, with the aid of the data and empirical analysis methods, which is discussed in the next chapter.

PART 3

Data and methods

3.1 Introduction

This chapter begins by discussing the various data sources for the forthcoming empirical analysis, before explaining the data analysis methods conducted in Chapter 4.

3.2 Data

3.2.1 Local data

The first number of sources of local data are published by StatsSA. First, the DM data provides information on the number of immigrants and emigrants from 1940–2003. For the 1983–2003 data, information on countries of origin and destination, as well as labour market status and broad occupation categories (if employed), is also available.

Data from the 2001 and 2011 Census, as well from the 2007 and 2016 CS, was also used for the study. These censuses and CSs capture information on country of birth, year of moving to South Africa (for those born outside of South Africa), place of usual residence, whether the person resided at the same place five years ago (the threshold was 10 years in the case of the 2011 Census), the year and month of moving and the province of previous residence for those who moved within the last five years (or 10 years in the 2011 Census).

One drawback of the Census and CS data is that income was captured in terms of intervals. Hence, the 2012 QLFS data is used as a supplementary data source to analyse the possible differences (if any) between wage and underemployment of native and immigrant workers. In addition, this study analysed the 1995 October Household Survey (OHS), September 2003 Labour Force Survey (LFS), as well as the 2011 and 2019 third quarter QLFS data, to provide a quick recap on the key trends in South African labour supply and demand since the advent of democracy.

3.2.2 International data

International data sources were needed, as the local data does not contain any information on South African emigrants. First, the 2017 edition of the United Nations Global Migration Database (UNGMD) contains information on the countries of origin of immigrants and countries of destination of emigrants from 1990–2017. The UNGMD provided more updated information on the top countries of destination for South African emigrants, to complement the findings derived from the relatively outdated DM data.

Having identified the top emigration destination countries, this study analysed the most recent Census or survey data of these countries to examine how South African emigrants fared in each country, namely the UK (2011 Census data), New Zealand (2013 Census data), the USA (2015 American Community Survey [ACS] data), Australia (2016 Census data) and Canada (2016 Census data). Unfortunately, not all the actual data was successfully obtained by the author – this is explained in Section 3.4.

3.3 Method

The abovementioned 1995 OHS, 2003 LFS, and the 2011 and 2019 QLFS data were analysed to derive some descriptive statistics on the key labour supply and demand trends in South Africa. These results are presented at the start of Chapter 4, before moving on to the analysis of the migration data. The 1940–2013 DM data was analysed first to provide a quick recap on the historical trends in international migration, before focusing on the 1983–2003 data to identify the top countries of origin of immigrants, top countries of destination for emigrants, as well as the labour market status and occupation of employed migrants. The UNGMD data was then used to find out the countries of origin and destination of immigrants and emigrants, respectively, in more recent years.

Next, the 2001 and 2011 Census, as well as the 2007 and 2016 CS, data was used to distinguish the immigrants and natives, whereas the Census data of the top five destination countries was used to distinguish the emigrants. These three groups (immigrants, natives and emigrants) were explored thoroughly by comparing the following:

- Personal characteristics: gender, population group, age, area type, province, marital status.
- Education characteristics: highest educational attainment, field of education (if having post-school qualifications).
- Labour market aggregates: labour market status, labour force participation rate (LFPR), unemployment rate.
- Work characteristics (if employed): occupation, industry, formal/informal sector, employers/employees.

The WAP was divided into the following six categories, based on the individual's country of birth and migration status:

1. Long-term international migrants: individuals who were born outside of South Africa but migrated into the country more than five years ago.
2. Medium-term international migrants: individuals who were born outside of South Africa but migrated into the country more than one year and up to five years ago.
3. Short-term international migrants: individuals who were born outside of South Africa but migrated into the country within the past year.
4. Native return migrants: individuals who were born in South Africa but returned to South Africa from overseas within the past five years.
5. Native permanent residents: individuals who were born in South Africa and remained in the country within the past five years. (Some of them might have relocated from one place to another within the country, but it must be kept in mind that this study was not about inter-provincial or intra-provincial migration.)
6. Other/Unspecified: those who did not clearly specify their country of birth.

A similar approach was adopted to distinguish the long-, medium- and short-term South African emigrants, if possible, depending on whether the Census and survey questionnaires of the top five destination countries captured information on the time of leaving South Africa.

Because the Census and CS data only captured income in intervals, this study analysed the 2012 QLFS data, which contains an additional section to capture migration information, to examine wages and underemployment. The WAP was first categorised into the same six groups as explained above, before going on to examine the wages and underemployment probability of the native and immigrant workers. The following three types of underemployment were investigated:

- Time-based underemployment: the employed usually work less than 35 hours per week, he/she would have liked to work more hours and he/she is available to start this extra work in the next four weeks (StatsSA 2008).
- Overeducation underemployment: education years of the worker in a particular broad occupation category is at least one standard deviation above the mean of all employed in this occupation category (McGuinness 2006).
- Income-based underemployment: the worker's monthly income is less than 125% of the poverty line (Findeis et al. 2009). This study used the StatsSA (2019b) lower-bound poverty line of R689 in 2016 December. In other words, the 125% of poverty-line threshold is calculated as R861.25 (= R689 × 1.25).

The study also derived and then examined descriptive statistics and kernel density functions on the wages of native and immigrant workers. It then went on to conduct a Heckman regression on log monthly earnings, conditional on labour force participation and employment, to control for possible sampling selection bias. (Discussion on this sampling selection issue falls beyond the scope of this study, but readers can refer to Bhorat and Leibbrandt [2001: 112–114], as well as Oosthuizen [2006: 53] for a detailed explanation). The explanatory variables included for the log earnings regression were gender, race, age, province, years of education and years of education squared (to capture the possible non-linear relationship between education and log earnings), years of experience and years of experience squared (again, to capture the possible non-linear relationship with log earnings), occupation, industry, formal/informal sector, public/private sector, trade union membership, log usual weekly work hours and migration status. Upon controlling for these differences, the results of the log earnings regression could indicate whether the international immigrant workers earned significantly more than the native workers.

Lastly, the empirical analysis in Chapter 4 primarily adopts a highly descriptive approach, by deriving various statistical tables and figures that outline the characteristics of the three groups. The empirical findings also help to identify gaps in the existing Census and survey (e.g. QLFS and CS) questionnaire and improve migration data capture, ease regulations to attract skilled immigrants into South Africa, retain skilled natives to avoid brain drain from the country, as well as suggest national education and training planning initiatives.

For example, if the study found that immigrants into South Africa are relatively less educated and less likely to be employed, but emigrants out of the country are more educated and more likely to be employed (particularly in the high-paying skilled occupations in the tertiary sector), it will suggest the presence of brain drain out of South Africa and possibly skills mismatch in the country's labour market (oversupply of low-skilled labour but undersupply of high-skilled labour in South Africa).

3.4 Limitations

The main data limitations of the study were as follows:

- While the comparison of natives and immigrants came from the same data source originating from the same year (i.e., the 2011 Census), there was no guarantee that the analysis of the emigrants' profiles came from the Census (of the top destination countries) originating in the same year.
- The questions in the Census questionnaires of these top five destination countries might not have been asked in exactly the same way as in the South African Census and CS.
- In the 2007 CS, those born outside South Africa were not asked to report their country of birth.
- Not exactly the same questions on work activities were asked in the four Censuses and CSs, as shown in Table 4 below.

TABLE 4: Questions on work activities of employed in each Census and Community Survey

	2001 CENSUS	2007 CS	2011 CENSUS	2016 CS
Broad occupation category	✔	✔	✔	✔#
Detailed occupation category	✔	✔#	✔	✔#
Broad industry category	✔	✔	✔	✔#
Detailed industry category	✔	✔#	✔	✔#
Formal/Informal sector		✔	✔	✔#
Employer/Employee	✔	✔		
Work hours	✔			

Note 1: '#' means the questions were asked in the survey but the data was not made available by StatsSA.

- It was not possible to obtain the 2016 CS data on labour market activities. Despite the fact that the information was captured by StatsSA, the data was not released. The author contacted StatsSA numerous times to request the "missing" data, but to no avail.
- The Census and CS only captured household income in terms of intervals, and this is why the 2012 QLFS third quarter data is used instead to examine wages and underemployment by migration status, as explained above. Nevertheless, it was not possible to conduct a comparative study by examining both the 2012 and 2017 QLFS third quarter data (the only two QLFSs that captured migration information), as StatsSA did not release the 2017 migration data to the public.
- The DM data released publicly by StatsSA only contains information on labour market status and broad occupation category (if employed) of the immigrants and emigrants, but nothing on demographic and educational attainment characteristics.
- It was not possible to obtain the 2011 UK, 2013 New Zealand and 2016 Australia Census data, as either the data was only accessible to the natives living in these countries, or there was a highly expensive cost for the statistical bureaus of these countries to derive very detailed statistical tables. Hence, only certain tables could be derived using the free online table generation tool from the respective countries' statistical bureau websites. For example, it was not possible to derive a table on broad industry category of employed South Africans in New Zealand.

- While it was possible to obtain the 2016 Canada Census data, in the country of birth variable, it is only possible to distinguish three African categories, namely "Eastern Africa", "Northern Africa" and "Other Africa". In fact, the online information showed there were 48 015 South Africans (Statistics Canada 2019), while the actual data showed there were 185 925 people under the "Other Africa" category. Hence, it meant South Africans only accounted for a 25.82% share. Subsequently, in some of the forthcoming tables, the "Other Africa" results would be presented as "proxy" results for South Africans residing in Canada, unless stated otherwise.

3.5 Conclusion

This chapter discussed the local and international data sources, as well as the empirical analysis methods, of this study. Chapter 4 moves on to present the empirical findings.

PART 4

Empirical findings

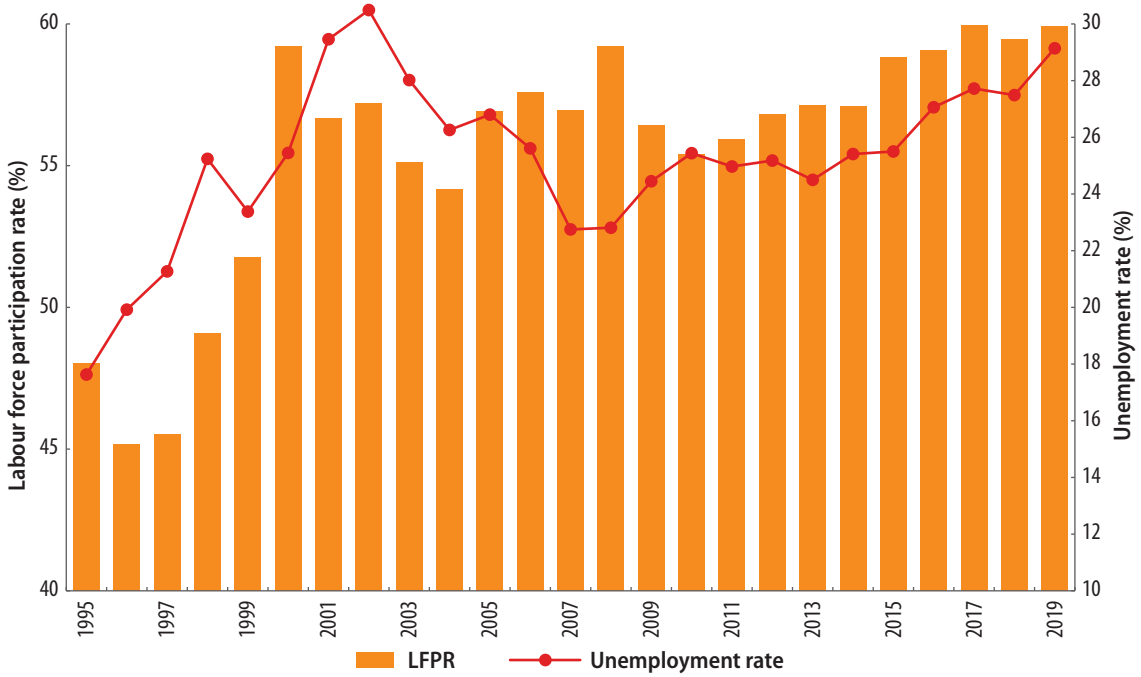
4.1 Introduction

This chapter first presents the key trends in South African labour supply and demand from 1995–2019, before using the DM and UNGMD data to present the historical immigration and emigration trends. Subsequently, the study uses the local and international Census and survey data to compare the characteristics of the three core groups (immigrants, natives and emigrants).

4.2 Key labour supply and demand trends in South Africa, 1995–2019

Between 1995 and 2019, the labour force increased from 11.50 to 23.10 million, whereas employment increased from 9.47 to 16.37 million (a lower annualised growth rate of 2.3%, compared to 2.9%, in terms of labour force growth rate). Figure 1 shows that the LFPR increased steadily from 48.0% to 59.9% during the 24-year period. The unemployment rate initially increased from 1995 to 2002 (peaking at 30.5%) before it declined to about 23% between 2007–2008. Unfortunately, however, it rose again since then, reaching 29.1% in 2019.

FIGURE 1: Labour force participation rates and unemployment rates, 1995–2019



Source: Author's calculations using the 1995–1999 OHS, 2000–2007 LFS and 2008–2019 QLFS data.

Table 5 shows the labour force (or labour supply) by educational attainment in the four selected surveys (1995 OHS, 2003 LFS, 2011 QLFS and 2019 QLFS). The labour force participants have become more educated over time, with their mean years of education increasing from 8.81 to 10.85 years (an increase of more than two years), while the percentage of those who attained at least Matric rose from 34.1% to 51.3% between 1995 and 2019. The last column of the table shows that the greatest share of labour force increase was represented by those with Matric as the highest educational attainment (44.7% relative share).

TABLE 5: Educational attainment of labour force, employed and unemployed, 1995–2019

	LABOUR FORCE									
	1995		2003		2011		2019		DIFFERENCE	
	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Absolute (1 000s)	Relative (%)
None	902	7.9	806	5.1	475	2.5	363	1.6	–540	–4.7
Incomplete primary	1 906	16.6	2 250	14.2	1 552	8.3	1 309	5.7	–597	–5.2
Incomplete secondary	4 674	40.7	6 342	40.1	7 772	41.3	9 346	40.5	4 671	40.3
Matric	2 530	22.0	4 323	27.4	5 709	30.4	7 709	33.4	5 180	44.7
Matric + Certificate/Diploma	938	8.2	1 170	7.4	1 922	10.2	2 081	9.0	1 143	9.9
Degree	455	4.0	819	5.2	1 161	6.2	2 049	8.9	1 594	13.7
Other/Unspecified	92	0.8	90	0.6	212	1.1	240	1.0	148	1.3
	11 497	100.0	15 802	100.0	18 804	100.0	23 096	100.0	11 599	100.0
Mean education years	*8.81*		*9.40*		*10.38*		*10.85*		*2.04*	
% with at least Matric	34.1		40.0		46.8		51.3		17.1	
% with post-Matric	12.1		12.6		16.4		17.9		5.8	

	EMPLOYED									
	1995		2003		2011		2019		DIFFERENCE	
	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Absolute (1 000s)	Relative (%)
None	761	8.0	662	5.8	385	2.7	291	1.8	–470	–6.8
Incomplete primary	1 532	16.2	1 649	14.5	1 228	8.7	957	5.9	–575	–8.3
Incomplete secondary	3 675	38.8	4 137	36.4	5 351	37.9	5 979	36.5	2 303	33.4
Matric	2 091	20.1	3 054	26.9	4 160	29.5	5 413	33.1	3 322	48.2
Matric + Certificate/Diploma	887	9.4	1 012	8.9	1 695	12.0	1 678	10.3	791	11.5
Degree	443	4.7	787	6.9	1 113	7.9	1 846	11.3	1 403	20.3
Other/Unspecified	81	0.9	72	0.6	176	1.3	203	1.2	122	1.8
	9 470	100.0	11 374	100.0	14 108	100.0	16 366	100.0	6 896	100.0

	EMPLOYED									
	1995		2003		2011		2019		DIFFERENCE	
	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Absolute (1 000s)	Relative (%)
Mean education years	*8.90*		*9.45*		*10.47*		*10.98*		*2.08*	
% with at least Matric	36.1		42.7		49.4		54.6		18.5	
% with post-Matric	14.1		15.8		19.9		21.5		7.5	

	UNEMPLOYED									
	1995		2003		2011		2019		DIFFERENCE	
	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Absolute (1 000s)	Relative (%)
None	141	7.0	144	3.3	90	1.9	72	1.1	–69	–1.5
Incomplete primary	374	18.5	601	13.6	324	6.9	353	5.2	–22	–0.5
Incomplete secondary	999	49.3	2 205	49.8	2 421	51.6	3 367	50.0	2 368	50.4
Matric	349	21.7	1 269	28.7	1 549	33.0	2 296	34.1	1 857	39.5
Matric + Certificate/Diploma	51	2.5	158	3.6	227	4.8	403	6.0	352	7.5
Degree	11	0.6	32	0.7	48	1.0	203	3.0	191	4.1
Other/Unspecified	11	0.6	18	0.4	36	0.8	37	0.6	26	0.6
	2 027	100.0	4 428	100.0	4 696	100.0	6 730	100.0	4 703	100.0
Mean education years	*8.41*		*9.28*		*10.14*		*10.54*		*2.13*	
% with at least Matric	24.7		33.0		38.9		43.1		18.4	
% with post-Matric	3.1		4.3		5.9		9.0		5.9	

Source: *Author's own calculations using the 1995 OHS, 2003 LFS, 2011 QLFS and 2019 QLFS data.*

TABLE 6: Broad occupation category and skills level of employed, selected years

	1995		2003		2011		2019		DIFFERENCE	
	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	ABSOLUTE (1 000s)	RELATIVE (%)
Occupation										
Managers	496	5.2	817	7.2	1 191	8.4	1 436	8.8	939	13.6
Professionals	325	3.4	540	4.8	808	5.7	961	5.9	637	9.2
Technicians	1 057	11.2	1 153	10.1	1 523	10.8	1 395	8.5	338	4.9
Clerks	1 133	12.0	1 151	10.1	1 503	10.7	1 695	10.4	562	8.2
Service and sales workers	1 080	11.4	1 358	11.9	2 079	14.7	2 775	17.0	1 696	24.6
Skilled agricultural workers	113	1.2	338	3.0	66	0.5	66	0.4	–48	–0.7
Craft and related trades	1 114	11.8	1 450	12.8	1 756	12.5	1 911	11.7	797	11.6
Operators and assemblers	1 104	11.7	1 142	10.0	1 175	8.3	1 342	8.2	238	3.5
Elementary occupations	2 337	24.7	2 517	22.1	3 040	21.5	3 748	22.9	1 411	20.5
Domestic workers	694	7.3	892	7.8	968	6.9	1 035	6.3	341	4.9
Other/Unspecified	18	0.2	17	0.2	0	0.0	3	0.0	–15	–0.2
	9 470	100.0	11 374	100.0	14 108	100.0	16 366	100.0	6 896	100.0
Skills level										
High skilled	821	8.7	1 357	11.9	1 998	14.2	2 397	14.7	1 576	22.9
Semi-skilled	5 601	59.1	6 591	58.0	8 102	57.4	9 184	56.1	3 583	52.0
Low skilled	3 031	32.0	3 409	30.0	4 008	28.4	4 783	29.2	1 752	25.4
Other/Unspecified	18	0.2	17	0.2	0	0.0	3	0.0	–15	–0.2
	9 470	100.0	11 374	100.0	14 108	100.0	16 366	100.0	6 896	100.0

Source: *Author's own calculations using the 1995 OHS, 2003 LFS, 2011 QLFS and 2019 QLFS data.*

TABLE 7: Broad industry category and work sector of employed, selected years

	1995		2003		2011		2019		DIFFERENCE	
	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	ABSOLUTE (1 000s)	RELATIVE (%)
Occupation										
Agriculture	1 227	13.0	1 204	10.6	653	4.6	879	5.4	–348	–5.0
Mining	440	4.7	552	4.9	346	2.5	419	2.6	–21	–0.3
Manufacturing	1 432	15.1	1 545	13.6	1 835	13.0	1 759	10.8	327	4.7
Utilities	84	0.9	91	0.8	80	0.6	133	0.8	49	0.7
Construction	442	4.7	662	5.8	1 137	8.1	1 338	8.2	896	13.0
Wholesale and retail trade	1 660	17.5	2 418	21.3	3 168	22.5	3 406	20.8	1 746	25.3
Transport	475	5.0	536	4.7	807	5.7	974	6.0	500	7.2
Finance	577	6.1	1 092	9.6	1 871	13.3	2 490	15.2	1 913	27.7
CSP services	2 168	22.9	2 170	19.1	3 007	21.3	3 677	22.5	1 509	21.9
Private households	796	8.4	1 069	9.4	1 200	8.5	1 285	7.9	489	7.1
Other/Unspecified	168	1.8	34	0.3	4	0.0	5	0.0	–164	–2.4
	9 470	100.0	11 374	100.0	14 108	100.0	16 366	100.0	6 896	100.0
Skills level										
Primary sector	1 667	17.6	1 756	15.4	999	7.1	1 298	7.9	–369	–5.4
Secondary sector	1 959	20.7	2 299	20.2	3 052	21.6	3 230	19.7	1 271	18.4
Tertiary sector	5 676	59.9	7 286	64.1	10 054	71.3	11 833	72.3	6 157	89.3
Other/Unspecified	168	1.8	34	0.3	4	0.0	5	0.0	–164	–2.4
	9 470	100.0	11 374	100.0	14 108	100.0	16 366	100.0	6 896	100.0

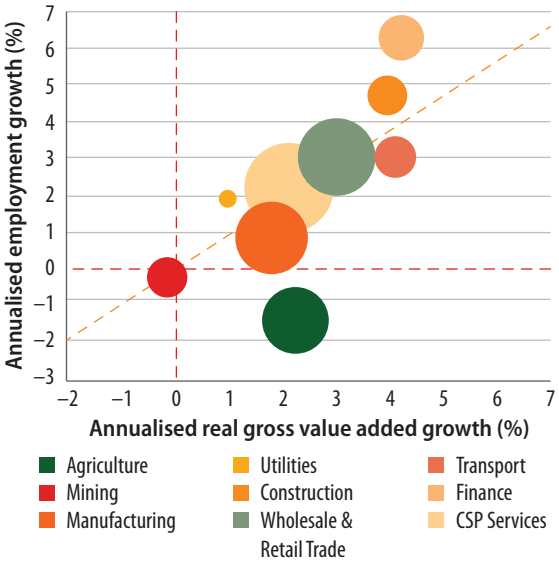
Source: Author's own calculations using the 1995 OHS, 2003 LFS, 2011 QLFS and 2019 QLFS data.

As far as the educational attainment of the employed is concerned, Table 5 indicates that they have also become more educated over time, as the years of education increased from 8.9 to 11.0, and the share of employed with at least Matric increased from 36.1% to 54.6%. With regards to the difference in employed between 1995 and 2019, about 48% of this increase was represented by those with Matric only. The respective relative shares for those with Bachelor's degrees and post-Matric certificates or diplomas were 20.3% and 11.5%. These results suggest that the post-apartheid South African labour market has a greater demand for highly educated individuals.

Tables 6 and 7 break down the employment totals by broad occupation and industry categories, respectively. First, Table 6 shows that between 1995 and 2019, the greatest employment increase was in the service and sales workers category (1.70 million and 24.6% increase, in absolute and relative terms, respectively), followed by elementary occupations (1.41 million and 20.5% increase). Interestingly, these two categories are not high-skilled occupations. The last number of rows of the table show that, looking at employment by skills level of occupations, the increase was somehow the greatest in semi-skilled occupations (3.58 million in absolute terms and 52.0% in relative terms).

According to Table 7, the Finance industry saw the greatest increase in employment (more than 1.9 million or 27.7% increase), followed by the Wholesale and Retail industries (1.75 million and 25.3% increase), as well as the Community, Social and Personal (CSP) Services industry (1.51 million and 21.9% increase). The last number of rows in the table clearly illustrate that the bulk of the growth in employment took place in the tertiary sector, as it accounted for a huge 89.3% (or 6.2 million) increase between 1995 and 2019.

FIGURE 2: Real gross value added and employment growth by broad industry category, 1995–2019



Source: *Author's own calculations using 1995 OHS, 2019 QLFS and South African Reserve Bank data.*
Note 1: the size of the bubble in the figure represents the 1995 employment number by industry.

TABLE 8: Duration of unemployed looking for work, selected years

	1995		2003		2011		2019		DIFFERENCE	
	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	NUMBER (1 000s)	SHARE (%)	ABSOLUTE (1 000s)	RELATIVE (%)
Less than 6 months	326	16.1	1 063	24.0	738	15.7	1 186	17.6	859	18.3
6–12 months	380	18.7	532	12.0	736	15.7	766	11.4	387	8.2
1–3 years	640	31.6	1 161	26.2	1 124	23.9	1 406	20.9	767	16.3
More than 3 years	681	33.6	1 617	36.5	2 088	44.5	3 324	49.4	2 643	56.2
Unspecified	0	0.0	55	1.2	10	0.2	48	0.7	48	1.0
	2 027	100.0	4 428	100.0	4 696	100.0	6 730	100.0	4 703	100.0

Source: Author's own calculations using the 1995 OHS, 2003 LFS, 2011 QLFS and 2019 QLFS data.

TABLE 9: Duration of unemployed looking for work by educational attainment, 2019

	SHARE OF UNEMPLOYED (%)					
	LESS THAN 6 MONTHS	6–12 MONTHS	1–3 YEARS	MORE THAN 3 YEARS	UNSPECIFIED	
None	21.2	7.6	10.6	59.1	1.6	100.0
Incomplete primary	25.1	9.2	12.4	53.2	0.1	100.0
Incomplete secondary	18.1	10.2	19.2	51.9	0.7	100.0
Matric	15.2	13.1	23.7	47.5	0.5	100.0
Matric + Certificate/Diploma	21.2	12.2	26.3	40.0	0.3	100.0
Degree	15.3	16.4	26.7	41.1	0.5	100.0
Other/Unspecified	28.2	12.3	17.4	40.2	1.9	100.0
All unemployed	17.6	11.4	20.9	49.4	0.7	100.0

Source: Author's own calculations using the 2019 QLFS data.

Figure 2 shows that the annualised employment growth rate was the greatest in the Finance, Construction, Transport, as well as Wholesale and Retail industry categories (above 3% in all of them). In fact, this growth rate was greater than the annualised real gross value added during the same period in the former two industry categories. On the contrary, Agriculture and Mining (both from the primary sector) were the only two categories to experience a negative annualised employment growth rate. The latter result suggests a decrease in demand for primary sector workers.

The last section of Table 5 shows the breakdown of the unemployed by level of education. Interestingly, unemployed individuals have also become more educated over time, with their mean years of education increasing from 8.41 to 10.54, and the share of the unemployed with at least Matric growing from 24.7% to 43.1%. Nonetheless, the last column of the table shows that more than half (50.4%) of the increase in unemployment was attributed to those with incomplete secondary education, followed by people with Matric only (39.5%).

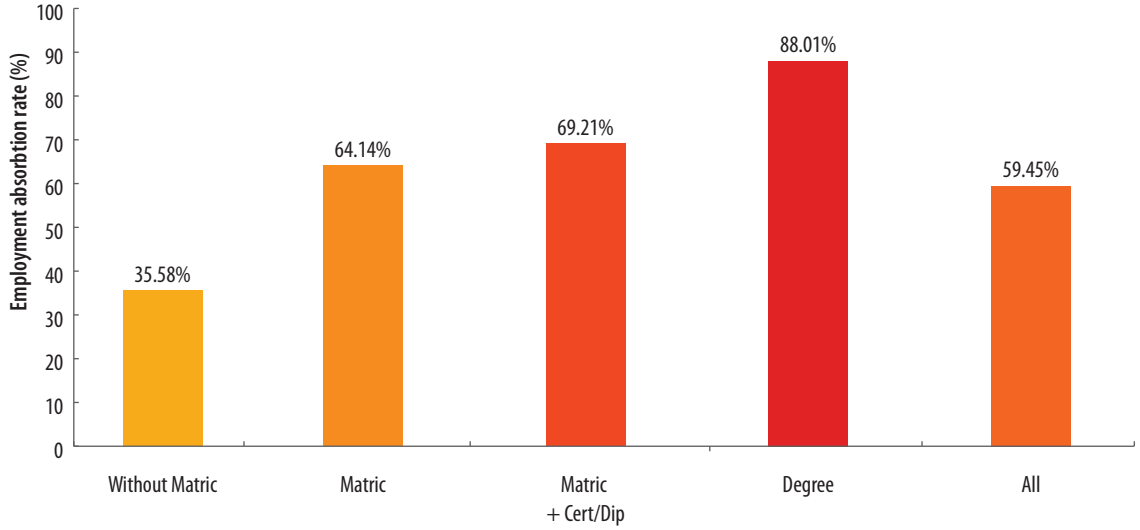
Table 8 provides additional information on the unemployed through the lens of the duration in which they sought work. These findings are worrying, as long-term unemployment has worsened over time; this is indicated by an increase of 2.64 million of the unemployed who had been seeking work for more than three years. These chronically unemployed individuals represented a 56.19% increase of unemployment during the period under study.

Lastly, Table 9 shows the results by educational attainment for 2019 only. They suggest that chronic unemployment was relatively more serious for those with lower levels of educational attainment, as the "seeking work for longer than three years" share was more than 50% (59.1%, 53.0% and 51.9% for the unemployed with no schooling, incomplete primary and incomplete secondary education, respectively).

Figure 3 presents the employment absorption rate (EAR) by educational attainment between 1995 and 2019. The EAR stands for the proportion of the net increase in the labour force that finds employment (Oosthuizen 2006: 18). In equation terms, EAR = (Employmentt – Employmentt-1)/(Labour Forcet – Labour Forcet-1); the numerator represents the change of employment number between time *t-1* and *t*, while the denominator means the change in labour force number during the same period. The results indicate that the EAR was the highest for those with a Degree at 88.0%, meaning nearly 9 of 10 net labour force entrants successfully found work in the labour market. This rate decreased across the less educated categories, dropping to as low as 35.9% for job seekers without Matric (that is, only fewer than 4 out of 10 job seekers without Matric were employed). These findings suggest an increase in demand for highly educated workers.

Lastly, despite not using the OHS/LFS/QLFS data, the 2020 study by the DHET listed 316 occupations that were of great demand in 2019. As shown in Table 10, it is obvious that these occupations are either semi-skilled or high-skilled, and more than 60% require post-Matric qualifications (or a National Qualifications Framework [NQF] level of at least 5). In fact, the majority of the high-skilled occupations in great demand that require post-Matric qualifications are in the areas of Finance, Information Systems/Technology, Engineering, Health and Education (for detailed results, refer to DHET 2020: 83–95). Therefore, the findings of Figure 3 and Table 10 strongly suggest an increased demand for highly educated and skilled workers in the South African labour market since the economic transition.

FIGURE 3: Employment absorption rate by educational attainment, 1995–2019



Source: *Author's own calculations using the 1995 OHS and 2019 QLFS data.*

TABLE 10: Skills level and required education level of occupations in great demand, 2019

SHARE OF TOTAL (%)		SHARE OF TOTAL (%)	
SKILLS LEVEL OF OCCUPATION		REQUIRED EDUCATION LEVEL	
High skilled	60.4	Without Matric	13.6
Semi-skilled	39.6	Matric	23.4
Unskilled	0.0	Matric + Certificate/Diploma	35.8
		Degree	27.2
	100.0		100.0

Data source: *DHET (2020: 83–95).*

To conclude Section 4.2, the descriptive statistics indicate that the labour force – employed and even unemployed – became more educated over time, as the mean years of education increased by about two years in all three of the abovementioned groups between 1995 and 2019. The share of the employed with post-Matric qualifications increased by nearly 20% (1995: 36.1%; 2019: 54.6%), and employment increase was relatively greater in semi-skilled occupations (most notably the service workers broad occupation category), as well as in the tertiary sector (particularly the Finance and CSP Services broad industry categories). Unfortunately, the shift towards tertiary sector service industries has not generated jobs at a rapid enough pace to absorb the net labour force entrants to reduce unemployment. It also seems the structural transformation in the country has gone straight from low-productivity agriculture (primary sector) to high-productivity services (tertiary sector), with no stop at manufacturing (secondary sector) along the way (Allen et al 2020: 7). Lastly, long-term or chronic unemployment became more serious over time, especially for those without Matric. All these findings conclude that there was a general increase in demand for highly educated individuals (with at least Matric) in the post-apartheid South African labour market.

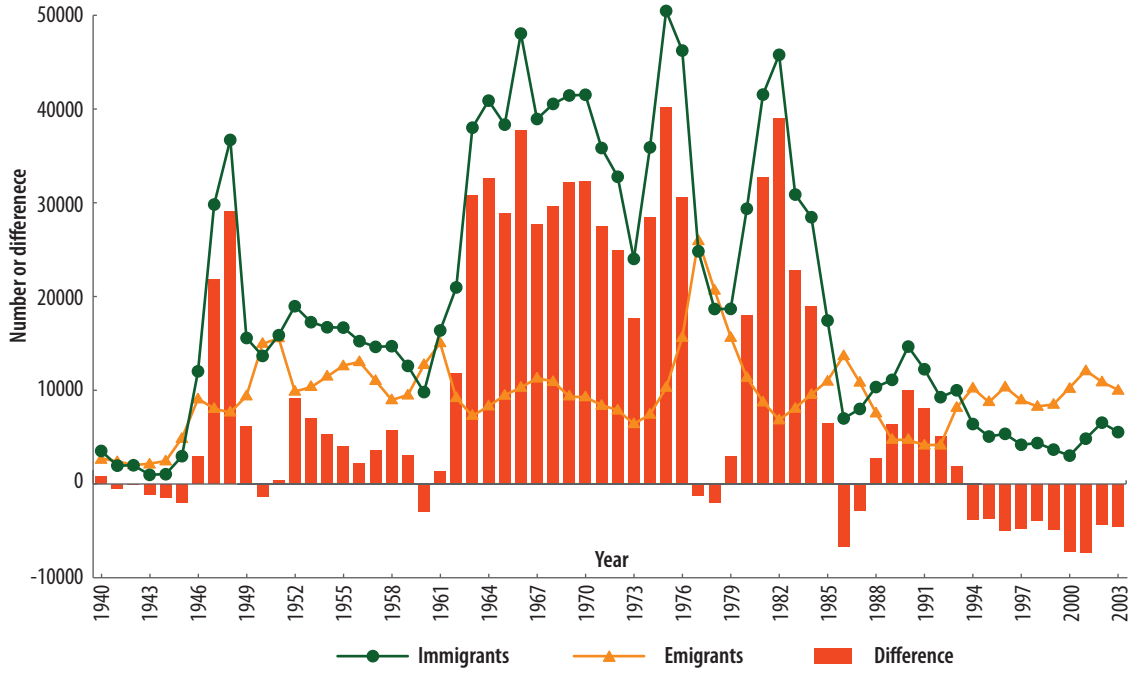
Section 4.3 looks at the empirical findings on international migration with the aid of various data sources. The possible linkages, if any, between the results of Sections 4.2 and 4.3 will be investigated, particularly the relationship between international migration and skills mismatch.

4.3 Empirical findings on international migration

4.3.1 Historical trends in international migration

Figure 4 and the first four columns of Table B1 in Appendix B present the official international migration statistics from 1940–2003. Until 1993, apart from the 5-year consecutive net loss of people from 1941–1945, there was a net inflow of migrants into South Africa in all but six years (1950, 1960, 1977–1978, 1986–1987). The net gain was the greatest in 1975 (40 209), followed by 1982 (38 952) and 1966 (37 762). Between 1994 and 2003, there was a consecutive 10-year net outflow of individuals, totalling 49 350, as shown in the second last row of Table 11. This net loss can mainly be attributed to the political uncertainty of the country since the democratic transition. Nonetheless, during the 1940–2003 period as a whole, there was a net inflow of 638 708. Furthermore, one noticeable finding on immigration is that a general downward trend took place since 1992, as the number of immigrants per annum dropped to below 10 000 for 12 consecutive years from 1992–2003.

FIGURE 4: Official statistics on Documented Migration, 1940–2003

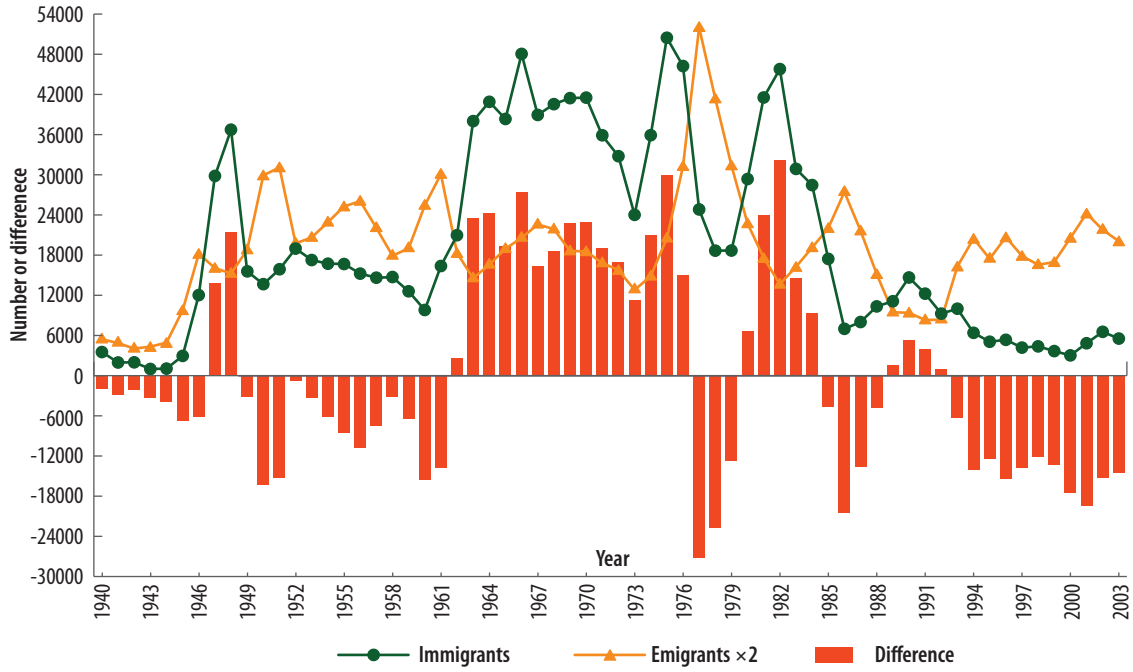


Data source: StatsSA (2004).

Both Mattes & Richmond (2000: 11) and Van Rooyen (2000: 27–29) argue that emigration has been underestimated, due to the way information is gathered at international departure points. Departing passengers are required to fill out a form indicating his/her reason for travel as "holiday" or "business", and some emigrants want to avoid the bureaucratic red tape (e.g., having the necessary paperwork to verify that the government has given its stamp of approval, tax clearance has been received, plus a multitude of other smaller inconveniences) and so opt not to alert the authorities about their status, especially in case they want to return to South Africa.

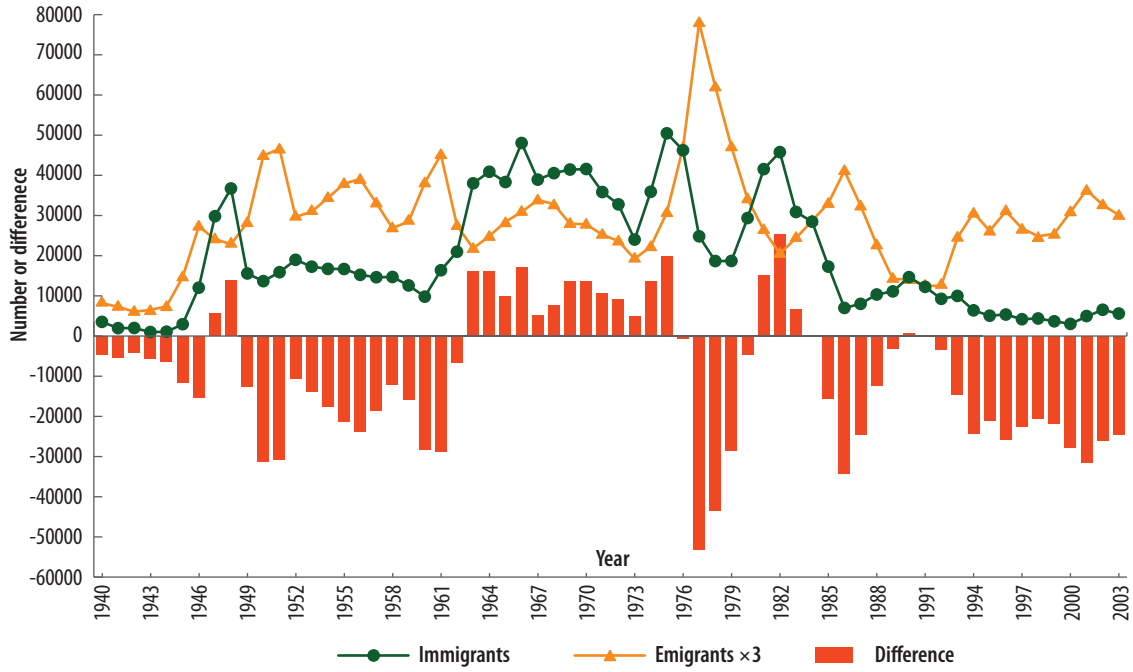
Hence, Van Rooyen (2000: 29) holds the view that a good starting point for calculating the real number of emigrants is to multiply the official numbers by two or three. Tables 11 and B1, as well as Figures 5 and 6, use these multiplying factors to derive the real number of emigrants from 1940–2003 (1.22 million using a factor of two, and 1.84 million with a factor of three). Subsequently, a net gain of merely 27 016 (using a multiplying factor of two) and a big net loss of 584 676 (using a factor of three) was captured for the 1940–2003 period.

FIGURE 5: "Real" migration statistics if the number of emigrants is multiplied by two, 1940–2003



Data source: StatsSA (2004).

FIGURE 6: "Real" migration statistics if the number of emigrants is multiplied by three, 1940–2003



Data source: StatsSA (2004).

TABLE 11: Number of immigrants and "real" number of emigrants in each period

PERIOD	METHOD [I]			METHOD [II]		METHOD [III]	
	[A]	[B]	[A]–[B]	[C]	[A]–[C]	[D]	[A]–[D]
	Immigrants	Emigrants	Difference	Emigrants × 2	Difference	Emigrants × 3	Difference
1940–1949	106 640	50 840	55 800	101 680	4 960	152 520	–45 880
1950–1959	156 366	117 321	39 045	234 642	–78 276	351 963	–195 597
1960–1969	333 378	103 793	229 585	207 586	125 792	311 379	21 999
1970–1979	328 944	127 674	201 270	255 348	73 596	383 022	–54 078
1980–1993	276 085	113 727	162 358	227 454	48 631	341 181	–65 096
1994–2003	48 987	98 337	–49 350	196 674	–147 687	295 011	–246 024
Total	1 250 400	611 692	638 708	1 223 384	27 016	1 835 076	–584 676

Data source: *StatsSA (2004).*
Note 1: Method [I]: Difference = Immigrants – Emigrants
Note 2: Method [II]: Difference = Immigrants – Emigrants × 2
Note 3: Method [III]: Difference = Immigrants – Emigrants × 3

The 1983–2003 DM publicly available data also provides information on the countries of origin of immigrants and countries of destination of emigrants. The results in Table 12 show that the UK, Australia, the USA and Canada have always been the top destination countries of emigrants during the 21-year period, but the share of emigrants who moved to New Zealand increased more than five times from 1.98% from 1983–1993 to 10.4% from 1994–2003. In contrast, the UK, Zimbabwe, Germany and China have always been the top countries of origin of immigrants. One notable finding was the increasing share of Indian immigrants (only 1.0% from 1983–1995 but 7.6% from 1996–2003).

TABLE 12: Top 10 countries of origin of immigrants and destinations of emigrants, 1983–2003

IMMIGRANTS (EACH COUNTRY'S SHARE OF TOTAL, %)			
COUNTRY	1983–1993	COUNTRY	1994–2003
United Kingdom	27.7	United Kingdom	14.2
Zimbabwe	25.7	India	7.6
Portugal	5.4	Zimbabwe	6.9
Germany	4.5	Germany	4.8
China	4.1	China	4.7
Israel	2.8	Lesotho	2.9
United States of America	1.9	Pakistan	2.7
Netherlands	1.6	United States of America	2.5
Zambia	1.2	Mozambique	2.0
Ireland	1.2	New Zealand	1.8
Other	25.8	Other	49.9
	100.0		100.0
EMIGRANTS (EACH COUNTRY'S SHARE OF TOTAL, %)			
COUNTRY	1983–1993	COUNTRY	1994–2003
United Kingdom	37.8	United Kingdom	27.9
Australia	22.6	Australia	15.9
United States of America	5.6	New Zealand	10.4
Canada	5.3	United States of America	9.5
Zimbabwe	3.9	Canada	5.5
Germany	3.1	Namibia	4.5
Israel	2.8	Zimbabwe	2.0
Netherlands	2.2	Germany	1.9
New Zealand	2.0	Botswana	1.8
Switzerland	1.1	Netherlands	1.5
Other	13.8	Other	19.3
	100.0		100.0

Data source: *Statistics South Africa (2004).*

Tables 13 and B2 in Appendix B supplement the DM statistics by showing the top 10 countries of origin and destinations for immigrants and emigrants from 1990–2017, respectively, using the mid-year migrant stock of the UNGMD data. The results once again suggest the dominance of the UK, Australia, the USA, Canada and New Zealand as the favoured destination countries of emigrants as time went by. In contrast, the UNGMD statistics show the important contribution of immigrants from Mozambique, despite the fact that the Mozambican immigrant share diminished significantly over time (29.8% in

1990 versus 9.5% in 2017). On the other hand, the share represented by immigrants from Zimbabwe increased during the same period (from 5.3% in 1990 to 16.1% in 2017).

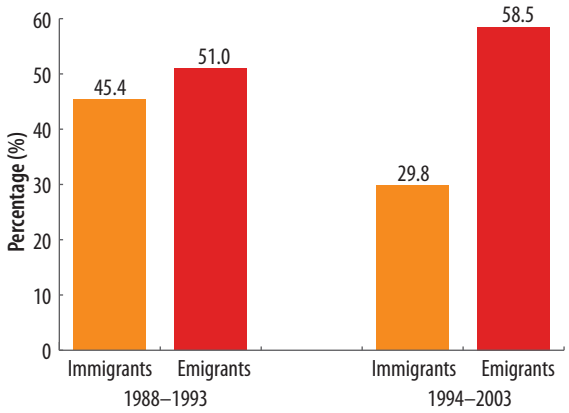
TABLE 13: Top 10 countries of origin of immigrants and destinations of mid-year migrant stock, 2005 and 2017

IMMIGRANTS (EACH COUNTRY'S SHARE OF TOTAL, %)			
COUNTRY	2005	COUNTRY	2017
Mozambique	18.2	Zimbabwe	16.1
Zimbabwe	18.2	Mozambique	9.5
United Kingdom	12.3	Lesotho	7.7
Lesotho	11.1	Namibia	4.3
Namibia	4.3	United Kingdom	3.1
Swaziland	3.1	Malawi	2.5
Malawi	2.5	Germany	2.3
Germany	2.3	Zambia	2.3
Zambia	2.3	Swaziland	2.2
Portugal	1.9	Botswana	1.7
Other	23.8	Other	48.3
	100.0		100.0
EMIGRANTS (EACH COUNTRY'S SHARE OF TOTAL, %)			
COUNTRY	2005	COUNTRY	2017
United Kingdom	25.8	United Kingdom	23.4
Australia	18.5	Australia	21.4
United States of America	11.8	United States of America	11.1
New Zealand	6.5	New Zealand	6.4
Canada	6.2	Canada	5.3
Botswana	3.4	Angola	4.8
Zimbabwe	3.1	Botswana	4.3
Mozambique	2.9	Chile	2.4
Netherlands	2.0	Zimbabwe	2.1
Portugal	1.8	Germany	2.1
Other	18.1	Other	16.9
	100.0		100.0

Data source: *United Nations (2019).*

Returning to the DM statistics, the 1988–2003 data provides information on the employment status and broad occupation category of both immigrants and emigrants. First, Figure 7 shows that in the two periods under study, the percentage of emigrants who were economically active at the time of leaving South Africa (1988–1993: 51.0%; 1994–2003: 58.5%) was higher, compared to the corresponding percentages of the immigrants (1988–1993: 45.4%, 1994–2003: 29.8%).

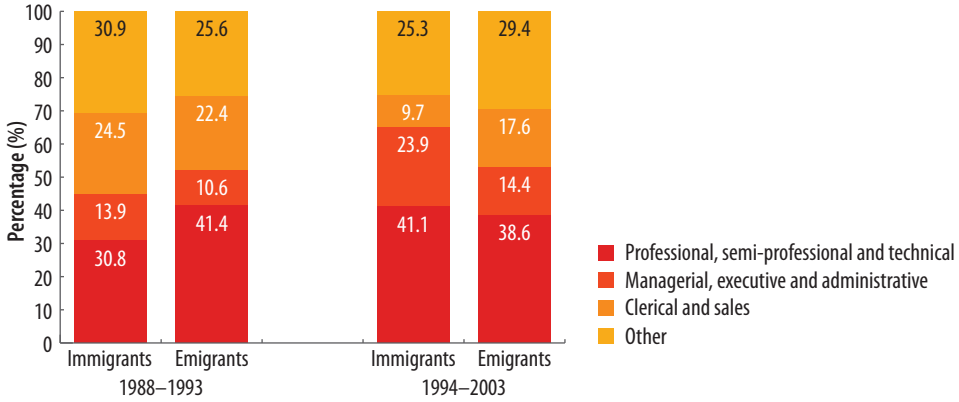
FIGURE 7: Proportion of migrants who were economically active, 1988–2003



Data source: StatsSA (2004).

Figure 8 shows the skills level of the economically active migrants. It is interesting that from 1988–1993, just before the political transition, a relatively large share of emigrants (41.4%) were involved in high-skilled professional, semi-professional and technical occupations, compared to immigrants (30.8%). From 1994–2003, while this high-skilled share was 41.1% for immigrants, it was only slightly lower for emigrants (38.6%) from 1994–2003. To conclude, these findings suggest that serious brain drain probably took place in the South African labour market.

FIGURE 8: Skills level of the economically active migrants, 1988–2003



Data source: StatsSA (2004).

4.3.2 Examining the profile of immigrants and natives

Table 14 below presents the number and share of each of the six groups of international immigrants and natives, as explained in Section 3.3. The results suggest that the total number of international immigrants (i.e., the sum of groups [1]–[3]) increased from 0.71 million in 2001 to 1.32 million in 2016; these immigrants as a proportion of total WAP in South Africa increased from 2.7% to 3.8%. The table also indicates that the native return migrants only accounted for a very small share of the WAP. Hence, for the remainder of the empirical analysis, they are simply included as part of the total native residents, that is groups [4] and [5] are merged as one group called "natives".

TABLE 14: Number and percentage of people in each migration status category, 2001–2016

	2001 CENSUS		2007 CS		2011 CENSUS		2016 CS	
	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)
[1] Long-term immigrants	616	2.4	877	2.9	825	2.6	923	2.7
[2] Medium-term immigrants	47	0.2	83	0.3	509	1.6	240	0.7
[3] Short-term immigrants	51	0.2	79	0.3	440	1.4	153	0.4
[4] Native return migrants	21	0.1	37	0.1	28	0.1	13	0.0
[5] Native permanent residents	25 403	97.2	28 896	96.2	29 582	92.9	33 475	96.1
[6] Other/Unspecified	0	0.0	68	0.2	446	1.4	46	0.1
	26 138	100.0	30 040	100.0	31 831	100.0	34 849	100.0
[1]–[3]: Total – Immigrants	714	2.7	1 038	3.5	1 775	5.6	1 316	3.8
[4]–[5]: Total – Natives	25 424	97.3	28 933	96.3	29 611	93.0	33 488	96.1
[6]: Total – Other/Unspecified	0	0.0	68	0.2	446	1.4	46	0.1
	26 138	100.0	30 040	100.0	31 831	100.0	34 849	100.0

Source: *Author's calculations using the 2001 and 2011 Census and 2007 and 2016 CS data.*

Tables 15 and B3 in Appendix B compare the personal characteristics of immigrants and natives. First, the male share was more dominant (about 60%) for immigrants, whereas females were slightly more dominant (51%–52%) for the native WAP. As expected, Africans were the most dominant racial group, but this share was relatively lower for immigrants from 2001–2011. The long-term immigrants were relatively older, with a mean age of about 38 years, whereas the medium- and short-term immigrants were the youngest, with a mean age of around 30 years. Only about 38% of the native WAP were married or lived with a partner, but this share was much higher at almost two thirds for immigrants. The latter result implies that international immigration into South Africa was more likely to be a household-level decision by the head and his/her spouse (refer to the new household economics of migration theory discussed in Appendix A).

Next, Tables 16 and B4 in Appendix B show that, until 2011, immigrants were relatively more educated than the native population. Nonetheless, at the time of the 2016 CS, nearly 60% of immigrants were still without Matric. In other words, the majority of immigrants into South Africa were not highly educated, despite being relatively more educated on average than native individuals. Furthermore, both immigrants and natives became more educated over time, as the mean years of educational attainment increased for both groups from 2001–2016. Table 17 also shows that a relatively higher proportion of immigrants with a post-school qualification graduated in the fields of Business, Commerce or Management Sciences, as well as Education, Training or Development. On the contrary, the shares of immigrants with Engineering, Health or Computer Science qualifications (13.0%, 8.3% and 6.5% respectively, in 2016) in general were slightly higher, compared to natives (8.3%, 8.2% and 4.5% respectively, in the same year).

TABLE 15: Personal characteristics of immigrants and natives (share of total, %), 2001 versus 2016

		2001 CENSUS						2016 CS					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]	[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]
Gender	Male	57.7	60.2	56.6	57.8	46.6	46.9	61.7	57.1	53.0	59.8	48.9	49.3
	Female	42.3	39.8	43.4	42.2	53.4	53.1	38.3	42.9	47.0	40.2	51.1	50.7
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Race	African	51.8	73.3	72.0	54.6	77.7	77.0	81.8	90.6	92.0	84.6	79.3	79.5
	Coloured	1.4	1.5	1.5	1.4	9.6	9.3	0.9	0.4	0.3	0.8	9.6	9.3
	Indian	3.2	7.1	5.8	3.6	2.8	2.9	4.5	5.8	3.0	4.6	2.7	2.7
	White	43.7	18.1	20.7	40.3	9.9	10.8	12.8	3.2	4.7	10.1	8.4	8.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age cohort	15–24 years	16.2	32.4	38.6	18.9	33.2	32.8	8.5	31.0	38.2	16.1	29.5	29.0
	25–34 years	27.4	38.6	35.9	28.7	25.5	25.6	33.7	48.1	38.7	36.9	26.8	27.2
	35–44 years	24.5	16.8	15.1	23.4	20.1	20.2	32.0	16.4	15.1	27.2	19.5	19.8
	45–54 years	18.3	8.4	7.0	16.8	13.2	13.3	16.1	3.6	5.7	12.6	14.3	14.2
	55–64 years	13.6	3.9	3.4	12.3	8.1	8.2	9.7	1.0	2.3	7.3	9.9	9.8
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Mean (years)	*38.15*	*30.81*	*29.60*	*37.05*	*32.97*	*33.08*	*37.86*	*28.98*	*28.99*	*35.21*	*34.12*	*34.16*
Marital status	Married or lived together	67.2	52.4	48.1	64.9	41.4	42.1	65.5	53.1	50.3	61.5	34.1	35.2
	Other	32.8	47.6	51.9	35.1	58.6	57.9	34.5	46.9	49.7	38.6	65.9	64.9
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2001 Census and 2016 CS data.*

TABLE 16: Education, geographical and labour market characteristics of immigrants and natives (share of total, %), 2001 versus 2016

		2001 CENSUS						2016 CS					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]	[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]
Educational attainment	None	13.6	12.3	10.2	13.3	13.1	13.1	7.4	5.3	6.8	7.0	4.6	4.7
	Incomplete primary	11.2	12.3	11.1	11.3	15.9	15.7	10.0	8.5	11.5	9.9	7.4	7.5
	Incomplete secondary	29.7	36.1	36.6	30.6	44.9	44.5	39.7	49.5	51.1	42.8	44.8	44.7
	Matric	24.0	19.3	20.5	23.4	19.1	19.2	23.9	23.7	19.6	23.4	32.0	31.7
	Matric + Certificate/Diploma	10.7	7.4	7.6	10.2	4.7	4.8	4.4	3.2	2.1	3.9	4.2	4.2
	Degree	10.7	12.6	14.1	11.1	2.3	2.6	10.7	7.0	5.4	9.4	5.2	5.3
	Other/Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	3.9	2.9	3.6	3.7	1.8	1.9
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Mean (years)	*9.29*	*9.19*	*9.57*	*9.30*	*8.08*	*8.11*	*9.74*	*9.75*	*9.17*	*9.67*	*10.03*	*10.02*
Area type	Urban	80.9	79.3	78.0	80.6	61.1	61.6	84.7	81.2	76.2	83.1	66.3	67.0
	Rural	19.1	20.7	22.0	19.4	39.0	38.4	15.3	18.8	23.8	16.9	33.6	33.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Province	Western Cape	10.3	10.3	11.6	10.4	10.9	10.9	10.6	12.2	10.9	10.9	12.0	11.9
	Eastern Cape	3.2	2.7	3.4	3.2	13.4	13.1	3.2	4.0	4.3	3.5	11.9	11.6
	Northern Cape	1.3	0.6	0.7	1.2	1.8	1.8	1.1	1.3	1.1	1.1	2.2	2.2
	Free State	3.7	4.7	5.2	3.8	6.3	6.2	3.6	3.3	3.1	3.5	5.3	5.2
	KwaZulu-Natal	9.6	7.1	6.9	9.3	20.7	20.4	5.0	4.9	4.7	5.0	19.1	18.6
	North West	7.2	7.0	7.9	7.2	8.3	8.2	8.0	8.3	8.8	8.1	6.7	6.8
	Gauteng	49.3	52.6	48.6	49.4	21.8	22.5	54.0	48.2	44.8	51.9	25.0	26.1
	Mpumalanga	7.7	7.7	8.0	7.8	6.6	6.6	7.3	7.5	7.4	7.3	7.8	7.8
	Limpopo	7.8	7.4	7.7	7.8	10.3	10.3	7.3	10.4	15.0	8.8	10.0	9.9
		100.0	100.0	100.0	100.00	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Labour market status	Employed	60.5	55.5	46.7	59.2	32.6	33.3	–	–	–	–	–	–
	Unemployed	14.2	17.4	20.3	14.9	24.9	24.6	–	–	–	–	–	–
	Inactive	25.3	27.2	33.1	26.0	42.6	42.1	–	–	–	–	–	–
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2001 Census and 2016 CS data.*
Note 1: A dash ("-") means the data is unavailable.

TABLE 17: Field of study for immigrants and natives with post-school qualifications (share of total, %), 2001–2016

	[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]
2001 CENSUS						
Education, Training or Development	8.9	6.5	8.1	8.7	24.1	22.9
Business, Commerce or Management	23.5	22.4	23.6	23.5	17.9	18.3
Engineering or Engineering Technology	17.4	13.5	11.3	16.7	9.7	10.2
Health Care of Health Sciences	9.3	8.8	7.6	9.2	8.3	8.4
Computer Science or Data Processing	5.1	6.7	5.8	5.2	7.9	7.7
Other	35.9	42.1	43.6	36.8	32.1	32.5
	100.0	100.0	100.0	100.0	100.0	100.0
2011 CENSUS						
Education, Training or Development	5.5	6.9	4.6	5.7	10.3	9.9
Business, Commerce or Management	10.1	8.5	9.0	9.5	7.2	7.3
Engineering or Engineering Technology	7.0	4.4	4.7	5.9	6.6	6.5
Health Care of Health Sciences	9.1	7.4	6.1	8.1	5.3	5.5
Computer Science or Data Processing	2.2	2.9	2.9	2.5	2.2	2.2
Other	66.2	70.0	72.7	68.3	68.5	68.6
	100.0	100.0	100.0	100.0	100.0	100.0
2016 CS						
Education, Training or Development	10.2	7.5	8.7	9.7	19.0	18.4
Business, Commerce or Management	21.1	22.6	19.6	21.2	16.5	16.8
Engineering or Engineering Technology	13.5	12.0	9.0	13.0	8.3	8.6
Health Care of Health Sciences	8.6	6.9	7.7	8.3	8.2	8.2
Computer Science or Data Processing	6.3	7.7	5.5	6.5	4.5	4.6
Other	40.4	43.5	49.5	41.4	43.6	43.5
	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's own calculations using the 2001 & 2011 Census and 2016 CS data.*
Note 1: Field of study was not captured in the 2007 CS.

According to Table 16, slightly above 80% of immigrants resided in urban areas but this proportion was two thirds lower for natives. In addition, it is interesting that about half of the immigrants lived in Gauteng, with the Western Cape as the second most dominant province of residence (about 12%). However, the Gauteng share was only about 22% when it comes to the native WAP. The fact that Gauteng and the Western Cape are the two most popular provinces of destination for international immigrants is expected, as they are associated with relatively better labour market outcomes, compared to the other provinces. At the time of the 2019 QLFS, the LFPR in Gauteng was 70.0%, the unemployment rate was 30.9% and the province represented the largest share of all the employed (30.9%). The corresponding figures in the Western Cape were 67.6%, 21.5% and 15.2%. These two provinces also contribute most to the economic success of the country, accounting for a combined 49% of the GDP in 2019 (StatsSA 2020).

Table 18 shows that the immigrants were associated with a higher LFPR and lower unemployment likelihood, compared to the native WAP. Tables 19 and B5 in Appendix B show the broad occupation and industry categories of the employed immigrants and natives. At the time of the 2011 Census, only 24% of immigrant workers were engaged in high-skilled occupations (managers, professionals or technicians), and the remaining immigrant workers were involved in semi-skilled or low-skilled occupations (particularly in the following categories: elementary occupations, service and sales workers, craft and related trades). This result is not surprising, as it was found earlier (in Table 16) that some of the immigrants did not have high levels of educational attainment. Hence, the results imply there could be vacant high-skilled occupations that are not successfully filled by both natives and immigrants.

TABLE 18: Labour force participation rates and unemployment rates of immigrants and natives (%), 2001–2011

		[1]	[2]	[3]	[1]–[3]	[4]–[5]	ALL
LABOUR FORCE PARTICIPATION RATE	2001 Census	1. 74.7	2. 72.8	3. 66.9	4. 74.0	5. 57.5	6. 57.9
	2007 CS	7. 80.2	8. 76.2	9. 75.1	10. 79.5	11. 61.2	12. 61.8
	2011 Census	13. 78.4	14. 79.3	15. 74.0	16. 77.6	17. 55.2	18. 56.5
UNEMPLOYMENT RATE	2001 Census	19. 19.1	20. 23.9	21. 30.3	22. 20.1	23. 43.3	24. 42.5
	2007 CS	25. 14.2	26. 17.1	27. 22.0	28. 15.0	29. 33.8	30. 32.9
	2011 Census	31. 15.5	32. 17.6	33. 21.1	34. 17.5	35. 30.7	36. 29.7

Source: Author's own calculations using the 2001 and 2011 Census and 2007 CS data.

Furthermore, nearly 70% of the immigrant employed worked in the tertiary sector (the corresponding proportion was 73% for the native employed), especially in the following broad industry categories (the corresponding employment shares in 2011 in brackets): Wholesale and Retail Trade (22.1%), CSP Services (14.5%), Private Households (14.0%) and Finance (13.2%). Tables B6 and B7 in Appendix B show the detailed occupation and industry categories of the immigrant and native employed in 2011, respectively. The results are highly similar amongst the three groups of immigrants. In addition, the empirical findings suggest that immigrants were more likely to be involved in semi-skilled and unskilled occupations in the tertiary sector.

Table 20 compares educational attainment with the skills level of occupation of the employed. Moving across the more educated categories, the percentage of employed involved in high-skilled occupations increased accordingly, reaching as high as 61.5% for those with Bachelor's degrees. The results were highly similar for both immigrants and natives in 2011.

TABLE 19: Work characteristics of immigrants and natives (if employed) (share of total, %), 2001 versus 2011

		2001 CENSUS						2011 CENSUS					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]	[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]
Broad occupation category	Managers	12.0	8.2	7.5	11.5	5.3	5.6	11.4	7.8	8.3	9.6	8.1	8.3
	Professionals	13.6	10.1	12.6	13.3	6.9	7.2	8.6	6.2	5.8	7.3	7.3	7.3
	Technicians	9.7	5.4	4.9	9.1	9.9	9.9	7.8	6.7	6.4	7.2	10.0	9.7
	Clerks	9.1	5.5	4.7	8.6	11.5	11.4	10.6	9.3	9.3	9.9	12.4	12.2
	Service and sales workers	11.1	14.1	13.5	11.4	10.3	10.3	16.1	17.9	16.9	16.8	16.2	16.3
	Skilled agricultural workers	2.4	3.0	4.2	2.6	2.6	2.6	0.9	0.8	1.0	0.9	0.9	0.9
	Craft and related trades	15.7	13.7	11.7	15.4	11.8	11.9	15.0	16.7	15.0	15.5	12.0	12.3
	Operators and assemblers	4.4	4.6	3.2	4.4	8.7	8.5	6.5	6.0	6.6	6.4	6.8	6.7
	Elementary occupations	17.8	30.2	29.5	19.2	20.0	20.0	14.4	17.6	19.5	16.5	16.7	16.7
	Domestic workers	4.2	5.4	8.1	4.4	13.0	12.6	8.6	11.1	11.3	10.0	9.5	9.6
	Other/Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Broad industry category	Agriculture	8.3	16.2	17.9	9.3	9.3	9.3	5.1	6.2	8.4	6.1	5.1	5.2
	Mining	7.2	4.8	4.5	6.9	2.7	2.9	4.7	2.4	3.0	3.6	2.9	3.0
	Manufacturing	13.4	9.8	8.2	12.9	12.9	12.9	9.5	8.3	8.5	8.9	9.9	9.8
	Utilities	0.7	0.3	0.4	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.9	0.9
	Construction	8.0	7.6	6.7	7.9	5.4	5.5	10.5	11.4	10.9	10.9	7.9	8.2
	Wholesale and retail trade	18.7	23.9	19.7	19.1	15.5	15.7	19.5	23.0	22.1	21.1	16.9	17.3
	Transport	4.0	3.2	3.5	4.0	4.8	4.8	5.3	4.8	4.8	5.1	6.2	6.1
	Finance	12.8	8.2	8.1	12.2	9.6	9.7	16.7	14.0	13.2	15.1	15.2	15.2
	CSP services	22.3	18.9	21.2	22.0	28.7	28.4	17.1	15.3	14.5	16.0	23.7	23.0
	Private households	4.7	7.2	9.9	5.1	10.4	10.1	10.9	14.0	14.0	12.5	11.3	11.5
	Other/Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2001 and 2011 Census data.*

TABLE 20: Percentage of employed in each skills level of occupation by educational attainment, 2011

	HIGH-SKILLED	SEMI-SKILLED	UNSKILLED	UNSPECIFIED	
[1]–[3]: TOTAL – IMMIGRANTS (% IN EACH SKILLS LEVEL OF OCCUPATION)					
None	12.6	48.1	39.3	0.1	100.0
Incomplete primary	11.7	52.7	35.7	0.0	100.0
Incomplete secondary	12.6	52.6	34.8	0.0	100.0
Matric	25.1	55.2	19.7	0.1	100.0
Matric + Certificate/Diploma	40.3	46.6	13.1	0.0	100.0
Degree	61.4	30.2	8.3	0.0	100.0
All	24.1	49.5	26.4	0.0	100.0
[4]–[5]: TOTAL – NATIVES (% IN EACH SKILLS LEVEL OF OCCUPATION)					
None	10.7	39.2	50.0	0.0	100.0
Incomplete primary	11.5	42.9	45.6	0.0	100.0
Incomplete secondary	14.4	50.4	35.3	0.0	100.0
Matric	24.6	55.6	19.8	0.0	100.0
Matric + Certificate/Diploma	41.9	45.8	12.3	0.0	100.0
Degree	61.6	30.2	8.3	0.0	100.0
All	25.4	48.4	26.2	0.0	100.0

Source: *Author's calculations using the 2011 Census data.*

Table 21 shows that immigrants were relatively more likely to be involved in informal sector activities (especially short-term immigrants), compared to natives. These findings align with those of recent local empirical studies (Zuberi & Sibanda 2004; OECD 2018; Vermaak & Muller 2019), as reviewed in Chapter 2. Table 22 shows that, while both immigrant and native employed were more likely to work as employees, the share of self-employed was clearly greater in the former category. In 2001, more than 22% of immigrant workers were either self-employed or employers but the corresponding proportion was only about 9% for natives. Similar findings were observed at the time of the 2007 CS (immigrants: 23.5%; natives: 11.6%).

TABLE 21: Formal/Informal sector work status of immigrants and natives (share of total, %), 2007–2011

		[1]	[2]	[3]	[1]–[3]	[4]–[5]	ALL
2007 CS	Formal	72.5	60.2	54.1	70.3	68.1	68.2
	Informal	22.5	32.2	41.2	24.4	23.6	23.6
	Other/Unspecified	5.1	7.6	4.8	5.2	8.3	8.1
		100.0	100.0	100.0	100.0	100.0	100.0
2011 CENSUS	Formal	58.4	49.0	46.9	53.1	65.2	64.2
	Informal	11.9	14.8	15.4	13.6	9.0	9.4
	Private households	10.9	14.0	14.0	12.5	11.3	11.5
	Other/Unspecified	18.8	22.2	23.7	20.9	14.5	15.0
		100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's own calculations using the 2007 CS and 2011 Census data.*

TABLE 22: Employer/Employee work status of immigrants and natives (share of total, %), 2001–2007

		[1]	[2]	[3]	[1]–[3]	[4]–[5]	ALL
2001 CENSUS	Paid employee	75.6	75.0	77.4	75.7	89.5	88.8
	Paid family member	1.2	1.8	1.6	1.3	1.3	1.3
	Self-employed	20.7	21.1	19.5	20.7	7.3	8.0
	Employer	2.0	2.0	1.2	1.9	1.5	1.5
	Unpaid family member	0.5	0.3	0.3	0.5	0.4	0.4
		100.0	100.0	100.0	100.0	100.0	100.0
2007 CS	Paid employee	71.3	63.8	70.2	70.7	78.2	77.8
	Paid family member	1.2	1.3	2.7	1.3	1.6	1.6
	Self-employed	22.0	27.0	21.0	22.3	10.5	11.1
	Employer	1.4	1.1	1.0	1.4	1.2	1.2
	Unpaid family member	0.6	1.5	1.1	0.7	2.2	2.1
		100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's own calculations using the 2007 CS and 2011 Census data.*

Table 23 shows the top 10 countries of origin of all international immigrants. These results align with those derived from using the OECD's UNGMD statistics (refer to Table 13), as the majority of immigrants into South Africa originated from numerous African countries, most notably Zimbabwe, Mozambique, Lesotho, Malawi, Swaziland and Namibia. One exception is the UK, which has always been one of the top 10 countries of origin, and this result may explain the relatively higher share of white immigrants compared to natives, as shown in Table 15 above. Lastly, Table B8 in Appendix B shows the top 10 countries of origin of each of the three groups of immigrants and, once again, the results indicate that the African countries were dominant.

TABLE 23: Top 10 countries of origin of immigrants using the Census and CS data (share of total, %), 2001–2016

2001 CENSUS		2011 CENSUS		2016 CS	
EACH COUNTRY'S SHARE OF TOTAL (%)					
Mozambique	27.4	Zimbabwe	32.2	Zimbabwe	37.9
Zimbabwe	15.0	Mozambique	18.7	Mozambique	19.5
United Kingdom	12.2	Lesotho	7.8	Lesotho	10.6
Lesotho	9.0	Malawi	4.4	Malawi	5.5
Namibia	4.8	United Kingdom	2.7	Swaziland	2.4
Swaziland	2.8	Namibia	1.8	Nigeria	2.1
Zambia	2.7	Swaziland	1.7	Democratic Republic of Congo	2.1
Malawi	2.6	Ethiopia	1.5	Namibia	1.9
Germany	2.2	India	1.4	United Kingdom	1.8
Portugal	2.1	Zambia	1.4	Ethiopia	1.6
Other	19.3	Other	26.5	Other	14.5
	100.0		100.0		100.0

Source: *Author's own calculations using the 2001 and 2011 Census, and the 2016 CS data.*
Note 1: In the 2007 CS, those who were born outside of South Africa were not asked to report their country of birth.

In conclusion, compared to native individuals, international immigrants into South Africa were more likely to be married male individuals of about 30 years old (with the exception of long-term migrants who were relatively older, at almost 40 years), living in the urban areas of the Gauteng province, with close to 10 years of educational attainment. They enjoyed a relatively higher LFPR and lower unemployment probability than natives. Nonetheless, the employed immigrants were more likely to be involved in semi-skilled and unskilled occupations in the tertiary sector. Lastly, higher educational attainment of the employed was associated with a greater probability of involvement in high-skilled occupations.

4.3.3 Comparing underemployment and wages of immigrants and natives

This sub-section uses the 2012 QLFS data to derive empirical findings to complement the Census and CS findings discussed in Section 4.3.2, focusing on underemployment probability and wages of the employed by migration status. First, Table 24 presents the estimates of underemployment likelihood; the results indicate that of the three types of underemployment, time-based underemployment probability was the lowest for both natives (4.1%) and immigrants (3.3%).

Income-based underemployment likelihood was lower for immigrants (8.7%) compared to natives (10.4%). However, upon examining the results more deeply by detailed migration category, this probability was much higher for short-term immigrants (17.5%); however, this probability was half as low (about 8.5%) for the long-term and medium-term immigrants. The greater income-based underemployment likelihood of short-term immigrants could be attributed to the fact that a relatively higher proportion of them were involved in low-pay and unskilled occupations (elementary occupations and domestic workers), as shown in Table 19.

The probability of overeducation unemployment likelihood was greater for immigrants (11.5%) compared to natives (9.1%). However, after looking at the results by detailed migration category, this probability was once again greater for short-term immigrants (16.9%), while it was about 5% lower in the other two immigrant groups. It is possible that some short-term immigrants were unable to find jobs whose skills requirements matched the skills they possessed within a short time span, and were hence involved in work activities that require education and skills levels that were lower than what they possessed, at the time of the survey.

TABLE 24: Under-employment probability by migration status (%), 2012 QLFS

	TIME-BASED	OVER-EDUCATION	INCOME-BASED
[1] Long-term immigrants	2.9	11.1	8.4
[2] Medium-term immigrants	6.1	13.0	8.6
[3] Short-term immigrants	4.8	16.9	17.5
[4] Native return migrants	0.0	9.7	8.9
[5] Native permanent residents	4.1	9.1	10.4
[1]–[3]: Total – Immigrants	3.3	11.5	8.7
[4]–[5]: Total – Natives	4.1	9.1	10.4
All employed	4.1	9.2	10.3

Source: Author's own calculations using the 2012 QLFS data.

With regards to wage analysis, Table 25 shows the descriptive statistics on monthly earnings of the employed by migration status. On average, immigrants earned slightly more than natives (R9 076 versus R8 295), while short-term immigrants were the highest-earning group (R15 756), compared to long-term and medium-term immigrants. However, these mean statistics should be interpreted with great caution, as the last column of the table shows that the standard deviation was extremely high in groups [3] and [5]. If the median earnings are examined instead, the results suggest that both immigrants and natives earned almost the same (R3 054 versus R3 088), while long-term immigrants (R3 088) earned about R800 more than medium- and short-term immigrants (R2 205).

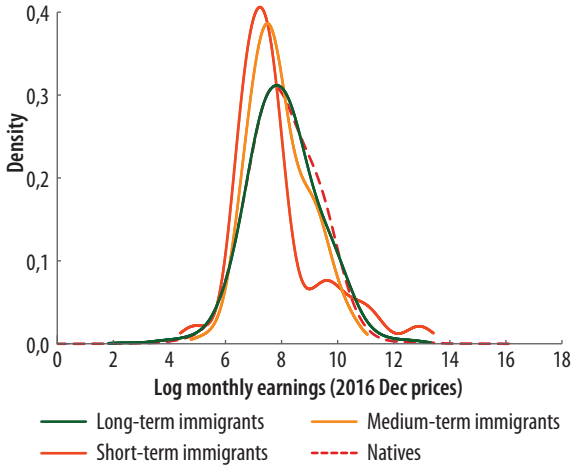
TABLE 25: Descriptive statistics on monthly earnings of employed (Rand, December 2016 prices) by migration status, 2012 QLFS

	MEAN	MEDIAN	STANDARD DEVIATION
[1] Long-term immigrants	9 352	3 088	27 580
[2] Medium-term immigrants	4 560	2 205	6 575
[3] Short-term immigrants	15 756	2 205	58 434
[4] Native return migrants	9 714	4 581	12 948
[5] Native permanent residents	8 293	3 088	53 080
[1]-[3]: Total – Immigrants	9 076	3 054	27 951
[4]-[5]: Total – Natives	8 295	3 088	53 042
All employed	8 341	3 088	51 915

Source: *Author's own calculations using the 2012 QLFS data.*

Figures 9 and 10 present the kernel density curves of log monthly earnings of the employed. The results of Figure 9 suggest that long-term immigrants earned more than short- and medium-term immigrants, as the kernel density curve of the long-term immigrant was flatter and located to the right of the curves of the other two immigrant groups. In addition, the kernel density curves of long-term immigrants and natives were highly similar and overlapped each other, especially at the bottom-end of the income distribution.

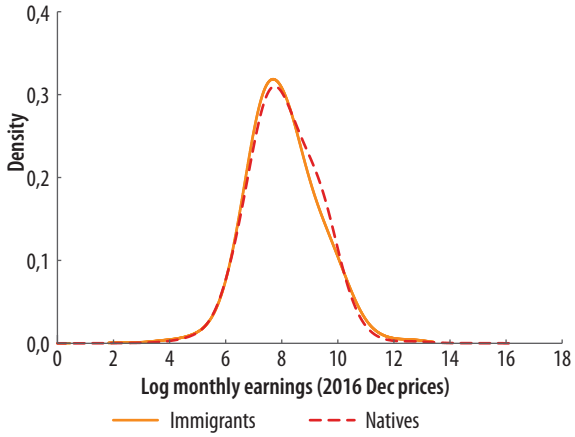
FIGURE 9: Kernel density curves of log monthly earnings of employed by migration status, 2012



Source: *Author's own calculations using the 2012 QLFS data.*

Figure 10 compares the kernel density functions of two overall groups, namely all immigrants and natives. The abovementioned overlap of the curves also occurs in this figure, and again most notably at the bottom end of the income distribution. To conclude the descriptive statistics, the results of Table 25 and Figures 9 and 10 do not strongly suggest that natives earned significantly more.

FIGURE 10: Kernel density curves of log monthly earnings of employed: immigrants versus natives, 2012



Source: Author's own calculations using the 2012 QLFS data.

Before concluding the wage analysis with econometric analysis, Tables B9 and B10 in Appendix B present the results of the probit regression on labour force participation likelihood, and the Heckprobit regression on employment likelihood (conditional on labour force participation), respectively. After controlling for differences in person- and household-level characteristics, Table B9 shows that long-term immigrants were significantly more likely than natives (reference category) to seek work in the labour market by 10.47%. On the other hand, the results from Table B10 indicate that long- and medium-term immigrants were significantly more likely than natives to find employment by 8.0% and 9.8%, respectively (the result was insignificant for short-term immigrants). These econometric findings are in line with the descriptive statistics in the tables discussed above.

Regarding the Heckman regression on log monthly earnings (conditional on participation and employment), after controlling for differences in demographic, education and work characteristics, all three groups of immigrants earned less than natives, but the results were not statistically significant, as shown in Table 26. This finding corresponds with the results in Figure 10, as well as some of the results (e.g. median earnings) in Table 25. In addition, the coefficients of the education years and education years squared suggest a non-linear, convex relationship between educational attainment and log monthly earnings; that is, the more educated the employed was, the higher the log earnings, and the extent of this increase became more rapid at greater years of educational attainment.

TABLE 26: Heckman regression on log monthly earnings (December 2016 prices) (conditional on labour force participation and employment), 2012

	COEFFICIENT	STANDARD ERROR
Age: 25–34 years	–0.1301**	0.0549
Age: 35–44 years	–0.2287***	0.0851
Age: 45–54 years	–0.3075***	0.1056
Age: 55–64 years	–0.4033***	0.1290
Race: Coloured	0.0472	0.0331
Race: Indian	0.2465***	0.0529
Race: White	0.2639***	0.0442
Gender: Female	–0.2107***	0.0200
Province: Western Cape	0.1951***	0.0319
Province: Northern Cape	0.0209	0.0474
Province: Free State	–0.0033	0.0340
Province: KwaZulu-Natal	–0.0384	0.0316
Province: North West	0.1801***	0.0369
Province: Gauteng	0.2427***	0.0291
Province: Mpumalanga	0.0913***	0.0328
Province: Limpopo	–0.0834**	0.0354
Years of education	–0.0350***	0.0108
Years of education squared	0.0070***	0.0007
Years of experience	0.0086*	0.0052
Years of experience squared	0.0000	0.0001
Occupation: Manager	1.0550***	0.0443
Occupation: Professional	1.0882***	0.0463
Occupation: Technician	0.5288***	0.0373
Occupation: Clerk	0.4481***	0.0343
Occupation: Service worker	0.1702***	0.0297
Occupation: Skilled agriculture	0.3563***	0.1102
Occupation: Craft and related trades	0.3874***	0.0345
Occupation: Operator	0.1669***	0.0358
Occupation: Domestic worker	0.1647**	0.0781
Industry: Mining	0.5312***	0.0647
Industry: Manufacturing	0.1479***	0.0482
Industry: Utilities	0.2852***	0.0956
Industry: Construction	0.0761	0.0517
Industry: Wholesale and retail	0.1607***	0.0454
Industry: Transport	0.1930***	0.0557
Industry: Finance	0.1972***	0.0489
Industry: CSP services	0.1534***	0.0553
Industry: Private household	–0.0670	0.0871
Formal sector	0.1653***	0.0282
Public sector	0.2211***	0.0372
Trade union member	0.2443***	0.0236
Log of usual weekly work hours	0.3241***	0.0269
Long-term immigrant	–0.0414	0.0512

	COEFFICIENT	STANDARD ERROR
Medium-term immigrant	–0.1179	0.0775
Short-term immigrant	–0.0144	0.1568
Lambda	–0.4534***	0.1101
Constant	5.8886***	0.1598
Sample size	19 091	
R-squared	0.4346	
Adjusted R-squared	0.4332	
F statistic	265.17	

Source: *Author's own calculations using the 2012 QLFS data.*
*Note 1: *** Significant at 1%*
*Note 2: ** Significant at 5%*
*Note 3: * Significant at 10%*

4.3.4 Examining the profile of emigrants

Table 27 shows the population composition in the top five emigration destination countries. The results indicate that foreign-born individuals accounted for as low as 13% (UK) but as high as 26% (Australia) of the full population.

TABLE 27: Country of birth of the top five emigration destination countries

	NATIVES		FOREIGN-BORN		UNSPECIFIED		ALL	
	Number (1 000s)	Share (%)	Number (1000 s)	Share (%)	Number (1 000s)	Share (%)	Number (1 000s)	Share (%)
UK 2011	48 571	86.6	7 505	13.4	0	0.0	56 076	100.0
New Zealand 2015	2 981	70.3	1 002	23.6	259	6.1	4 242	100.0
USA 2015	273 388	85.1	48 015	14.9	16	0.0	321 419	100.0
Australia 2016	15 615	66.7	6 164	26.3	1 623	6.9	23 402	100.0
Canada 2016	26 241	76.2	8 220	23.9	0	0.0	34 460	100.0

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019).*

On the other hand, Table 28 indicates in absolute terms that, despite these censuses and surveys not having taken place in the same year, the number of South African-born individuals was the highest in the UK (above 190 000), followed by Australia (more than 160 000). However, South Africans accounted for the 5th highest foreign-born population in New Zealand (7th in Australia and 8th in the UK). This explains why these South African-born people represented a very high share of African-born individuals (nearly three quarters) and slightly above 5% of all foreign-born individuals in New Zealand. In addition, South African-born people accounted for a fairly high proportion (48%) of all African-born people living in Australia.

TABLE 28: South African-born people in the top five emigration destination countries

	NUMBER	RANK	AS % OF AFRICAN-BORN PEOPLE	AS % OF ALL FOREIGN-BORN PEOPLE
UK 2011	191 023	8th	14.6	2.6
New Zealand 2015	54 276	5th	73.5	5.4
USA 2015	103 180	63rd	4.7	0.2
Australia 2016	162 450	7th	48.0	2.6
Canada 2016	48 015	39th	7.0	0.6

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019).*

Table 29 shows that, while each Census and survey captured the information on the year of immigration differently, approximately half of the South Africans migrated to the top five destination countries more than 10 years ago. This share was the greatest for South Africans who migrated to the USA (69%) and the lowest for those who left for New Zealand (46%).

TABLE 29: Year of arrival of South Africans in top five emigration destination countries (Share of total, %), 2011–2016

UK 2011	%	NEW ZEALAND 2015	%	CANADA 2016	%
Within last 1 year	4.0	Within last 1 year	6.4	Within last 5 years	12.0
Within last 2–4 years	13.1	Within last 2–4 years	17.3	Within last 6–10 years	11.0
Within last 5–7 years	15.2	Within last 5–9 years	27.9	Within last 11–15 years	11.6
Within last 8–10 years	18.4	Within last 10–19 years	36.7	Within last 16–25 years	22.4
Within last 11–20 years	26.1	More than 19 years ago	9.7	More than 25 years ago	36.0
More than 20 years ago	23.2	Unspecified	2.0	Unspecified	7.0
	100.0		100.0		100.0

USA 2015	%	AUSTRALIA 2016	%	
Within last 1 year	5.4	Within last 1 year	1.6	
Within last 2–5 years	13.3	Within last 2–10 years	41.2	
Within last 6–10 years	11.9	Within last 11–20 years	29.0	
Within last 11–20 years	30.3	More than 20 years ago	26.5	
More than 20 years ago	39.1	Unspecified	1.7	
	100.0		100.0	

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019).*

According to Table 30, females were the slightly more dominant gender group, whereas a very high proportion of South Africans lived in urban areas in the UK (84%) and Australia (94%). It is interesting that only slightly above 35% of South Africans living in the UK were Africans, but this share was more than two times bigger (77.2%) when it came to South Africans residing in Canada (keep in mind the latter falls under the 'Other Africa' result). Finally, the 25–34 and 35–44 years cohorts were more dominant in the UK (close to 50% altogether), while the 45–54 and 65+ years cohorts were most dominant in Canada (about 21% each).

TABLE 30: Personal characteristics of South African population aged at least 15 or 16 years in the top five emigration destination countries (share of total, %), 2011–2016

		UK 2011	NEW ZEALAND 2015	USA 2015	AUSTRALIA 2016	CANADA 2016
Gender	Male	48.5	48.6	49.1	49.2	49.7
	Female	51.5	51.4	50.9	50.8	50.3
		100.0	100.0	100.0	100.0	100.0
Race	African	36.2	–	–	–	77.2#
	Coloured	4.1	–	–	–	0.4#
	Asian/Indian	26.3	–	–	–	3.2#
	White	30.7	–	–	–	18.2#
	Other	2.6	–	–	–	1.1#
		100.0	–	–	–	100.0#
Area type	Urban	84.1	–	–	93.8	–
	Rural	15.9	–	–	6.2	–
		100.0	–	–	100.0	–
Age cohort	15/16 to 24 years	12.0	–	14.1	14.4	10.2
	25–34 years	32.3	–	17.2	15.4	15.0
	35–44 years	25.2	–	20.9	22.0	17.2
	45–54 years	11.7	–	19.7	21.6	20.6
	55–64 years	9.7	–	15.9	13.6	16.2
	65+ years	9.1	–	12.3	12.9	20.7
		100.0	–	100.0	100.0	100.0

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019).*
Note 1: "#" means "Other Africa" results.
Note 2: A dash ("-") means the data is unavailable.

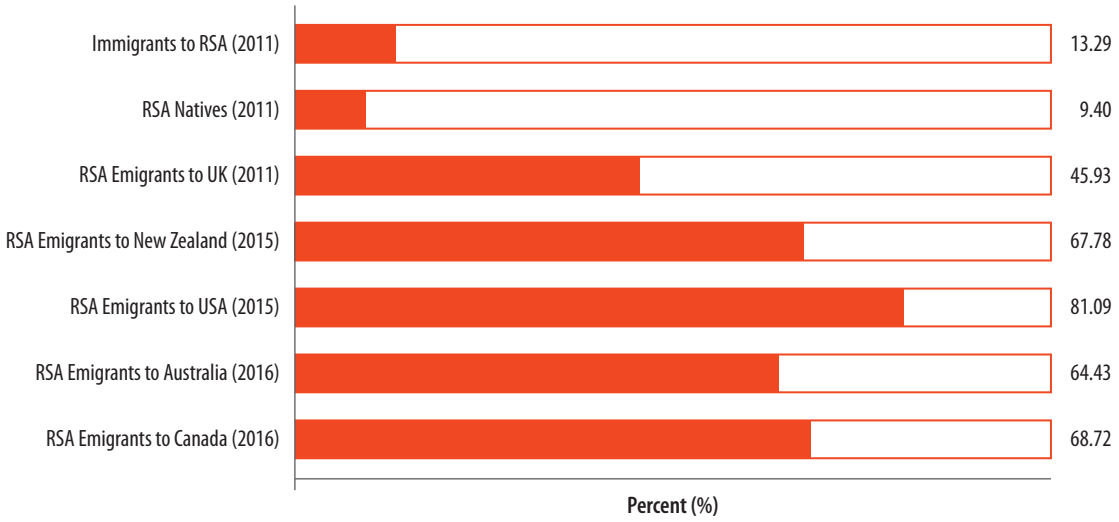
Table 31 shows that despite the difference in categorisation across the highest educational attainment in the five countries, the South African emigrants in these countries were much more educated compared to the immigrants into South Africa, as well as the natives who remained in the country (see Table 16). In fact, Figure 11 shows more clearly that the proportion of South African-born people with post-school qualifications ranged between 45.9% (UK) and 81.1% (USA), whereas the corresponding proportions in 2016 were merely 13.3% and 9.4%, to the immigrants into South Africa as well as the South African natives, respectively. These findings strongly suggest serious brain drain out of South Africa.

TABLE 31: Education characteristics of South African population aged at least 15 or 16 years in the top five emigration destination countries (share of total, %), 2011–2016

COUNTRY	EDUCATIONAL ATTAINMENT CATEGORY	%
UK 2011	None	5.5
	Grade 1 up to A level	32.5
	Apprenticeship	1.6
	Post-school certificate/diploma/degree	45.9
	Other	14.5
		100.0
New Zealand 2015	No qualification	5.9
	Level 1–3 certificate (equivalent to high school qualification)	18.7
	Level 4–5 certificate/diploma (equivalent to post-school non-degree)	38.4
	Bachelor degree and level 7 qualifications	18.6
	Post-graduate and Honours degree	4.7
	Master's or Doctorate degree	6.0
	Overseas secondary school qualification	22.1
	Not elsewhere included	4.3
		100.0
USA 2015	None	0.9
	Incomplete primary	0.4
	Complete primary	0.6
	Lower secondary	4.0
	Upper secondary	13.1
	Some college completed	27.8
	University completed	53.3
		100.0
Australia 2016	No additional non-school qualification	32.5
	Certificate Level	14.6
	Advanced Diploma and Diploma Level	14.3
	Bachelor's Degree Level	24.9
	Graduate Diploma and Graduate Certificate Level	2.6
	Postgraduate Degree Level	8.0
	Unspecified	3.1
		100.0
Canada 2016	No certificate, diploma or degree	5.5
	Secondary (high) school diploma or equivalency certificate	20.7
	Apprenticeship or trades certificate or diploma	5.0
	College, CEGEP or other non-university certificate or diploma	21.2
	University certificate or diploma below bachelor level	4.0
	University certificate, diploma or degree at bachelor level or above	43.5
		100.0

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019).*

FIGURE 11: Proportion of different groups of working-age population with post-school qualifications, 2011–2016



Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019), as well as author's calculations using the 2016 CS data.*

Table 32 shows that the LFPR of the South Africans was above 70% in all emigration destination countries (similar to how the immigrants fared in South Africa) but was above the LFPR of natives who remained in South Africa (around 55%). The South Africans enjoyed a much lower unemployment rate in the five countries (from 4.5% in the USA to 12.6% in Canada), compared to the results in Table 18.

To conclude, upon comparing Tables 18 and 32, the South African emigrants to the top five destination countries enjoyed the best labour market outcome (a high LFPR of approximately 75% and the lowest unemployment rate of around 10%), followed by immigrants into South Africa (a high LFPR of about 75% and an unemployment rate of about 20%), while the South African natives who remained in the country fared worst (a lower LFPR of less than 60% and an unemployment rate of around 30%).

TABLE 32: Labour market status of South African born aged at least 15 or 16 years in the top five emigration destination countries, 2011–2016

	UK 2011	NEW ZEALAND 2015	USA 2015	AUSTRALIA 2016	CANADA 2016
Employed	128 603	53 775	68 380	106 998	119 917#
Unemployed	11 378	4 785	3 183	7 132	17 205#
Inactive	36 972	22 044	25 868	35 540	48 803#
	176 773	80 604	97 431	149 670	185 925#
LFPR (%)	79.2	72.7	73.5	76.3	73.8
Unemployment rate (%)	8.1	8.2	4.5	6.3	12.6#
National unemployment rate (%) (including natives)	8.0	5.4	6.3	5.7	7.7

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics Zealand (2019) and United States Census Bureau (2019).*
Note 1: "#" means "Other Africa" results.

Table 33 shows that a high proportion of South Africans (between 67% and 84%) worked full time in the destination countries, whereas above 80% of them were employees. Tables 34 and 35, as well as Figure 12, show that, while the broad occupation categorisation differs across the countries (particularly in Canada), compared to the results from these tables with Table 19, a relatively higher proportion of South African emigrants in the five destination countries were involved in high-skilled occupations as managers, professionals and technicians (about 60% employed share), compared to the immigrants into South Africa (24%) and natives who remained in South Africa (25%).

TABLE 33: Nature of work of South African-born population aged at least 15 or 16 years who worked in the top five emigration destination countries (%), 2011–2016

	UK 2011	NEW ZEALAND 2015	USA 2015	AUSTRALIA 2016	CANADA 2016
Full-time	84.4	79.4	Not available	67.4	Not available
Part-time	15.6	20.6		29.0	
Unspecified	0.0	0.0		3.6	
	100.0	100.0		100.0	
Employee	83.8	Not available	82.3	Not available	90.0#
Self-employed	16.2		17.7		8.6#
Unspecified	0.0		0.0		1.4#
	100.0		100.0		100.0#

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics Zealand (2019) and United States Census Bureau (2019).*
Note 1: "#" means "Other Africa" results.

TABLE 34: Broad occupation category of South African-born population aged at least 15 or 16 years who worked in the top emigration destination countries, excluding Canada (share of all employed, %), 2011–2016

	UK 2011	NEW ZEALAND 2015	USA 2015	AUSTRALIA 2016
Managers	13.3	17.1	20.2	16.9
Professionals	30.7	31.1	28.9	34.1
Technicians	17.4	11.6	19.2	11.5
Clerks	11.3	11.6	9.9	13.8
Service and sales workers	5.0	8.4	11.8	7.3
Skilled agricultural workers	n.a.	n.a.	0.3	n.a.
Craft and related trades	6.8	n.a.	3.8	n.a.
Community and personal service workers	n.a.	8.0	n.a.	8.4
Caring, leisure and other service occupations	7.2	n.a.	n.a.	n.a.
Operators and assemblers	2.8	2.6	3.4	2.4
Elementary occupations	5.6	5.4	2.1	4.5
Other/Unspecified	0.0	4.3	0.4	1.3
	100.0	100.0	100.0	100.0

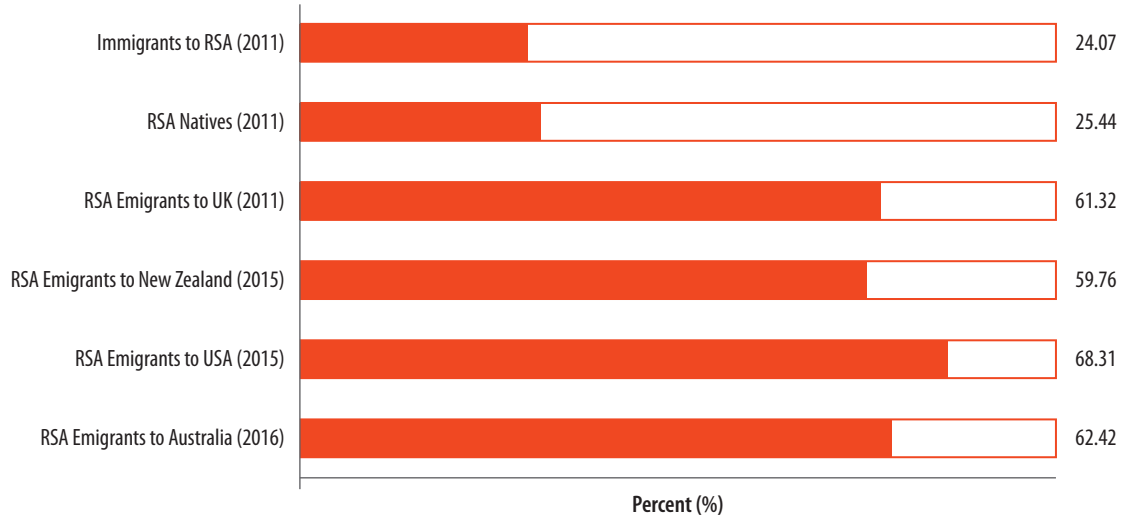
Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Zealand (2019) and United States Census Bureau (2019).*
Note 1: "n.a." means not applicable.

TABLE 35: Broad occupation category of South African–born population aged at least 16 years who worked in Canada (share of all employed, %), 2016

BROAD OCCUPATION CATEGORY	%
Managers	7.0#
Business, finance and administrative occupations	15.7#
Natural and applied sciences and related occupations	8.3#
Health occupations	13.0#
Occupations in social science, education, government service and religion	13.4#
Occupations in art, culture, recreation and sport	1.7#
Sales and service occupations	18.7#
Trades, transport and equipment operators and related occupations	8.3#
Occupations unique to primary industry	0.3#
Occupations unique to processing, manufacturing and utilities	4.7#
Not available	8.9#
	100.0#

Data source: *Statistics Canada (2019).*
Note 1: "#" means "Other Africa" results.

FIGURE 12: Proportion of different groups of employed South African-born population aged at least 15 or 16 years in high-skilled occupations in the top emigration destination countries, excluding Canada (%)



Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019), Statistics New Zealand (2019) and United States Census Bureau (2019), as well as author's calculations using the 2016 CS data.*
Note 1: It is not possible to clearly and correctly distinguish the people involved in skilled occupations in Canada, given the broad occupation categorisation (see Table 23).

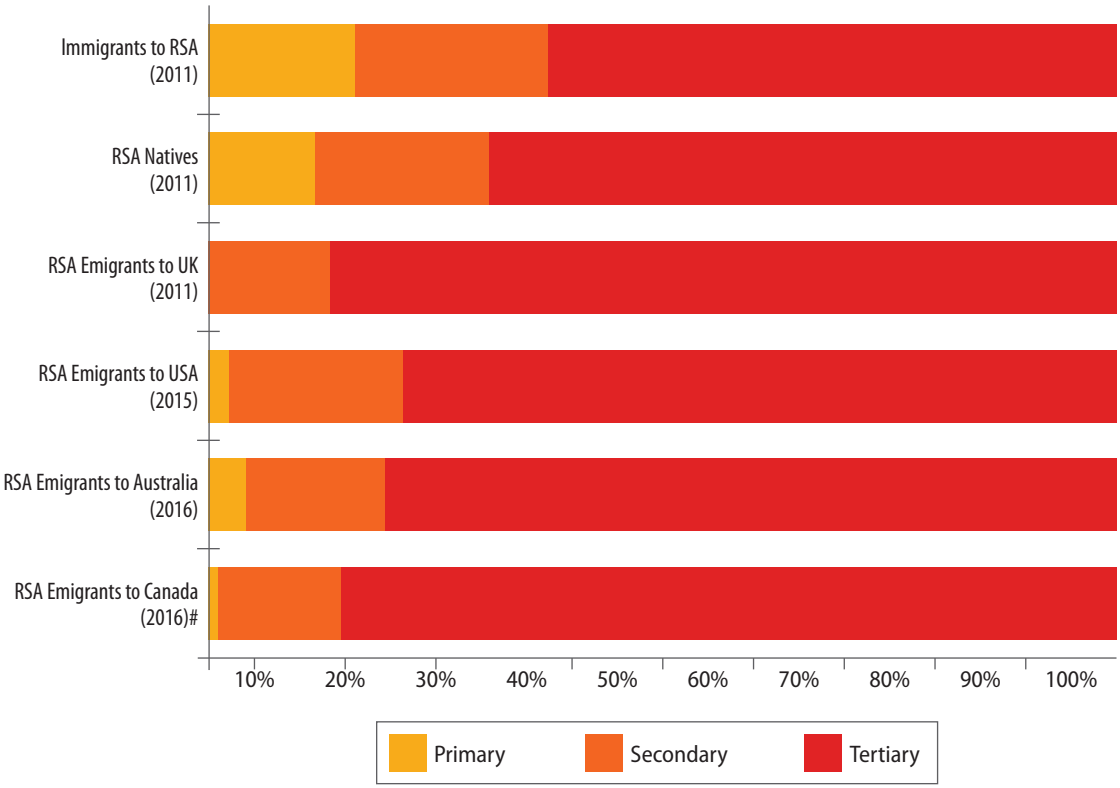
Lastly, when comparing the results in Tables 19 and 36, a higher proportion of South African-born employed people in the top emigration destination countries (above 80%) were involved in tertiary sector activities (i.e. Wholesale and Retail Trade, Transport, Finance, CSP Services and Private Households), compared to natives who stayed in South Africa (about 70%) and foreigners who immigrated into the country (just above 60%). Figure 13 also shows this evidence, but with the aid of a stacked column chart it does so more clearly.

TABLE 36: Broad industry category of South African–born population aged at least 15 or 16 years who worked in the top emigration destination countries, excluding New Zealand (share of employed, %), 2011–2016

	UK 2011	USA 2015	AUSTRALIA 2016	CANADA 2016
Agriculture	0.4	1.6	1.1	0.1
Mining		0.7	2.8	0.8
Manufacturing	6.0	8.2	6.4	9.6
Utilities	1.2	0.4	1.3	0.2
Construction	5.6	2.9	6.4	3.1
Wholesale and retail trade	16.5	14.7	15.9	11.4
Transport	10.8	4.1	4.8	5.8
Finance	26.0	31.8	22.8	17.1
CSP services	28.6	27.6	30.7	45.3
Private households	0.0	1.3	0.0	0.0
Other/Unspecified	4.9	6.7	7.8	6.6
	100.0	100.0	100.0	100.0

Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019) and United States Census Bureau (2019).*
Note 1: "#" means "Other Africa" results.
Note 2: Agriculture and mining industries are merged into one category in the UK Census 2011 data.
Note 3: Information on industry of South African–born people working in New Zealand is not available.

FIGURE 13: Proportion of employed South African–born population aged at least 15 or 16 years working in each sector in the top emigration destination countries, excluding New Zealand (%)



Data source: *Australia Bureau of Statistics (2019), Office for National Statistics (2019), Statistics Canada (2019) and United States Census Bureau (2019).*
Note 1: "#" means "Other Africa" results.
Note 2: Those with unspecified industry or sector are excluded.
Note 3: Information on sector of industry of South African–born people working in New Zealand is not available.

4.3.5 Comprehensive analysis of how South Africans fared in the USA labour market

As it is only possible to obtain the 2015 ACS data files, in this sub-section the ACS data will be thoroughly analysed to derive comprehensive empirical findings on how South Africans fared in the USA labour market at the time of this survey. These South Africans are broken down into the three migrant categories, as explained earlier. Out of the 103 180 South African migrants to the USA, 85 456 (slightly more than 80%) were part of the WAP, and they will be included in the empirical analysis below.

TABLE 37: Time of South Africans migrating to the USA

		NUMBER	SHARE (%)
[A]: Long-term migrants	More than 20 years ago	40 343	39.1
	11–20 years ago	31 224	30.3
	6–10 years ago	12 291	11.9
[B]: Medium-term migrants	2–5 years ago	13 713	13.3
[C]: Short-term migrants	Within the past year	5 609	5.4
		103 180	100.0

Source: *Author's calculations using the 2015 ACS data.*

TABLE 38: Personal and education characteristics of South African working-age population in the USA (share of total, %), 2015

		[A]: LONG-TERM MIGRANTS	[B]: MEDIUM-TERM MIGRANTS	[C]: SHORT-TERM MIGRANTS	[A]–[C]
Gender	Male	50.3	41.2	51.1	49.2
	Female	49.7	58.8	48.9	50.8
		100.0	100.0	100.0	100.0
Age cohort	16–25 years	12.7	25.2	44.4	16.1
	26–35 years	15.6	36.0	41.0	19.6
	36–45 years	24.7	24.8	8.6	23.8
	46–54 years	25.2	12.2	4.9	22.4
	56–65 years	21.8	1.7	1.1	18.1
		100.0	100.0	100.0	100.0
	Mean (years)	*43.37*	*32.95*	*28.87*	*41.25*
Marital status	Married or lived together	62.5	48.6	47.9	59.9
	Other	37.5	51.4	52.1	40.1
		100.0	100.0	100.0	100.0
Educational attainment	None to primary	1.6	1.0	0.0	1.4
	Lower secondary	2.1	13.7	15.0	4.2
	Upper secondary	11.0	13.8	9.2	11.3
	Some college completed	28.0	36.7	30.6	29.2
	University completed	57.4	34.7	45.2	53.9
		100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2015 ACS data.*

First, Table 37 shows that nearly 40% (39.1%, to be precise) of South African-born immigrants moved to the USA more than 20 years ago. In fact, long-term migrants accounted for a share of more than 80%. The results in Table 38 suggest that females were slightly more dominant (50.78%). As expected, the long-term migrants were older (43.37 years on average), and the mean age was the youngest in the short-term migrant cohort (28.87 years). Whereas an overall 53.9% of South African immigrants to the USA possessed completed university qualifications, this share was relatively higher for long-term migrants (57.4%), compared to medium- and short-term migrants.

TABLE 39: Labour market status and work characteristics of South African working-age population residing in the USA (share of total, %), 2015

		[A]: LONG-TERM MIGRANTS	[B]: MEDIUM-TERM MIGRANTS	[C]: SHORT-TERM MIGRANTS	[A]–[C]
Labour market status	Employed	78.1	69.9	65.2	76.4
	Unemployed	3.2	3.3	6.5	3.4
	Inactive	18.9	26.8	28.3	20.2
		100.0	100.0	100.0	100.0
	Labour force participation rate	81.4	73.1	71.7	79.8
	Unemployment rate	4.0	4.6	9.1	4.3
Broad occupation category	Managers	18.4	29.1	29.3	20.2
	Professionals	31.3	21.3	4.4	28.8
	Technicians	19.9	20.6	15.1	19.7
	Clerks	9.0	13.6	10.1	9.6
	Service and sales workers	11.6	8.1	16.7	11.5
	Skilled agricultural workers	0.4	0.0	0.0	0.3
	Craft and related trades	4.0	4.2	2.8	4.0
	Operators and assemblers	3.8	3.1	1.0	3.5
	Elementary occupations	1.2	0.0	21.7	2.1
	Other/Unspecified	0.6	0.0	0.0	0.5
		100.0	100.0	100.0	100.0
	% in high-skilled occupations	*69.5*	*71.0*	*48.7*	*68.6*
Broad industry category	Agriculture	0.7	0.0	21.7	1.7
	Mining	0.9	0.0	0.0	0.8
	Manufacturing	7.5	13.6	14.5	8.5
	Utilities	0.5	0.0	0.0	0.4
	Construction	3.5	0.0	2.8	3.1
	Wholesale and retail trade	14.0	16.0	24.6	14.8
	Transport	3.9	5.9	3.2	4.1
	Finance	32.7	36.7	13.1	32.2
	CSP Services	28.5	24.1	17.5	27.4
	Private households	1.3	0.0	0.0	1.1
	Other/Unspecified	6.5	3.8	2.6	6.0
		100.0	100.0	100.0	100.0
	% in tertiary sector activities	*80.4*	*82.7*	*58.3*	*79.6*

		[A]: LONG-TERM MIGRANTS	[B]: MEDIUM-TERM MIGRANTS	[C]: SHORT-TERM MIGRANTS	[A]–[C]
Employer/ Employee	Self-employed	19.4	6.7	3.5	17.2
	Employee	80.6	93.3	96.5	82.8
		100.0	100.0	100.0	100.0
Public/Private sector	Public sector	9.7	3.6	12.8	9.2
	Private sector	59.8	78.6	81.1	63.0
	Individual/Family business	19.4	6.7	3.5	17.2
	Foreign government	11.1	11.1	2.6	10.7
		100.0	100.0	100.0	100.0
Weekly work hours	1–39 hours	20.4	24.4	35.0	21.5
	40 hours	40.7	46.5	27.0	40.6
	41–44 hours	2.4	2.5	0.0	2.3
	45 hours	9.4	5.4	14.7	9.2
	46–50 hours	14.3	9.8	9.6	13.5
	More than 50 hours	13.0	11.4	13.8	12.8
		100.0	100.0	100.0	100.0
	Mean (hours)	*41.57*	*40.67*	*39.10*	*41.34*
Number of months worked in the past year	1–3 months	1.8	3.1	6.5	2.1
	4–6 months	1.6	5.2	17.6	2.8
	7–9 months	3.0	0.9	12.0	3.2
	10–11 months	6.5	9.5	0.0	6.5
	12 months	87.1	81.5	63.8	85.3
		100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2015 ACS data.*

The first number of rows of Table 39 show that long-term migrants enjoyed the highest LFPR (above 80%) and the lowest unemployment rate (4%). Nevertheless, even the short-term migrants' LFPR (71.68%) and unemployment rate (9.05%) were more favourable compared to the native population, which remained in South Africa (about 60% LFPR and 25% unemployment rate in 2015).

Table 39 also shows that for those who were employed at the time of the 2015 ACS, long- and medium-term migrants were more likely to be involved in high-skilled occupations (70%) and tertiary sector activities (slightly above 80%), compared to short-term migrants (49% and 58%, respectively). These results are not surprising; one would expect that those South Africans who settled in the destination country (the USA, in this case) for a longer period of time would accumulate sufficient work experience over the years to be involved in these higher-paying skilled and tertiary sector activities. Furthermore, Table B11 in Appendix B shows the top 10 detailed occupation and industry categories of employed South Africans (note: the categories presented in the ACS data are not exactly the same as the South African classification). One noticeable finding from this data indicates that these South Africans were actively involved in the medical and education professions. This relates to Section 4.2, in which it was mentioned that some of the occupations in great demand in South Africa come from the Health and Education sectors.

The remaining results of Table 39 indicate that about 19% of long-term migrant workers were self-employed (compared to only 6.7% and 3.5% shares in the other two migrant groups). Lastly, on average, all three groups of South African migrants worked 40–42 hours per week; however, long- and medium-term migrants were more likely to work all 12 months of the year (more than 80% share), compared to short-term migrants (close to two thirds). In other words, the majority of South Africans worked full-time in the USA, if they successfully found employment.

4.3.6 Summary

Table 40 summarises the personal, education and labour market characteristics of immigrants, natives and emigrants. The results illustrate that South African emigrants in the top five destination countries were highly educated, and enjoyed a higher LFPR and very low unemployment probability; if employed, they were highly likely to be involved in high-skilled and tertiary sector activities, which are typically associated with higher remuneration and better working conditions.

TABLE 40: Summary of the profile of three groups of people

	IMMIGRANTS INTO SOUTH AFRICA	NATIVE SOUTH AFRICANS WHO REMAINED IN THE COUNTRY	SOUTH AFRICAN EMIGRANTS
Home country	Lesotho Malawi Mozambique Swaziland Zimbabwe	South Africa	South Africa
Host country	South Africa	n.a. (Remained in South Africa)	Australia Canada New Zealand UK USA
Personal characteristics	Gender: Male (60%) Race: African Age: 40 years (mean)	Gender: Female (51%) Race: African Age: 35 years (mean)	Gender: Female (51%) Race: African Age: 35 years (mean)
Education (% with above Matric)	Above 15%	Above 10%	Above 50%
Geographical characteristics	Area type: urban Province: Gauteng (50%) and Western Cape (10%)	Area type: urban Province: KwaZulu-Natal (20%), Gauteng (20%) and Western Cape (10%)	Area type: urban Province: n.a.
Labour market status	LFPR: 75% Unemployment rate: 20%	LFPR: 55% Unemployment rate: 30%	LFPR: 75% Unemployment rate: 10%
Work activities	High-skilled occupations: 25% Tertiary sector: 60% Formal sector: 40% Employee: 80%	High-skilled occupations: 24% Tertiary sector: 70% Formal sector: 55% Employee: 90%	High-skilled occupations: 60% Tertiary sector: 80% Full-time: 75% Employee: 85%

Source: *Author's own compilations.*
Note: "n.a." means not applicable.

The majority of immigrants into South Africa originated from other African countries. They were slightly more educated but also enjoyed a higher LFPR and lower unemployment rate, compared to natives (but the unemployment rate was higher compared to the emigrants, at 20% versus 10%). Nonetheless, the employed immigrants were relatively less likely to engage in tertiary sector and formal activities, as well as to work as employees, compared to the native population.

4.4 Conclusion

This chapter used a wide range of local and international data to examine and compare the characteristics of three groups, namely 1) immigrants into South Africa; 2) natives who remained in the country; and 3) emigrants out of South Africa to the top five destination countries (Australia, Canada, New Zealand, the UK and the USA). After examining the already discontinued DM data, as well as briefly looking at the results of the UNGMD data, the chapter proceeded to present the empirical findings on the personal, education and labour market characteristics of the abovementioned three groups.

The empirical findings suggested that, out of the three groups, the emigrants fared best, as they were associated with a much higher rate of educational attainment, a higher LFPR and the lowest unemployment rate (10%). They were also the group most likely to be involved in higher-paying, full-time, high-skilled occupations and tertiary sector activities. Immigrants into South Africa also fared better than natives, as the former group was slightly more educated, and enjoyed a higher LFPR and lower unemployment probability, despite being relatively less likely to work in the formal and tertiary sectors, compared to the native employed people. Lastly, native individuals experienced the lowest LFPR (55%) but the highest unemployment rate (30%) out of the three groups under study.

In conclusion, given the fact that structural change has been taking place in the South African labour market, which has resulted in an increased demand for high-skilled and educated workers, the findings in this chapter do not suggest that immigrants possess particularly high levels of skills and education. In fact, only about 24% of immigrant workers were involved in high-skilled occupations, while 50% and 26% were involved in semi-skilled and unskilled occupations, respectively. The immigrants' share of employed by skills level was quite similar to that of all employed in South Africa (as reviewed in Section 4.2). Thus, it is possible that the immigration of foreign nationals into South Africa helps meet the demand for semi-skilled labour to the greatest extent. Importantly, there is a possibility that a skills mismatch has taken place in the South African labour market, given that the occupations in greatest demand in South Africa require high levels of skills and education, and most of the immigrants (just like the natives who remained in the country) did not possess these attributes.

The empirical findings also indicated brain drain out of the country. In light of the above findings, the loss of these people could mean that semi-skilled and unskilled employment opportunities cannot increase at a rapid enough rate to absorb the increase in net labour force entrants, in order to reduce unemployment, as highly skilled individuals played an important role in generating employment opportunities for less educated and skilled work seekers (e.g., through entrepreneurial activities).

PART 5

Conclusion and policy suggestions

5.1 Introduction

This chapter first reviews the key empirical findings of this study, before providing various recommendations, with a particular focus on the possible improvement of national labour market and immigration policies.

5.2 Review of findings

This study analysed a wide range of local and international data to conduct a comprehensive investigation on the demographic, education and labour market characteristics of three groups of people, namely 1) immigrants into South Africa; 2) natives who remained in the country; and 3) emigrants out of South Africa into the top five destination countries. The empirical findings were then used to investigate the extent of migration to and from the country, from the perspectives of skills supply and demand.

The literature review in Chapter 2 defined various migration concepts, types, theories and models, as well as South African migration policy changes, since the advent of democracy. It also provided a review of past local empirical studies. This review identified a serious research gap in the existing literature, namely the lack of studies that offered a thorough comparison of the abovementioned three groups of people. Subsequently, Chapter 3 explained the data sources, methods and limitations of the study.

Chapter 4 began by presenting the key trends in South African labour supply and demand. It found that the labour force – both employed and unemployed – has become more educated over time. The increase in employment between 1995 and 2019 was most rapid in semi-skilled occupations (especially in the service and sales work, and elementary occupation categories) and the tertiary sector (most notably Wholesale and Retail Trade, Finance, CSP Services and Private Household Industry categories). In addition, it was found that the occupations in greatest demand in South Africa require high skills and education levels, most notably in the Finance, Information Systems/Technology, Education, Engineering and Health professions.

The chapter moved on to examine the DM and UNGMD data, which found that the majority of South Africans who left the country relocated to Australia, Canada, New Zealand, the UK and the USA. On the contrary, a high proportion of immigrants into the country originated from other African countries, most notably Lesotho, Malawi, Mozambique, Swaziland and Zimbabwe.

The chapter proceeded to use the local Census and CS data from various years to examine the characteristics of immigrants and natives. The former group was divided into three sub-categories, namely long-term, medium-term and short-term immigrants. In general, the empirical findings indicated that international immigrants into South Africa were more likely to be married males aged about 30 years (keep in mind that long-term immigrants were relatively older, at about 40 years on average), who resided in the urban areas of the Gauteng province, enjoyed a higher LFPR (75%) and a lower unemployment likelihood (20%). Nonetheless, the majority of employed immigrants were involved in semi-skilled and unskilled occupations in the tertiary sector, and were relatively more likely to work in the informal sector and entrepreneurial activities, compared to the native employed.

Chapter 4 went on to analyse the 2012 QLFS data to examine underemployment and wages by migration status. Out of the three immigrant groups, short-term immigrants were associated with a significantly greater likelihood of suffering both overeducation and income-based underemployment. Both the kernel density function and Heckman regression found that immigrants earned less than natives in the South African labour market, but the result was statistically insignificant. Nevertheless, there were some indications that long-term immigrants earned relatively more than short- and medium-term immigrants.

The chapter then examined the profile of emigrants, and the findings strongly suggested a mass exodus of skilled people out of South Africa, as the migrants into the top five destination countries were generally very highly educated, had a high LFPR (75%) but a very low unemployment rate (10%), and were highly likely to engage in skilled occupations and tertiary sector activities on a full-time basis. Lastly, the 2015 ACS data was analysed thoroughly, and the results indicated that long-term South African migrants to the USA enjoyed the most favourable labour market outcomes, compared to short- and medium-term migrants. Furthermore, the population of South African migrants employed in the USA were heavily involved in high-skilled activities in the education and medical professions.

5.3 Recommendations

Given the fact that brain drain and skills mismatch has been occurring in the South African labour market, four policy recommendations are suggested below, with a focus on attracting skilled immigrants, promoting immigrants' entrepreneurial activities in the country, retaining skilled natives and improving the capture of migration data.

5.3.1 Ease the regulations to attract skilled immigrants

Since the chronic shortage of skilled labour has negative implications for economic development and growth in South Africa, attracting foreign skills remains one of the quickest ways to close the skills gap, by increasing the capacity and demand for more and higher levels of skills (Wöcke & Klein 2002: 451). For this to happen, what is needed is a strengthened inter-departmental capacity on eligibility and a points-based system for eligibility, which can be combined with a list of critical skills, so as to ensure a thorough implementation and administration of the critical skills visa (Van Lennep 2019b: 2). The DHA should regularly publish a list of scarce skills upon consultation with various government departments (e.g. Labour, Trade and Industry, and Higher Education and Training) so that immigrants with the right skills to address South Africa's skills shortage can be correctly identified (DHA 2017: 45–46). Moreover, the eligibility criteria for the scarce skills visa should be transparent, clear, flexible and facilitate economic growth (Rogerson & Rogerson 2000: 58).

The South African government should also shift its discourse from the "undesirable African immigration" designation to focus more on the skills the country can gain from immigrants from its SADC neighbourhood (Van Lennep 2019b: 2). Lastly, South Africa should have a more enabling environment to pull foreign nationals out of their home countries to migrate to South Africa; from the most recent Global Competitiveness Report (World Economic Forum 2019), South Africa was only ranked 60th in the Global Competitiveness Index, out of 140 countries. While the country stands out in its financial systems (ranked 19th in the world) and market size (35th), its ranking is dismal in information and communications technology adoptions (89th), skills (90th) and health (118th).

5.3.2 Promote the entrepreneurial activities of immigrants

The empirical findings in Chapter 4 indicate that immigrants were relatively more likely to engage in self-employed entrepreneurial activities in South Africa, compared to native individuals. Given the high unemployment rate in the country (29% in the fourth quarter of 2019; it was much higher at 48% for youth aged 18–29 years) and the slow pace of job creation in the economy, promoting small and medium businesses by foreign immigrants to help create jobs more rapidly in both the formal and informal sectors should be encouraged. In particular, Wöcke & Klein (2002: 453) suggested that tax and other incentives could be extended by including businesses launched by skilled immigrants that demonstrate a transfer of skills to the native population.

Nevertheless, Van Lennep (2019b: 2) asserted that in the 2011 Immigration Amendment Act, one eligibility criterion for a business visa requires the applicants to commit a R5 million minimum investment to South Africa, originating from the home country. This amount is five times the amount required in Singapore, for example. Hence, there is a need to revisit and revise this investment criterion, or foreign entrepreneurs will be discouraged from immigrating into South Africa.

Furthermore, South Africa might not have a lucrative environment to attract foreigners to migrate to conduct business; according to the latest study by the World Bank (2020), South Africa was ranked a mediocre 84th in the Doing Business Index, out of 190 countries. The country was ranked very low in the following sub-indices: enforcing contracts (102nd), registering property (108th), getting electricity (114th), starting a business (139th) and trading across borders (145th). These shortcomings need to be addressed by the government as soon as possible, in order for South Africa to become a more attractive destination for foreign entrepreneurs.

5.3.3 Develop and retain skilled natives

To retain skilled South Africans, the government needs to address the push factors that most likely drive them out of the country (Leipziger 2008; Reddy 2015; Christiaensen et al. 2019). Firstly, a strong investment climate; adequate opportunities for employees' further education, training and career development; competitive salaries and even political certainty and a low crime rate are required to develop and retain a pool of professional skills in the formal sector.

Skills development structures can still be further improved by ensuring better cooperation between the various government departments, Sector Education and Training Authorities (SETAs), Further Education and Training (FET) colleges and institutions of higher education (Lepheana 2012), in order to improve and retain the skills of native workers. For example, the Department of Science and Technology has prioritised the Science, Technology, Engineering and Mathematics (STEM) fields to be the key drivers for economic growth. As such, it is expected that skilled labour in these fields is in great demand. In addition, increased financial support from the government – and even the private sector – for higher education at staff, student and institutional level would also be welcomed.

There also needs to be an ongoing review of the relevance of curricula at FET colleges and universities to the needs of the economy, so as to better align the skills offered by tertiary institutions with the needs of employers, particularly given technological advancement and digital trends in the South African labour market context. For example, the DHET has convened a multi-sectoral task team to investigate what teaching, research and applications of emerging technologies are required to develop the capabilities of the higher education sector to produce graduates with skills demanded in the labour market (Chetty 2018).

Furthermore, there is a need to increase investment in research and development within the public sector, and further expand incentives in the private sector to follow suit, so as to strengthen public-private research linkages. With the offer of more lucrative jobs overseas, skilled researchers will naturally leave South Africa for better and more abundant opportunities outside the country (Waller 2006; Leipziger 2008).

To conclude, South Africa still has a long way to go, particularly with regards to the retention of skilled people. This is evidenced by fact that the country was only ranked 70th out of 132 countries in the latest edition of the Global Talent Competitiveness Index. While the country was ranked decently (54th) in terms of the Growth Talent sub-index, it was ranked a disappointing 106th in the Retain Talent sub-index. Examining the latter sub-index in greater detail, the main problematic areas are as follows (with South Africa's rankings in brackets): brain retention (78th), social protection (81st), sanitation (93rd), environmental performance (110th) and personal safety (120th) (INSEAD 2020: 237).

5.3.4 Improve migration and vacancy data capture, availability and usage

Given the fact the DM data was unfortunately discontinued after 2003, meaning that one can now only rely on the Census, CS and QLFS migration data (which is not available annually), there is a need for more regular data on migration flows, as well as better utilisation of these data, in order to strengthen migration information systems in the country (OECD 2018: 64). In addition, the DHA should release up-to-date and publicly available data on the number of visas issued per year, as well as the personal, education and labour market profiles of immigrants. It is important for such data to be available to the public, so as to better understand immigrants' contributions to the South African economy (particularly with regards to filling the skills gap and promoting entrepreneurial activities in the labour market); to more correctly revise the visa eligibility criteria of the earlier mentioned points-based system; as well as to update the list of critical skills, based on the results derived from the more regularly captured, available and analysed data (Van Lennep 2019b: 2–4).

Lastly, there is currently no official vacancy data released frequently in South Africa, yet it is important to utilise this kind of data to better identify the skills shortage areas and occupations that are in great demand in South Africa. This will assist with better formulation of skills attraction and retention strategies.

PART 6

Bibliography

Adjai, C. & Lazaridis, G. (2013). Migration, xenophobia and new racism in post-apartheid South Africa. *International Journal of Social Science Studies*. 1(1): 192–205.

Allen, C., Asmal, Z., Bhorat, H., Hill, R., Monnakgotla, J., Oosthuizen, M. & Rooney, C. (2021). *Employment creation potential, labor skills requirements, and skill gaps for young people: A South African case study*. AGI Working Paper #26. Washington DC: African Growth Initiative at Brookings.

Australian Bureau of Statistics (2019). *Census table builder*. [Online]. Available: https://auth.censusdata.abs.gov.au/webapi/jsf/login.xhtml [Accessed 30 September 2019].

Bhorat, H. & Leibbrandt, M. (2001). Chapter 4: Modelling vulnerability and low earnings in the South African labour market. In Bhorat, H., Leibbrandt, M., Maziya, M., Van der Berg, S. & Woolard, I. (Eds.), *Fighting poverty: Labour markets and inequality in South Africa*. Lansdowne: UCT Press: 74–106.

Bohlman, H. (2010). *The macroeconomic impact of skilled emigration from South Africa: a CGE analysis*. ERSA Working Paper No. 166. Claremont: Economic Research Southern Africa (ERSA).

Budlender, D. (2014). *Migration and employment in South Africa: statistical analysis of the migration module in the Quarterly Labour Force Survey, third quarter 2012*. MiWORC Report No. 5. Johannesburg: African Centre for Migration and Society, University of the Witwatersrand.

Buwembo, P. (2015). *Impact of interprovincial migration on individual labour market status: the case of Limpopo-Gauteng migration flow*. Unpublished Masters Dissertation. Stellenbosch: Stellenbosch University.

Chetty, K. (2018). *Future of work in South Africa – the road to 2030.* Pretoria: Human Sciences Research Council.

Clark, A. (1986). *Migration and colonisation in human microevolution.* Cambridge. Cambridge University Press.

Christiaensen, L., Gonzalez, A. & Robalino, D. (2019). *Migration and jobs: issues for the 21st century*. Jobs working paper issue no. 33. Washington DC: World Bank.

Crush, J. & McDonald, D.A. (2001). Introduction to special issue: evaluating South African immigration policy after apartheid. *Africa Today*. 38(3): 1–15.

De Jong, G.F. & Steinmetz, M. (2004). Chapter 11: migration intentions in South Africa and elsewhere. In Kok, P., Gelderblom, D., Oucho, J.O. & Van Zyl, J. (Eds.), *Migration in South and Southern Africa: dynamics and determinants*. Cape Town: HSRC Press: 249–265.

Department of Higher Education and Training (DHET). (2020). *The 2020 list of occupations in high demand: A technical report*. Pretoria: Department: Higher Education and Training.

European Commission (2019). *Migration glossary search*. [Online]. Available: https://ec.europa.eu/home-affairs/what-we-do/networks/european_migration_network/glossary_search_en [Access 10 September 2019].

Facchini, G., Mayda, A.M. & Mendola, M. (2013). *South-south migration and the labour market: evidence from South Africa*. IZA Discussion Paper No. 7362. Bonn: Institute of Labor Economics (IZA).

Fauvelle-Aymar, C. (2014). *Migration and employment in South Africa: an econometric analysis of domestic and international migrants*. MiWORC Report No. 6. Johannesburg: African Centre for Migration and Society, University of the Witwatersrand.

Findeis, J.L., Shields, M. & Shrestha, S. (2009). *Studies on unemployment and under-employment in rural Pennsylvania: Determining policy options for reducing unemployment and under-employment in rural Pennsylvania*. Harrisburg: Center for Rural Pennsylvania.

Goetz, S.J. (1999). *Migration and local labour markets*. Philadelphia, PA: Penn State University.

Davids, Y.D., Lefko-Everett, K. & Williams, V. (2005). *The quality of migration services delivery in South Africa*. Cape Town: Southern African Migration Programme (SAMP).

De Haas, H. (2010). Migration and development: a theoretical perspective. *International Migration Review*. 44(1); 227–264.

Department of Home Affairs (DHA) (2017). *White paper on international migration for South Africa*. Pretoria: Department of Home Affairs.

Ellis, S. & Segatti, A. (2011). Chapter 2: The role of skilled labor. In Segatti, A. & Landau, L.B. (Eds.), *Contemporary migration in South Africa: a regional development issue.* Washington DC: World Bank: 67–80.

Gibson, J. & McKenzie, D. (2011). *Eight questions about brain drain.* Policy research working paper 5668. Washington DC: World Bank.

Institut Européen d'Administration des Affaires (INSEAD). (2020). *The Global Talent Competitiveness Index 2020: global talent in the age of artificial intelligence*. Fontainebleau: INSEAD.

International Business Publications (2012). *South Africa investment and business guide: volume 1 – strategic and practical information.* Washington DC: International Business Publications.

Jacobs, W. (2014). *Migration patterns and migrant characteristics in the Western Cape through a differential urbanisation lens*. Unpublished Masters Mini-thesis. Stellenbosch: Stellenbosch University.

Kalitanyi, V. & Visser, K. (2010). African immigrants in South Africa: job takers or job creators? *South African Journal of Economic and Management Sciences*. 13(4): 376–390.

Kok, P., Gelderblom, D., Oucho, J.O. & Van Zyl, J. (2006). *Migration in South and Southern Africa: dynamics and determinants*. Cape Town: HSRC Publishers.

Kollamparambil, U. (2017). *Labour market impact of internal in-migration: a district level analysis of South Africa*. ERSA Working Paper No. 667. Claremont: Economic Research Southern Africa (ERSA).

Lepheana, N.G. (2012). *The retention of scarce skills: the case of City of Cape Town Municipality – an analysis.* Unpublished master's thesis. Stellenbosch: Stellenbosch University.

Leipziger, D.M. (2008). *"Brain drain" and the global mobility of high-skilled talent*. The World Bank PREM notes 124. Washington DC: World Bank.

Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. & Taylor, J.E. (1993). Theories of international migration; a review and appraisal. *Population and Development Review*. 19(3): 431–466.

Mattes, R. & Mniki, N. (2007). Restless minds: South African students and the brain drain. *Development Southern Africa*. 24(1): 25–46.

Mattes, R. & Richmond, W. (2000). Chapter 1: the brain drain: what do skilled South Africans think? In Crush, J. (Ed.), *Losing our minds: skills migration and the South African brain drain*. Cape Town: Idasa: 1–35.

Mbiyozo, A-N. (2018). *Aligning South Africa's migration policies with its African vision*. Policy brief 117. Pretoria: Institute for Security Studies.

McDonald, D.A., Zinyama, L., Gay, J., De Vletter, F. & Mattes, R. (2000). Guess who's coming to dinner: migration from Lesotho, Mozambique and Zimbabwe to South Africa. *International Migration Review*. 34(3): 813–841.

McGuinness, S. (2006). Over-education in the labour market. *Journal of Economic Surveys*. 20(3): 388–418.

Modi, R. (2003). Migration to democratic South Africa. *Economic and Political Weekly*. 38(18): 1759–1762.

Moses, E. & Yu, D. (2009). *Migration from the Northern Cape*. SALDRU Working Paper No. 32. Rondebosch: Southern Africa Labour and Development Research Unit (SALDRU), University of Cape Town.

Myburgh, A. (2004). Explaining emigration from South Africa. *South African Journal of Economics*. 72(1): 122–148.

Office for National Statistics (2019). *Online Census 2011 tables*. [Online]. Available: http://www.nomisweb.co.uk/census/2011/data_finder [Accessed 30 September 2019].

Oosthuizen, M. (2006). *The post-apartheid labour market: 1995–2004*. DPRU Working Paper 06/103. Rondebosch: Development Policy Research Unit (DPRU), University of Cape Town.

Oosthuizen, M. & Naidoo, P. (2004). *Internal migration to the Gauteng province*. DPRU Working Paper 04/88. Rondebosch: Development Policy Research Unit (DPRU), University of Cape Town.

Organisation for Economic Co-operation and Development (OECD). (2018). *How immigrants contribute to South Africa's economy*. Paris: OECD Publishing.

Oteiza, E. (1968). A differential push-pull approach. In W. Adams (Ed.), *The Brain Drain*. New York: The MacMillan Company: 120–234.

Peberdy, S. (2001). Imagining immigration: inclusive identities and exclusive policies in post-1994 South Africa. *Africa Today*. 48(3): 15–32.

Peters, A.C. & Sundaram, A. (2015). Country of origin and employment prospects among immigrants: an analysis of south-south and north-south migrants to South Africa. *Applied Economics Letters*. 22(17): 1415–1418.

Rasool, F., Botha, C.J. & Bisschoff, C.A. (2012). Push and pull factors in relation to skills shortages in South Africa. *Journal of Social Sciences*. 30(1): 11–20.

Reddy, S. (2015). *The development of a retention model for scarce-skilled professionals in the health sector.* Unpublished doctorate dissertation. Pretoria: University of South Africa.

Rogerson, C.M. & Rogerson, J.M. (2000). Chapter 2: dealing in scarce skills: employer responses to the brain drain. In Crush, J. (Ed.), *Losing our minds: skills migration and the South African brain drain*. Cape Town: Idasa: 36–62.

Schiel, R. (2014). *Migrant labour in contemporary South Africa*. Unpublished Masters Thesis. Rondebosch: University of Cape Town.

Segatti, A. (2011). Chapter 1: Reforming South African immigration policy in the post-apartheid period (1990–2010). In Segatti, A. & Landau, L.B. (Eds.), *Contemporary migration in South Africa: a regional development issue.* Washington DC: World Bank: 31–66.

Sinclair, M.R. (1999). "I know a place that is softer than this …" – emerging migrant communities in South Africa. *International Migration*. 37(2): 465–483.

South African Reserve Bank (2021). *Online data download portal*. [Online]. Available: https://www.resbank.co.za/en/home/publications/quarterly-bulletin1/download-information-from-xlsx-data-files [Accessed 11 January 2021].

Statistics Canada (2019). *Census 2016 online data tables*. [Online]. Available: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/index-eng.cfm [Accessed 1 October 2019].

Statistics New Zealand (2019). *NZ stats table viewer*. [Online]. Available: https://nzdotstat.stats.govt.nz/wbos/Index.aspx [Accessed 30 September 2019].

Statistics South Africa (2004). *Documented migration*. Pretoria: Statistics South Africa.

Statistics South Africa (2008). *Quarterly Labour Force Survey: Metadata*. Pretoria: Statistics South Africa.

Statistics South Africa (2019a). *Labour market outcomes of migrant populations in South Africa, 2012 and 2017*. Pretoria: Statistics South Africa.

Statistics South Africa (2019b). *National poverty lines*. Pretoria: Statistics South Africa.

Statistics South Africa (2020). *Gross domestic product: Fourth quarter 2019*. Statistical release P0441. Pretoria: Statistics South Africa.

Statistics South Africa (2021). *Online data download portal*. [Online]. Available: http://nesstar.statssa.gov.za:8282/webview/ [Accessed 3 January 2021].

Theodore, N., Pretorius, A., Blaauw, D. & Schenck, C. (2017). Informality and the context of reception in South Africa's new immigrant destinations. *Population, Space and Place*. 24(1): 1–10.

United Nations (2019). *International migration stock: the 2017 revision*. [Online]. Available: https://www.un.org/development/desa/pd/content/international-migrant-stock [Accessed 20 August 2019].

United States Census Bureau (2019). *American Community Survey: online tables and tools*. [Online]. Available: https://www.census.gov/acs/www/data/data-tables-and-tools/ [Accessed 30 September 2019].

Van der Berg, S., Burger, R., Leibbrandt, M. & Mlatsheni, C. (2002). *Migration and the changing rural-urban interface in South Africa: what can we learn from census and survey data?* Paper presented at the Workshop on Migration and Poverty, Stellenbosch, 4 March.

Van Lennep, T. (2019a). *Migration II: The South African migration policy landscape*. [Online]. Available: https://hsf.org.za/publications/hsf-briefs/the-south-african-migration-policy-landscape [Accessed: 31 March 2020].

Van Lennep, T. (2019b). *Migration V: Policy recommendations for the South African migration regime*. [Online]. Available: https://hsf.org.za/publications/hsf-briefs/policy-recommendations-for-the-south-african-migration-regime [Accessed: 31 March 2020].

Van Rooyen, J. (2000). *The New Great Trek: the story of South Africa's white exodus*. Pretoria: UNISA Press.

Vermaark, C. & Muller, C. (2019). Do immigrants have better labour market outcomes than South Africans? *Development Southern Africa*. 36(5): 678–698.

Waller, L. (2006). *Migration of skills in South Africa: patterns, trends and challenges*. Migration policy brief no. 20. Cape Town: Southern African Migration Project.

Weeks, J.R. (1996). *Population: an introduction to concepts and issues*. 10th edition. New York: Wadsworth Publishing.

Wentzel, M., Viljoen, J. & Kok, P. (2004). Chapter 8: contemporary South African migration patterns and intentions. In Kok, P., Gelderblom, D., Oucho, J.O. & Van Zyl, J. (Eds.), *Migration in South and Southern Africa: dynamics and determinants*. Cape Town: HSRC Press: 97–117.

Wöcke, A. & Klein, S. (2002). The implications of South Africa's skills migration policy for country competitiveness. *Development Southern Africa*. 19(4): 441–454.

World Bank (2020). *Doing business 2020: comparing business regulation in 190 economies*. Washington DC: World Bank.

World Economic Forum (2019). *The global competitiveness report 2019*. Geneva: World Economic Forum.

Zuberi, T. & Sibanda, A. (2004). How do migrants fare in a post-apartheid South African labour market? *International Migration Review*. 38(4): 1462–1491.

Appendix A: Migration theories and models

Initiation of international migration

Push-pull model

Many native individuals left the country due to various economic and non-economic push and pull factors. Push factors are those aspects in the country of origin that produce emigration, while pull factors stand for those aspects in the country of destination that induce migration (Oteiza 1968: 126).

Spatial equilibrium model

Workers move in geographical space to equalise livelihoods over time, with migration decisions being affected by three key factors: 1) job opportunities in the area of origin; 2) expectations about job opportunities in the area of destination; and 3) costs associated with moving and realising the prospects in the destination (Christiaensen et al. 2019). Combining the three key factors, if the expected gains in labour income net of migration costs are positive, people will decide to migrate until a spatial equilibrium is reached.

Neoclassical model

This model is highly similar to the spatial equilibrium model, as an individual is a rational actor who conducts cost-benefit analysis and decides to move if the expected net return of migration is positive. In addition, geographical wage differentials induce migration from low-wage countries to high-wage countries, and migration ceases once wage levels at the countries of origin and destination converge (Massey et al. 1993; De Haas 2010).

Dual labour market theory

Migration is induced by an intrinsic demand for labour in the industrial society or primary sector, which is characterised by capital-intensive production methods, higher remuneration and better working conditions. Hence, workers from the labour-intensive secondary sector, characterised by lower remuneration and poor working conditions, are induced to migrate to the primary sector (Massey et al. 1993; Moses & Yu 2009).

World systems theory

Migration takes place naturally due to disruptions and dislocations in the process of capitalist development. Firms from capitalist, core and developed areas enter peripheral, developing areas to take advantage of low-wage labour by establishing assembly plants there. Nonetheless, as new factory work is associated with demanding tasks and poor remuneration, factory workers only work for a few years before leaving to seek new and better opportunities elsewhere (Massey et al. 1993).

New household economics of migration

Household members make migration decisions collectively, not only by maximising expected income but also by minimising risks. The latter takes place by assigning some members to remain in the local labour markets while sending other members to work in other regions with different wages and employment conditions, compared to the sending regions (Massey et al. 1993; De Haas 2010).

Perpetuation of international migration

Network theory

As migrants forge relationships with formal, current and potential migrants and non-migrants in both sending and receiving countries, these network connections constitute some kind of social capital that people can draw on to gain access to foreign employment. The network also enables migrants to assist potential migrants to decide on moving and adapting to the area of destination (Massey et al. 1993; Weeks 1996).

Institutional theory

A large number of individuals want to migrate to a capital-rich country, which only issues a limited number of immigrant visas. This imbalance leads to the development of a black market in migration, and this underground market creates conditions conducive to victimisation and exploitation. Hence, voluntary humanitarian organisations are developed to provide migration services and enforce the rights and treatment of migrants. As a result, migration flow becomes more institutionalised and less dependent on factors which originally induced it (Massey et al. 1993).

Cumulative causation theory

This theory assumes that each migration act affects the social environment in both home and host regions, typically in ways that induce additional movements. In particular, the success of migrants' first moves encourages more people in the sending area(s) to move, thereby contributing to increases in migration volume. Massey et al. (1993: 451–454) argues that six socio-economic factors are potentially and cumulatively affected by migration, namely income distribution, land distribution, human capital distribution, organisation of agriculture, social meaning of work and culture.

Migration systems theory

This theory argues that a migration system consists of a core, receiving country and a number of specific sending countries. This system might be stable but also evolves over time in cognisance of international economic and political trends. In addition, the countries need not be physically close as political and economic links between countries drive migration flows (Massey et al. 1993).

Appendix B: Supplementary tables

TABLE B1: Number of immigrants and "real" number of emigrants, 1940–2003

Year		METHOD [I]		METHOD [II]		METHOD [III]	
	[A]	[B]	[A]–[B]	[C]	[A]–[C]	[D]	[A]–[D]
	Immigrants	Emigrants	Difference	Emigrants × 2	Difference	Emigrants × 3	Difference
1940	3 526	2 723	803	5 446	–1 920	8 169	–4 643
1941	1 964	2 428	–464	4 856	–2 892	7 284	–5 320
1942	1 991	2 021	–30	4 042	–2 051	6 063	–4 072
1943	994	2 167	–1 173	4 334	–3 340	6 501	–5 507
1944	1 049	2 459	–1 410	4 918	–3 869	7 377	–6 328
1945	2 949	4 881	–1 932	9 762	–6 813	14 643	–11 694
1946	12 030	9 095	2 935	18 190	–6 160	27 285	–15 255
1947	29 827	8 040	21 787	16 080	13 747	24 120	5 707
1948	36 734	7 623	29 111	15 246	21 488	22 869	13 865
1949	15 576	9 403	6 173	18 806	–3 230	28 209	–12 633
1950	13 663	14 956	–1 293	29 912	–16 249	44 868	–31 205
1951	15 890	15 546	344	31 092	–15 202	46 638	–30 748
1952	18 975	9 877	9 098	19 754	–779	29 631	–10 656
1953	17 267	10 324	6 943	20 648	–3 381	30 972	–13 705
1954	16 719	11 461	5 258	22 922	–6 203	34 383	–17 664
1955	16 684	12 636	4 048	25 272	–8 588	37 908	–21 224
1956	15 238	13 031	2 207	26 062	–10 824	39 093	–23 855
1957	14 631	11 034	3 597	22 068	–7 437	33 102	–18 471
1958	14 701	8 954	5 747	17 908	–3 207	26 862	–12 161
1959	12 598	9 502	3 096	19 004	–6 406	28 506	–15 908
1960	9 805	12 705	–2 900	25 410	–15 605	38 115	–28 310
1961	16 373	15 046	1 327	30 092	–13 719	45 138	–28 765
1962	20 972	9 162	11 810	18 324	2 648	27 486	–6 514
1963	38 013	7 272	30 741	14 544	23 469	21 816	16 197
1964	40 896	8 293	32 603	16 586	24 310	24 879	16 017
1965	38 337	9 479	28 858	18 958	19 379	28 437	9 900
1966	48 051	10 289	37 762	20 578	27 473	30 867	17 184
1967	38 937	11 289	27 648	22 578	16 359	33 867	5 070
1968	40 548	10 945	29 603	21 890	18 658	32 835	7 713
1969	41 446	9 313	32 133	18 626	22 820	27 939	13 507
1970	41 523	9 278	32 245	18 556	22 967	27 834	13 689
1971	35 845	8 407	27 438	16 814	19 031	25 221	10 624

Year		METHOD [I]		METHOD [II]		METHOD [III]	
	[A]	[B]	[A]–[B]	[C]	[A]–[C]	[D]	[A]–[D]
	Immigrants	Emigrants	Difference	Emigrants × 2	Difference	Emigrants × 3	Difference
1972	32 776	7 884	24 892	15 768	17 008	23 652	9 124
1973	24 016	6 401	17 615	12 802	11 214	19 203	4 813
1974	35 910	7 428	28 482	14 856	21 054	22 284	13 626
1975	50 464	10 255	40 209	20 510	29 954	30 765	19 699
1976	46 239	15 641	30 598	31 282	14 957	46 923	–684
1977	24 822	26 000	–1 178	52 000	–27 178	78 000	–53 178
1978	18 669	20 686	–2 017	41 372	–22 703	62 058	–43 389
1979	18 680	15 694	2 986	31 388	–12 708	47 082	–28 402
1980	29 365	11 363	18 002	22 726	6 639	34 089	–4 724
1981	41 542	8 791	32 751	17 582	23 960	26 373	15 169
1982	45 784	6 832	38 952	13 664	32 120	20 496	25 288
1983	30 879	8 126	22 753	16 252	14 627	24 378	6 501
1984	28 461	9 562	18 899	19 124	9 337	28 686	–225
1985	17 437	11 020	6 417	22 040	–4 603	33 060	–15 623
1986	6 994	13 711	–6 717	27 422	–20 428	41 133	–34 139
1987	8 009	10 823	–2 814	21 646	–13 637	32 469	–24 460
1988	10 340	7 585	2 755	15 170	–4 830	22 755	–12 415
1989	11 110	4 734	6 376	9 468	1 642	14 202	–3 092
1990	14 661	4 694	9 967	9 388	5 273	14 082	579
1991	12 245	4 153	8 092	8 306	3 939	12 459	–214
1992	9 262	4 181	5 081	8 362	900	12 543	–3 281
1993	9 996	8 152	1 844	16 304	–6 308	24 456	–14 460
1994	6 398	10 235	–3 837	20 470	–14 072	30 705	–24 307
1995	5 064	8 725	–3 661	17 450	–12 386	26 175	–21 111
1996	5 351	10 347	–4 996	20 694	–15 343	31 041	–25 690
1997	4 188	8 943	–4 755	17 886	–13 698	26 829	–22 641
1998	4 371	8 276	–3 905	16 552	–12 181	24 828	–20 457
1999	3 669	8 487	–4 818	16 974	–13 305	25 461	–21 792
2000	3 028	10 280	–7 252	20 560	–17 532	30 840	–27 812
2001	4 836	12 114	–7 278	24 228	–19 392	36 342	–31 506
2002	6 545	10 890	–4 345	21 780	–15 235	32 670	–26 125
2003	5 537	10 040	–4 503	20 080	–14 543	30 120	–24 583
Total	**1 250 400**	**611 692**	**638 708**	**1 223 384**	**27 016**	**1 835 076**	**–584 676**

Data source: Statistics South Africa (2004).
Note 1: Method [I]: Difference = Immigrants – Emigrants
Note 2: Method [II]: Difference = Immigrants – Emigrants × 2
Note 3: Method [III]: Difference = Immigrants – Emigrants × 3

TABLE B2: Top ten countries of origin of immigrants and destinations of mid-year migrant stock (%), 1990–2000

COUNTRY	1990	COUNTRY	1995	COUNTRY	2000
Immigrants (Each country's share of total, %)					
Mozambique	29.8	Mozambique	31.9	Mozambique	23.4
Lesotho	16.1	Lesotho	13.0	Zimbabwe	12.7
United Kingdom	10.1	United Kingdom	10.5	United Kingdom	12.4
Zimbabwe	5.3	Zimbabwe	8.2	Lesotho	11.2
Swaziland	2.9	Swaziland	2.9	Namibia	4.4
Germany	2.9	Germany	2.5	Swaziland	3.1
Portugal	1.6	Namibia	2.4	Malawi	2.6
Botswana	1.6	Malawi	1.7	Germany	2.3
Netherlands	1.5	Portugal	1.7	Zambia	2.3
Nigeria	1.4	Botswana	1.6	Portugal	1.9
Other	26.8	Other	23.6	Other	23.8
	100.0		100.0		100.0
Emigrants (Each country's share of total, %)					
United Kingdom	20.4	United Kingdom	25.1	United Kingdom	26.7
Australia	17.9	Australia	15.2	Australia	15.7
USA	10.6	USA	12.4	USA	12.7
Mozambique	8.8	Canada	7.5	Canada	7.2
Canada	7.2	Mozambique	7.3	Mozambique	5.3
Swaziland	6.4	Zimbabwe	3.8	New Zealand	5.0
Namibia	3.8	Namibia	3.0	Zimbabwe	3.3
Zimbabwe	3.5	New Zealand	2.7	Botswana	2.7
Israel	2.6	Israel	2.4	Namibia	2.2
Netherlands	2.0	Botswana	2.3	Portugal	2.2
Other	16.8	Other	18.3	Other	17.1
	100.0		100.0		100.0

Data source: *United Nations (2019).*

TABLE B3: Personal characteristics of immigrants and natives (share of total, %), 2007 versus 2011

		2007 CS						2011 CENSUS					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]	[1]	[2]	[3]	[1]–[3]	[4]–[5]	[1]–[6]
Gender	Male	61.5	61.6	61.6	61.5	47.6	48.1	62.8	62.6	61.0	62.3	47.7	48.5
	Female	38.5	38.4	38.4	38.5	52.4	51.9	37.2	37.4	39.0	37.7	52.3	51.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Race	African	62.6	73.9	74.6	64.4	77.6	77.1	66.2	84.0	79.2	74.5	78.4	78.2
	Coloured	1.5	1.3	0.6	1.4	9.7	9.4	1.1	0.6	0.6	0.8	9.5	9.0
	Indian	3.8	7.0	8.7	4.4	2.9	3.0	4.1	4.3	4.6	4.3	2.7	2.8
	White	32.1	17.8	16.1	29.8	9.8	10.6	23.8	3.2	6.7	13.7	9.1	9.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	4.7	8.0	8.9	6.7	0.3	0.6
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age cohort	15–24 years	12.2	29.1	33.1	15.1	32.5	31.9	9.5	28.0	36.7	21.6	30.9	30.4
	25–34 years	27.2	38.2	42.0	29.2	25.1	25.3	33.3	50.5	41.0	40.2	26.0	26.8
	35–44 years	25.1	19.0	14.3	23.8	19.5	19.7	26.5	16.2	14.2	20.5	18.9	19.0
	45–54 years	20.9	8.3	6.6	18.8	14.1	14.3	18.1	4.0	5.5	11.0	14.6	14.4
	55–64 years	14.6	5.3	4.1	13.1	8.7	8.9	12.6	1.3	2.6	6.9	9.6	9.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Mean (years)	*39.38*	*31.75*	*30.23*	*38.08*	*33.44*	*33.60*	*38.63*	*29.51*	*29.19*	*33.67*	*33.90*	*33.89*
Marital status	Married or lived together	68.5	59.1	45.5	66.0	38.6	39.5	68.2	56.5	51.2	60.6	40.1	41.3
	Other	31.5	40.9	54.5	34.0	61.4	60.5	31.8	43.5	48.8	39.4	59.9	58.7
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2007 CS and 2011 Census data.*

TABLE B4: Education, geographical and labour market characteristics of immigrants and natives (share of total, %), 2007 versus 2011

		CS 2007						CENSUS 2011					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	All	[1]	[2]	[3]	[1]–[3]	[4]–[5]	All
Educational attainment	None	9.4	7.3	7.5	9.1	6.3	6.4	8.5	5.0	7.5	7.3	5.9	6.0
	Incomplete primary	13.8	10.5	12.2	13.4	13.2	13.2	10.6	7.0	9.7	9.3	10.4	10.4
	Incomplete secondary	38.5	45.2	45.0	39.5	54.4	53.8	36.8	47.8	48.1	42.8	45.3	45.2
	Matric	18.2	17.6	16.5	18.1	17.6	17.6	23.1	25.2	21.9	23.4	27.9	27.6
	Matric + Certificate/ Diploma	6.5	4.5	4.0	6.2	3.8	3.9	5.4	4.4	3.3	4.6	4.5	4.5
	Degree	12.5	14.1	13.8	12.7	3.7	4.0	14.2	9.3	8.3	11.3	5.8	6.1
	Other/Unspecified	1.1	0.7	1.0	1.0	1.1	1.1	1.4	1.3	1.2	1.3	0.3	0.3
		100.0	100.0	100.0	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Mean (years)	*9.40*	*9.80*	*9.61*	*9.45*	*9.05*	*9.07*	*9.75*	*10.15*	*9.46*	*9.79*	*9.58*	*9.59*
Area type	Urban	–	–	–	–	–	–	85.1	84.1	79.7	83.5	65.4	66.4
	Rural	–	–	–	–	–	–	14.9	15.9	20.3	16.5	34.6	33.6
		–	–	–	–	–	–	100.0	100.0	100.0	100.0	100.0	100.0
Province	Western Cape	12.0	11.8	13.6	12.1	11.6	11.6	10.1	12.2	11.2	11.0	11.7	11.6
	Eastern Cape	2.7	4.7	4.1	3.0	12.5	12.1	2.8	3.7	3.8	3.3	12.1	11.6
	Northern Cape	1.6	1.2	0.6	1.5	2.2	2.2	1.0	0.7	1.0	0.9	2.3	2.2
	Free State	6.8	7.3	7.2	6.8	5.9	5.9	3.4	2.8	3.2	3.2	5.3	5.2
	KwaZulu-Natal	7.1	5.8	8.0	7.1	21.1	20.6	7.1	6.7	7.7	7.1	20.0	19.4
	North West	10.2	9.6	9.8	10.1	6.7	6.8	7.1	6.7	8.4	7.3	6.7	6.7
	Gauteng	46.5	46.3	40.1	46.1	23.0	23.8	55.0	52.8	47.6	52.5	24.6	26.1
	Mpumalanga	8.4	7.6	6.5	8.2	7.3	7.4	7.4	5.8	6.9	6.8	7.8	7.7
	Limpopo	4.6	5.9	9.2	5.0	9.8	9.7	6.1	8.5	10.2	7.8	9.7	9.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Labour market status	Employed	68.8	63.2	58.6	67.6	40.5	41.5	66.2	65.4	58.4	64.0	38.3	39.7
	Unemployed	11.4	13.0	16.5	11.9	20.7	20.3	12.1	14.0	15.6	13.5	17.0	16.8
	Inactive	19.8	23.9	24.9	20.6	38.9	38.2	21.6	20.7	26.0	22.4	44.8	43.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Author's calculations using the 2007 CS and 2011 Census data.*
Note 1: A dash ("-") means variable not available.

TABLE B5: Work characteristics of immigrants and natives (if employed) (share of total, %), 2007 CS

		2007 CS					
		[1]	[2]	[3]	[1]–[3]	[4]–[5]	All
Broad occupation category	Managers	14.7	14.1	9.1	14.3	8.4	8.8
	Professionals	11.0	8.4	9.0	10.7	10.8	10.8
	Technicians	6.9	4.3	4.9	6.6	5.8	5.8
	Clerks	4.6	4.7	3.8	4.6	7.7	7.5
	Service and sales workers	7.4	8.8	8.7	7.6	9.3	9.2
	Skilled agricultural workers	2.7	5.0	4.1	2.9	3.8	3.7
	Craft and related trades	15.3	14.2	18.7	15.5	11.3	11.5
	Operators and assemblers	9.9	7.8	5.5	9.4	7.8	7.8
	Elementary occupations	12.3	18.0	23.9	13.5	18.3	18.0
	Domestic workers Other/Unspecified	15.3	14.9	12.4	15.1	17.0	16.9
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Broad industry category	Agriculture	4.7	7.5	9.8	5.3	6.8	6.7
	Mining	15.0	11.3	7.2	14.2	3.0	3.6
	Manufacturing	12.9	11.1	14.4	12.8	14.2	14.1
	Utilities	0.6	0.0	1.3	0.6	0.8	0.8
	Construction	7.7	9.5	8.0	7.9	5.8	5.9
	Wholesale and retail trade	13.8	17.8	18.2	14.4	13.6	13.6
	Transport	3.3	2.5	1.4	3.1	3.9	3.9
	Finance	11.2	10.3	9.9	11.0	10.8	10.8
	CSP services	11.6	9.6	8.6	11.2	16.0	15.8
	Private households Other/Unspecified	19.3	20.5	21.3	19.5	25.1	24.8
		100.0	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: *Author's calculations using the 2007 CS data.*
Note 1: In the 2007 CS, it is not possible to distinguish domestic workers and private household workers from the other/unspecified.

TABLE B6: Top ten detailed occupation categories of immigrants and natives (if employed) (share of employed, %), 2011 Census

[1]–[3]: TOTAL – IMMIGRANTS		[4]–[5]: TOTAL – NATIVES	
Domestic helper	10.2	Domestic helper	9.8
Shop salesperson	7.0	Shop salesperson	6.5
Farmhands and labourer	5.4	Helpers and cleaners in offices	5.3
Protective services workers n.e.c.	4.5	Other office clerks n.e.c.	5.1
Helpers and cleaners in offices	3.7	Protective services workers n.e.c.	4.4
Other office clerks n.e.c.	3.4	Farmhands and labourer	3.9
Finance and administration managers	3.0	Primary education teaching associate professionals	2.9
Hand packers	2.3	Finance and administration managers	2.7
Building frame and related workers n.e.c.	2.3	Nursing associate professionals	2.7
Cashiers and ticket clerks	2.0	Hand packers	2.6

Source: Author's calculations using the 2011 Census data.

TABLE B7: Top ten detailed industry categories of immigrants and natives (if employed) (share of employed, %), 2011 Census

[1]–[3]: TOTAL – IMMIGRANTS		[4]–[5]: TOTAL – NATIVES	
Private households with employers	12.5	Private households with employers	11.3
Building of complete constructions	8.8	Education	6.7
Business activities n.e.c.	6.6	Business activities n.e.c.	6.5
Non-specialised retail trade in stores	4.9	Building of complete constructions	6.3
Education	4.2	Human health activities	4.9
Restaurants, bars and canteens	3.4	Non-specialised retail trade in stores	3.9
Human health activities	3.3	Other land transport	3.0
Retail trade not in stores	3.2	Other retail trade in new goods in specialised stores	2.8
Other retail trade in new goods in specialised stores	2.9	Central government activities	2.7
Other land transport	2.5	Restaurants, bars and canteens	2.3

Source: Author's calculations using the 2011 Census data.

TABLE B8: Top ten countries of origin of each of the three groups of immigrants using the Census and CS data, 2001–2016

2001 CENSUS		2011 CENSUS		2016 CS	
[1]: Long-term immigrants (Each country's share of total, %)					
Mozambique	28.0	Mozambique	24.0	Zimbabwe	35.7
Zimbabwe	15.2	Zimbabwe	22.6	Mozambique	21.8
United Kingdom	13.4	Lesotho	8.8	Lesotho	10.8
Lesotho	8.2	United Kingdom	4.7	Malawi	3.9
Namibia	5.2	Namibia	3.2	Namibia	2.5
Zambia	2.8	Malawi	2.9	Swaziland	2.4
Swaziland	2.8	Zambia	2.1	United Kingdom	2.4
Portugal	2.4	Swaziland	1.9	DRC	2.3
Malawi	2.2	India	1.6	Nigeria	2.1
Germany	2.1	Portugal	1.2	India	1.6
Other	17.7	Other	27.0	Other	14.7
	100.0		100.0		100.0
[2]: Medium-term immigrants (Each country's share of total, %)					
Mozambique	26.4	Zimbabwe	47.3	Zimbabwe	42.8
Zimbabwe	12.8	Mozambique	12.8	Mozambique	12.7
Lesotho	12.4	Lesotho	6.1	Malawi	10.0
United Kingdom	5.1	Malawi	5.3	Lesotho	8.9
Malawi	4.7	Ethiopia	2.1	Ethiopia	3.5
Angola	3.6	Bangladesh	1.7	Nigeria	2.8
Swaziland	2.4	Somalia	1.6	DRC	2.2
Congo	2.3	Congo	1.6	Swaziland	2.2
India	2.3	Nigeria	1.5	India	1.8
Nigeria	2.2	DRC	1.5	Bangladesh	1.6
Other	25.8	Other	18.5	Other	11.5
	100.0		100.0		100.0
[3]: Short-term immigrants (Each country's share of total, %)					
Mozambique	21.3	Zimbabwe	32.7	Zimbabwe	43.9
Lesotho	16.0	Mozambique	15.6	Mozambique	16.1
Zimbabwe	15.0	Lesotho	7.7	Lesotho	12.2
Malawi	4.6	Malawi	6.2	Malawi	7.9
United Kingdom	4.5	Ethiopia	2.3	Swaziland	3.0
Swaziland	2.9	Somalia	2.0	Ethiopia	1.8
Botswana	2.8	Swaziland	1.7	Nigeria	1.5
Germany	2.6	Bangladesh	1.5	India	1.0
Nigeria	2.6	Nigeria	1.5	United Kingdom	0.9
Congo	2.3	India	1.2	DRC	0.7
Other	25.6	Other	27.6	Other	11.1
	100.0		100.0		100.0

Source: *Author's own calculations using the 2001 and 2011 Census and 2016 CS data.*
Note 1: In the 2007 CS, those who were born outside of South Africa were not asked to report their country of birth.

TABLE B9: Probit regression on labour force participation likelihood, 2012

	MARGINAL EFFECT	STANDARD ERROR
Age: 25–34 years	0.4065***	0.0057
Age: 35–44 years	0.4278***	0.0056
Age: 45–54 years	0.3724***	0.0061
Age: 55–64 years	0.2240***	0.0092
Race: Coloured	0.0252**	0.0110
Race: Indian	–0.0650***	0.0217
Race: White	–0.0878***	0.0141
Gender: Female	–0.1771***	0.0058
Province: Western Cape	0.1633***	0.0109
Province: Northern Cape	0.1137***	0.0125
Province: Free State	0.0854***	0.0115
Province: KwaZulu-Natal	0.0049	0.0105
Province: North West	–0.0185	0.0130
Province: Gauteng	0.1481***	0.0100
Province: Mpumalanga	0.1068***	0.0111
Province: Limpopo	–0.0327***	0.0113
Years of education	–0.0202***	0.0034
Years of education squared	0.0038***	0.0002
Married	0.0350***	0.0071
Number of children 0–14 years in the household	–0.0230***	0.0020
Number of elderly 60+ years in the household	–0.0953***	0.0055
Long-term immigrant	0.1047***	0.0205
Medium-term immigrant	0.0643	0.0488
Short-term immigrant	0.1119	0.0931
Sample size	53 142	
Observed probability	0.5678	
Predicted probability	0.5874	
Pseudo R-squared	0.2513	
Chi-squared statistic	8 917.88	

Source: *Author's own calculations using the 2012 QLFS data.*
*Note 1: *** Significant at 1%*
*Note 2: ** Significant at 5%*
*Note 3: * Significant at 10%*

TABLE B10: Heckprobit regression on employment likelihood (conditional on participation), 2012

	MARGINAL EFFECT	STANDARD ERROR
Age: 25–34 years	–0.0549***	0.0228
Age: 35–44 years	0.0376	0.0230
Age: 45–54 years	0.1119***	0.0178
Age: 55–64 years	0.2048***	0.0065
Race: Coloured	0.0639***	0.0095
Race: Indian	0.1118***	0.0177
Race: White	0.1914***	0.0069
Gender: Female	0.0312***	0.0089
Province: Western Cape	–0.0994***	0.0169
Province: Northern Cape	–0.0713***	0.0181
Province: Free State	–0.0683***	0.0152
Province: KwaZulu-Natal	0.0799***	0.0104
Province: North West	0.0258***	0.0139
Province: Gauteng	–0.0839***	0.0136
Province: Mpumalanga	–0.0635***	0.0154
Province: Limpopo	0.0735***	0.0111
Years of education	–0.0355***	0.0042
Years of education squared	0.0019***	0.0003
Long-term immigrant	0.0803***	0.0150
Medium-term immigrant	0.0980**	0.0338
Short-term immigrant	0.0514	0.0562
Lambda	–0.3159***	0.0278

Sample size	28 298
Observed probability	0.7471
Predicted probability	0.7834
Pseudo R-squared	0.1319
Chi-squared statistic	2 245.77

Source: *Author's own calculations using the 2012 QLFS data.*
*Note 1: *** Significant at 1%*
*Note 2: ** Significant at 5%*
*Note 3: * Significant at 10%*

TABLE B11: Top ten detailed occupation industry categories of South African working-age population residing in the USA (if employed) (share of employed, %), 2015

		%
Detailed occupation category	Managers and officials	17.9
	Professionals	7.0
	Nurses	4.7
	Teachers n.e.c.	4.4
	Clerical workers	3.6
	Physicians and surgeons	3.5
	Salesmen and sales clerks n.e.c.	3.4
	Designers	2.6
	Real estate agents and brokers	2.5
	Stenographers, typists and secretaries	2.0
Detailed industry category	Miscellaneous business services	11.3
	Educational services	11.1
	Medical and other health services	8.0
	Hospitals	67.0
	Real estate	4.0
	Eating and drinking places	3.3
	Federal public administration	3.1
	Construction	3.1
	Welfare and religious services	2.9
	Agriculture	2.5

Source: *Author's calculations using the 2015 ACS data.*

Notes

Notes

Notes

DPRU CONTACTS

Programme Leader: Prof Haroon Bhorat – haroon.bhorat@uct.ac.za
Programme Manager: Ms Kezia Lilenstein – kezia.lilenstein@uct.ac.za

DHET CONTACTS

Programme Leader: Ms M Khuluvhe – Khuluvhe.M@dhet.gov.za
Project Secretariat: Ms M Ramasodi – Ramasodi.M@dhet.gov.za