

Do immigrants have better labour market outcomes than South Africans?

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2017

Abstract

We use data from the ten percent sample of the 2011 Census to explore labour market outcomes among immigrants and natives in South Africa. Distinguishing between naturalized immigrants, foreigners and natives, we show that although immigrants are more successful at engaging with the labour market than natives on average, after controlling for observable characteristics immigrants have a lower probability of participating in the labour market and a lower probability of employment than natives. This finding is in contrast to previous South African research, and is attributed to recognising the importance of social capital in facilitating labour market opportunities for immigrants. The general perception that immigrants fare better in the South African labour market than natives, often cited as among the key reasons for xenophobic violence, appears to be unjustified.

1. Introduction

Intermittent xenophobic violence in democratic South Africa has brought to the fore issues around the labour market status and perceived labour market success of immigrants. According to Crush and Pendleton (2004:1) “xenophobia undermines social cohesion, peaceful co-existence, good governance and human rights observance” and is a barrier to regional cooperation and harmony in the SADC region. As Africa’s most advanced economy, post-apartheid South Africa is a prime destination for individuals fleeing abuses in their countries of birth or seeking employment prospects, particularly for those from within Africa. The 2011 Census indicates that approximately 2.3 million people live but were not born in South Africa, and more than 70 percent of these immigrants are from within Africa (StatsSA, 2016).

Many immigrants uproot to seek opportunities and a better life, but the post-apartheid South African labour market is characterized by a number of challenges which both immigrants and natives must confront. For example, rising labour market participation, but limited employment generation, has seen unemployment rates soar, particularly among the youth (those aged 15-34). In 2015, the official unemployment rate for adults was around 17 percent, while amongst the youth this rate exceeded 35 percent (StatSA, 2015).

The perception that immigrants take South Africans’ jobs, and present “an obstacle to economic integration for the African majority who anticipated gains in employment and living standards after the demise of apartheid” (Zuberi and Sibanda, 2004) has been cited as among the key reasons for xenophobic attacks (Karimi, 2015). In addition, some nationals are also concerned that African immigration in particular perpetuates South Africa’s struggles with disease like HIV/AIDS and crime (Kotze and Hill, 1997; Sinclair, 1999; McDonald *et al.*, 2000).

In this paper, we consider the labour market and employment status of working age immigrants and compare this to South Africans. In particular, we question whether there is any cause to believe that immigrants are advantaged in the labour market compared to South Africans and we explore the labour market activities that immigrants in South Africa are typically involved in.

Specifically, we distinguish between native South Africans, naturalized immigrants and foreigners, and use data from the ten percent sample of the 2011 Census to:

- contrast the characteristics of immigrants and natives. We consider age, educational attainment and other factors recognised to be important predictors of labour market outcomes.
- estimate the probability of labour market participation and employment for immigrants and native South Africans. We consider not only raw differences in the probabilities of participation and employment, but also estimate probabilities conditional on observable characteristics. We further recognise the role of unobservable differences between the groups and attempt to address this issue.
- consider the nature of work undertaken by immigrants in South Africa.

Our results suggest that, contrary to perception, immigrants in South Africa do not fare as well in the labour market as native South Africans. In particular:

- although the raw probability of both labour market participation and employment is higher for both naturalized immigrants and foreigners as compared to native South Africans, sequentially controlling for various observable differences between the groups and including a proxy for social capital reduces the estimated probabilities, such that both naturalized immigrants and foreigners are ultimately *less likely* to participate and *less likely* to be in employment as compared to natives.
- Recognising that the different immigrant groups may have different motives for entering South Africa and hence be either positively or negatively selected into the South African labour market mitigates but does not eliminate the participation disadvantage experienced by both groups of immigrants and reinforces the employment disadvantage for naturalized immigrants specifically.
- Overall, immigrants in employment in South Africa are more likely than natives to be self-employed (or to combine self-employment with wage employment) and to work in the informal sector or in private households. This sort of work is widely recognized as being survivalist and precarious, offering little by way of remuneration.

2. Literature in brief

Internationally, the literature on the labour market effects of immigration is extensive, with research considering the integration of immigrants and the consequences of immigration for natives spanning more than five decades. Overviews of this literature are provided by Borjas (1994; 1999), Chiswick (1993) and Dustmann and Glitz (2005). For the US, the general consensus is that previously stylized facts – immigration has little effect on native employment; immigrants enter in a disadvantaged position, but that their economic position will improve over time to the extent that immigrants should reach earnings parity with or even overtake the earnings of natives with comparable economic backgrounds – have been replaced with new wisdom which reveals the ‘long-lasting and far reaching’ (often negative) consequences of immigration for the economic outcomes of natives. In addition to considering the effects of immigration on native employment and earnings, and to exploring the impact of changes in the composition of immigrant populations, the challenges faced by immigrants have also been researched in international studies. In particular, the effect of language assimilation problems has received significant attention (e.g. Chiswick and Miller, 2003; Dustmann and Fabbri, 2003; Dustmann and Van Soest, 2002).

In South Africa, peer-reviewed research on the economic impact of immigration is limited. Zuberi and Sibanda (2004) investigate the relationship between migration status, nativity and labour force outcomes in the post-apartheid labour market for males aged 20-55 years using data from the 1996 Census. Their results show that immigrants are more likely to participate in the labour force and to be gainfully employed than the indigenous population. More recently, Peters and Sundaram (2015) use 2001 Census

data to estimate the probability of being employed for working age immigrant men and South African internal migrants. In particular, they explore differences in participation and employment probabilities across 24 country of birth categories and show that immigrants from advanced countries perform better than nationals while immigrants from less-advanced countries perform worse in comparison to nationals.

In addition to the peer-reviewed studies mentioned above, from July 2013 to August 2014 the *Migrating for Work Research Consortium* (MiWorc), a research partnership comprising a host of academic and international partners and linked to the African Centre for Migration and Society at the University of the Witwatersrand, authored six reports on foreign labour in South Africa. The nature of these reports considers the availability of existing data, strategic recommendations, suggestions for a Quarterly Labour Force (QLFS) module and municipal level survey, and statistical and econometric analysis of the data obtained from the migration module piloted in the third QLFS of 2012.

Distinguishing between domestic non-migrants, domestic permanent migrants and international migrants, the econometric analysis undertaken by MiWorc shows that international migrants have a higher probability of employment than domestic non-migrants and domestic permanent migrants, and that international migrants also have a higher probability of being employed in informal and precarious activities in comparison to the other groups (Fauvelle-Aymar, 2014).

A key concern with the existing South African research is that studies do not control for the effect of social capital on the labour market outcomes of immigrants. Social capital can be defined as “ties of kinship or friendship that provide connections to jobs, people and resources at potential areas of destination” (Neumann and Massey, 1994:1). The process of immigrating to any country, and subsequent labour market success, is likely to be enhanced if immigrants are able to obtain information about the immigration process, housing and jobs. While it is not possible to directly measure the existence of the sorts of networks that facilitate this sort of information sharing in either the QLFS or the Census data, our paper addresses the omission of a control for social capital by including in the analysis a proxy which measures the proportion of individuals residing in the immigrant’s municipality who share the same region of birth. By including this control, we therefore recognise that the social capital associated with the concentration of immigrants in any particular area is likely to help mitigate the risks and costs associated with immigration, facilitate the acquisition of employment and increase earnings.

Another issue which could confound results is that of selection bias. Immigrants may be, on average “more able, ambitious, aggressive, entrepreneurial, or otherwise more favourably selected than similar individuals who choose to remain in their place of origin” (Chiswick, 1999:181), although the strength of this bias is likely linked to the motives for immigration (positive selection is less likely among refugees, for example). While recognising that unobservable endowments can contribute to immigrants’ success, Zuberi and Sibanda (2004) do not make any attempt to tackle the selectivity problem in their analysis for South Africa, and in fact *attribute* their findings to the possibility that immigrants are drawn disproportionately from a pool of successful individuals in their home countries. Peters and Sundaram (2015) partially address the selection problem by comparing immigrants to South Africa’s internal migrants only (rather than all native South Africans), arguing that because internal migrants may also be selected on positive labour market attributes they are preferred as a comparison group for immigrants. The MiWorc report fails to mention or account for selection bias in the econometric analysis (Fauvelle-Aymar, 2014). In our research, we attempt to address the selection concern by instrumenting for immigrant status using information on an individual’s country of birth.

3. Data and descriptive statistics

Labour market research in South Africa is typically conducted using national household surveys. Currently, labour market information is collected by Statistics South Africa (StatsSA) as part of the Quarterly Labour Force Survey (QLFS – 2008 to present), and labour market information is also available in the National Income Dynamics Study panel (NIDS – 2008 to present), collected by the Southern Africa Labour and Development Research Unit.

To establish an individual's immigrant status, information about their country of birth is required. It is routinely not possible to identify whether or not individuals are born outside of South Africa using the QLFS. In the third quarter of 2012, however, the QLFS piloted a migration module (Section 8). Comprising five questions in total, the migration module focuses primarily on internal migration but allows respondents to report that they were born outside of South Africa. However, the QLFS sample was not specifically designed to examine questions around immigration and only 1 319 respondents out of approximately 32 000 economically active respondents of working age can be identified as born outside of South Africa using these data (Fauvelle-Aymar, 2014). The NIDS does collect information that would enable researchers to classify individuals as immigrants, but only samples around 28 000 individuals from approximately 7 000 households. Furthermore, Fauvelle-Aymar (2014) reports that the third wave of NIDS only identified 248 foreign-born individuals. Although population weights are provided in both the QLFS and the NIDS, these weights are calibrated to ensure representivity by age, gender and race rather than nationality and so weighted estimates are unlikely to accurately reflect the magnitude or composition of immigrants living in South Africa.

In this paper we use the most reliable source of data to study immigrants in South Africa – the national Census. Census data are collected on each and every person living in South Africa by StatsSA. Most recently, data were collected in 2011 and we use the ten percent sample which has been made available to researchers.

The Census enables us to identify immigrants as individuals who were not born in South Africa, and to distinguish further between naturalized immigrants (citizens born outside South Africa) and foreigners (non-citizens born outside South Africa). This distinction is important: as we show in the descriptive analysis, naturalized immigrants and foreigners differ in a number of observable ways, and naturalized immigrants have lived in South Africa far longer, on average, than foreigners. There are also likely to be unobservable differences between these groups – for instance the motives for emigration to South Africa may be different between immigrants who are naturalized and those who are not. Crush (2008) indicates that prior to 1990 most 'authorised' migrants to South Africa came from Europe and neighbouring countries. When naturalized immigrants originally entered South Africa, this may have been with the prime intention of seeking success either under the protection of the apartheid government (for those entering prior to 1994) or under the auspices of new beginnings in the early years post-apartheid. More recently, foreigners (particularly those from elsewhere in Africa) may have entered South Africa in response to violence and unrest in their home countries. According to Crush (2008), South Africa has become a prime destination for refugees from the rest of Africa since 1990. Differences in emigration motives can therefore be thought of as relating to 'pull' and 'push' factors in South Africa and in immigrants' home countries and as we show later, may account for differences in selection into employment for these two groups. We therefore contrast naturalized immigrants and foreigners to individuals who were both born in and are citizens of South Africa, who we refer to as native South Africans.

Labour market information is also collected in the Census – specifically on participation, unemployment and employment, and it is possible to identify whether workers are wage or self-employed and whether they work in the formal or informal sector. Industry and occupation information is also available. Since our focus is on labour market outcomes, we restrict the sample to individuals of working age, namely those aged 15 to 65 years.

One of the pitfalls of the Census data is that no information is collected specifically on earnings. A crude measure of gross income is available, but this includes income from grants, remittances, rental income, and interest for example, and it is impossible to isolate respondents' earned income. Any analysis of exactly how South Africans or immigrants fare once employed is therefore not possible using these data. Another concern is whether or not the collection of information on immigrant status is comprehensive – in particular, individuals who are in the country illegally may have avoided enumeration or provided false information, while those fearing xenophobic violence may have falsely identified themselves as being citizens. Our results may therefore underestimate the extent of immigration and the differences between native South Africans and immigrants. However, any under- (or over) counting of individuals is likely to be mitigated by the Post Enumeration Survey, conducted directly after the Census. This survey is designed to determine the extent of any undercount or overcount and is used by StatsSA to adjust Census data on a statistical basis.

Throughout this paper, probability weights are used to produce results at the level of the population. Before presenting our multivariate analysis, we first present descriptive statistics to show how South Africans and immigrants differ in terms of their observable characteristics.

One of the key advantages of analysing the Census data, in comparison to datasets such as the QLFS, is the ability to exploit a large sample size. The ten percent sample of the Census identifies more than 33 000 naturalized immigrants and 104 000 foreigners of working age. They represent populations of 413 000 and 1.28 million respectively, or 1.3 percent and 3.9 percent of South Africa's working age population. Table 1 shows that the vast majority of immigrants to South Africa were born in other SADC countries. Almost two-thirds of naturalized immigrants and three quarters of foreigners originate in SADC countries. Amongst naturalized immigrants, a further twelve percent were born in the United Kingdom or Europe, or do not specify their country of birth. In contrast, amongst foreigners, the second largest region of origin is the rest of Africa. Naturalized immigrants have been in South Africa for more than twenty years, on average, whilst foreigners have spent less than seven years in the country.

[Table 1]

[Table 2]

Table 2 shows that there are a number of differences in demographic and human capital characteristics between the three immigrant status groups which may impact on their labour market outcomes. Both immigrant groups are male-dominated: more than 55 percent of naturalized immigrants and almost two-thirds of foreigners are male. Naturalized immigrants are much more likely than South Africans to be white, while foreigners are more likely to be African. Foreigners have a similar education distribution to South Africans, whereas naturalized immigrants are almost four times as likely as South Africans to have attained tertiary education. Both immigrant groups live in smaller households than South Africans, with fewer children on average.

[Table 3]

Labour market differences between naturalized immigrants, foreigners and natives are shown in Table 3. On average, immigrants are almost twenty percentage points more likely than South Africans to participate in the labour market (using the broad definition of participation). Amongst participants, immigrants are also much more likely than South Africans to be employed, with the highest employment probability of more than 80 percent amongst naturalized immigrants. However, amongst the employed, immigrants are more likely than South Africans to be self-employed, either on its own or in combination with wage employment. Foreigners are much less likely than South Africans to work in the formal sector. These descriptive statistics thus suggest that on average, immigrants are more successful than South Africans in engaging with the labour market, but that they may access more precarious forms of employment. The next section investigates these issues further in a multivariate context.

4. Econometric specification and results

In this section, we estimate the extent to which immigrants retain a labour market advantage over native South Africans when controlling for other observable demographic and human capital characteristics. In addition to the variables presented in Table 2, we include a control for the extent of social capital that immigrants may be able to access in South Africa. This is motivated by the hypothesis that, amongst immigrants, those who can more quickly or easily establish social networks can access better information about employment opportunities, and may therefore perform better. The Census does not explicitly collect such information. Therefore we create a proxy, by estimating the percentage of working-age adults in the individual's municipality that were born in the same geographical region. We posit that if there are more individuals of similar nationality living nearby, an immigrant will find it easier to establish social networks. This variable is also interacted with immigrant status in the models.

[Table 4]

Table 4 shows that both groups of immigrants have a significantly higher probability of participating than citizens on average. This advantage is reduced by more than half, but remains significant, when controlling for observable characteristics but not the composition of the immigrant's municipality. In specification 3, which includes the social capital proxy, immigrants are at a significant participation disadvantage compared to native South Africans.¹ However, this disadvantage is partially offset by having access to social capital: the interactions between social capital and immigrant status both have positive and significant effects on participation. Across the model specifications, naturalized immigrants and foreigners perform similarly.²

[Table 5]

Table 5 repeats the estimation, but with the outcome variable being employment status amongst labour market participants. The pattern of results across the specifications is similar to that for participation: the initial advantage is reduced to an employment disadvantage when controlling for both the individual's observable characteristics and the likely extent of social capital. Here, naturalized immigrants are initially

¹ We repeated all of the estimations using a restricted sample of individuals aged 20 to 59, to exclude those who may be in full-time education or who are pension-eligible. Doing so did not substantially alter any of the findings. We also estimated a specification that controlled for the length of time that the immigrant has been in South Africa and its square. Again, the results were found to be robust to this change in specification.

² Table A1 in the appendix includes the results for the full set of control variables for the models in Table 4. The full results for other models may be obtained from the authors upon request.

at the largest advantage relative to native South Africans, but after including all controls they are at the largest disadvantage. They also benefit the most from access to social capital.

The results presented thus far suggest that, although on average immigrants appear to have better labour market outcomes than native South Africans, this advantage can be attributed entirely to their better observable characteristics and access to social capital. Once these elements are controlled for, the advantage becomes a disadvantage. However, as discussed previously, if immigrants in general are more motivated than native South Africans, in unobservable ways, then the difference in labour market outcomes by immigrant status is likely to be positively biased, that is, the disadvantage faced by immigrants is underestimated. Furthermore, unobservable differences between naturalized immigrants and foreigners may result in different selection outcomes between these groups. To address this potential endogeneity, we instrument for immigrant status using the individual's region of birth. This is highly correlated with immigrant status, but we argue that after controlling for social capital and observable characteristics, it has no independent effect on labour market outcomes.

The results of this instrumentation (IV) strategy are presented in Table 6. Since immigrant status is binary, an instrumental variable probit model is not appropriate, and thus we use a linear probability model. We also re-estimate the participation and employment equations using Ordinary Least Squares (OLS) for comparison purposes. In comparison to the OLS results, the immigrant participation disadvantage is reduced (suggesting of negative, rather than positive selection effects) but remains significant after controlling for the endogeneity of immigrant status. The benefits of social capital become much larger for naturalized immigrants, but are negative for foreigners. In the IV approach, the employment disadvantage worsens for naturalized immigrants, but is offset by an increased benefit of social capital. The employment disadvantage is lessened for foreigners, where social capital now has a negative effect.³

[Table 6]

The interpretation of the results controlling for selection warrants further discussion. Overall, the effect of controlling for the endogeneity of immigrant status is much more pronounced in the analysis of employment than for participation and this is most likely because simply being willing and able to work (the criteria which define labour market participants) is unlikely to be influenced differently for native South Africans versus immigrants by any underlying and unobservable positive or negative traits. Among the employed, likely differences in the underlying motives for immigration between naturalized immigrants and foreigners are being reflected in the reported results. For naturalized immigrants, who have lived in South Africa much longer, on average, than foreigners and who may have been 'pulled' to South Africa there is evidence of positive selection. Their employment disadvantage thus becomes larger after controlling for endogeneity. For foreigners, who have entered South Africa more recently, possibly being 'pushed' from their birth countries, there is evidence of negative selection, and controlling for this therefore reduces their employment disadvantage. The effect of controlling for unobservable differences between workers also impacts upon the social capital controls – the increase in the positive coefficient for naturalized citizens is consistent with communication and information networks being more

³ We conducted a series of tests on the instruments in the IV models. For both the participation and employment models, the immigrant status variables are indeed endogenous. Both models are identified, and we reject the hypothesis of weak instruments. The Sargan-Hansen test of over-identifying restrictions confirms the validity of the instruments in the participation equation, but not in the employment equation. Thus region of birth may have an independent effect on employment status. The employment IV results should thus be treated as suggestive, rather than conclusive.

established for those who are naturalized while for foreigners, these networks may be difficult to penetrate given markedly different experiences/motives for immigration. For foreigners, the existence of established networks, but difficulties accessing them, may in fact hinder their success, and the negative coefficient on the social capital control reflects this to some degree.

Finally, we turn to an examination of outcomes amongst the employed. While we cannot examine earnings due to the very limited nature of income data collected by the Census, we instead examine two measures of the benefits of employment, namely employment type and sector. Both of these outcomes consist of three categories, and thus the estimation is performed as a multinomial probit model. Table 7 shows the results for employment type, which estimate the probability of an employed individual being self-employed or both wage and self-employed, relative to the reference category of being wage employed only. On average, immigrants are significantly more likely than native South Africans to be self-employed, or both self-employed and wage employed, than wage employed only. Foreigners have a higher probability than naturalized immigrants of self-employment, while the converse is true for both wage and self-employment. In specification 2, which includes controls for other observable differences and social capital, there is a large increase in the likelihood of self-employment for both groups. This is especially the case for foreigners, with social capital reducing the likelihood of self-employment for both groups. With controls, naturalized immigrants are less likely to work in both employment categories than in wage employment alone. There is no significant difference between the probability of working in both employment categories or in wage employment only for foreigners. In general, these results suggest that immigrants largely make their own employment, especially when social capital is limited.

Self-employment in South Africa is mostly survivalist, and this work is unlikely to comprise high quality jobs. We proxy for job quality by examining the sector in which individuals work. Sector is self-reported, and refers to the individual's main job or business. Individuals are asked to classify their place of work into one of three categories: formal sector, informal sector, or a private household. Less than one percent of employed individuals were not able to answer this question, and have been excluded from the analysis. Table 8 shows the multinomial probit estimates results for sector, which estimate the probability of an employed individual working in the informal sector or in a private household, relative to the reference category of working in the formal sector. Across all specifications, immigrants are significantly more likely than citizens to be employed in the informal sector or in private households. On average, this is especially the case for foreigners, and less so for naturalized immigrants. These differences between native South Africans and immigrants increase substantially when controlling for observable characteristics, including both the standard set of controls used in previous models as well as an additional control for the individual's employment type. Having access to social capital offers significant protection against informal sector and private household work, especially for foreigners. Thus it appears that, even when immigrants are able to access employment, which they do at a lower rate than native South Africans, they work in more precarious and survivalist types of jobs.

[Table 8]

The presence of unobservable differences between workers is again an issue which may confound our analysis of employment outcomes. Not only is there the problem of selection effects for immigration to contend with, but selection into employment is also a concern. If the unobservable factors that determine who finds employment, such as ability and motivation, are correlated with immigrant status, then we would expect the immigrant coefficients to be biased in these regressions. In order to control for this issue, we would need to find variables that are correlated with access to employment, but do not affect the employment type or sector. Such variables are difficult to identify in most South Africans datasets,

and the very limited number of questions asked in the Census does not allow us to include such controls. However, the earlier IV estimates which controlled for the endogeneity of immigration suggest that naturalized immigrants are positively selected, while foreigners are negatively selected. It is thus likely that controlling for selection into employment would decrease the disadvantage in employment type or sector faced by naturalized immigrants, but would further increase the disadvantage faced by foreigners. Our finding that foreigners work in more precarious and survivalist types of jobs than native South Africans is therefore likely to be an underestimate of the extent of their labour market disadvantage.

5. Concluding comments

In this paper we use population-weighted data from the ten percent sample of the 2011 Census to compare the labour market outcomes for working age immigrants and native South Africans, in order to determine whether the common perception that immigrants fare better in terms of participation and employment is warranted.

We distinguish between native South Africans, naturalized immigrants, and foreigners, and *in contrast* to prior South African research our results suggest that immigrants overall are at a labour market participation and employment *disadvantage* in comparison to native South Africans. Like other authors, we initially find that immigrants are more likely than South Africans to participate and be employed, but we show that this advantage is attributable to the social networks that some immigrants can access. After controlling for these networks, immigrants have less access to the labour market and to employment than native South Africans. Our results also show that immigrants are more likely to be making their own way in the labour market through self-employment than taking the jobs and opportunities available to South Africans. The analysis therefore reinforces the importance of social capital to the ability of immigrants to succeed in South Africa, while recognising that differences in the motives for immigration are also likely to impact on immigrants' labour market experience. We attempt to control for the endogeneity of immigration, and find that doing so suggests the presence of both positive and negative selection for different groups of immigrants but does not substantially alter our findings. In general, our results are very robust to the definition of the sample, the specification of the model, and the method of estimation.

The findings of our study suggest that the generalised perceptions around immigrants' economic and labour market success that may feed xenophobic violence in South Africa are unfounded. Finding productive work in South Africa is also challenging for individuals not born in the country, and further research is required to understand the environment in which immigrants live and work and the difficulties they face. It is important to recognise, however, that despite this research revealing that immigrants fare poorly in South Africa on average, there is likely to be considerable variation in the distribution of labour market outcomes for immigrants around the mean. Further investigation of why some immigrants may perform worse than others, and some better, is therefore needed to deepen our understanding of the complexities and challenges of South Africa's labour market.

6. References

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7. Appendix

Table A1. Probit estimates of labour market participation (displaying all control variables)

Dependent variable = 1 if participant, 0 otherwise	(1)	(2)	(3)
Naturalized	0.505*** (0.008)	0.200*** (0.009)	-2.055*** (0.033)
Foreign	0.534*** (0.004)	0.254*** (0.005)	-2.001*** (0.032)
Naturalized*social capital			0.044*** (0.002)
Foreign*social capital			0.045*** (0.001)
Social capital			-0.023*** (0.000)
Age		0.211*** (0.000)	0.211*** (0.000)
Age squared		-0.003*** (0.000)	-0.003*** (0.000)
Male		0.229*** (0.002)	0.229*** (0.002)
Coloured		0.023*** (0.004)	0.022*** (0.004)
Indian		-0.204*** (0.005)	-0.220*** (0.005)
White		0.042*** (0.004)	0.046*** (0.004)
Other race		-0.045*** (0.014)	-0.031** (0.014)
Living together		0.111*** (0.003)	0.110*** (0.003)
Never married		-0.092*** (0.002)	-0.089*** (0.002)
Widower/widow		-0.076*** (0.005)	-0.072*** (0.005)
Separated		0.000 (0.009)	0.000 (0.009)
Divorced		0.109*** (0.008)	0.106*** (0.008)
Incomplete schooling		0.337*** (0.004)	0.332*** (0.004)
Matric		0.630*** (0.004)	0.623*** (0.004)
Diploma		0.857*** (0.006)	0.855*** (0.006)
Degree		0.877*** (0.008)	0.872*** (0.008)
Eastern Cape		-0.337***	-0.261***

Dependent variable = 1 if participant, 0 otherwise	(1)	(2)	(3)
		(0.004)	(0.004)
Northern Cape		-0.165***	-0.103***
		(0.006)	(0.006)
Free State		-0.172***	-0.137***
		(0.005)	(0.005)
Kwazulu-Natal		-0.170***	-0.102***
		(0.004)	(0.004)
North West		-0.170***	-0.187***
		(0.005)	(0.005)
Gauteng		0.057***	-0.074***
		(0.004)	(0.004)
Mpumalanga		-0.091***	-0.087***
		(0.004)	(0.004)
Limpopo		-0.314***	-0.298***
		(0.004)	(0.004)
Household size		-0.008***	-0.009***
		(0.000)	(0.000)
Number of children aged less than 6 in household		0.011***	0.014***
		(0.001)	(0.001)
Number of children aged 6 to 18 in household		-0.070***	-0.067***
		(0.001)	(0.001)
Constant	0.384***	-3.371***	-1.152***
	(0.001)	(0.009)	(0.033)
Sample	2 785 511	2 772 528	2 766 018
Population	33 121 667	32 973 858	32 894 581

Source: Census 2011

Notes: Standard errors are in parentheses. Labour market participation is defined according to the broad definition. The reference categories are: South African-born, female, black African, married, no schooling, Western Cape. Significance levels are shown by *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$.

Table 1. Country of birth of working age immigrants to South Africa

	Naturalized	Foreign
SADC	0.635 (0.003)	0.754 (0.001)
Rest of Africa	0.051 (0.001)	0.086 (0.001)
North America	0.003 (0.000)	0.002 (0.000)
Latin America and Caribbean	0.004 (0.000)	0.002 (0.000)
Asia	0.056 (0.001)	0.046 (0.001)
United Kingdom and Europe	0.123 (0.002)	0.035 (0.001)
Oceania	0.002 (0.000)	0.001 (0.000)
Foreign country not specified	0.125 (0.002)	0.073 (0.001)
Years since immigration	20.739 (0.081)	6.757 (0.026)
Sample	33 864	104 397
Population	412 847	1 284 545

Source: Census 2011

Notes: Standard errors are in parentheses.

Table 2. Demographic and human capital characteristics, by immigrant status

	SA	Naturalized	Foreign
Age	33.878 (0.008)	39.936 (0.069)	31.524 (0.030)
Male	0.476 (0.000)	0.562 (0.003)	0.640 (0.001)
Female	0.524 (0.000)	0.438 (0.003)	0.360 (0.001)
African	0.785 (0.000)	0.516 (0.003)	0.829 (0.001)
Coloured	0.096 (0.000)	0.019 (0.001)	0.004 (0.000)
Indian	0.027 (0.000)	0.051 (0.001)	0.040 (0.001)
White	0.090 (0.000)	0.376 (0.003)	0.052 (0.001)
Other	0.002 (0.000)	0.038 (0.001)	0.075 (0.001)
No schooling	0.059 (0.000)	0.072 (0.001)	0.073 (0.001)
Incomplete schooling	0.559 (0.000)	0.385 (0.003)	0.577 (0.002)
Matric	0.320 (0.000)	0.338 (0.003)	0.258 (0.001)
Diploma	0.041 (0.000)	0.118 (0.002)	0.054 (0.001)
Degree	0.022 (0.000)	0.087 (0.002)	0.038 (0.001)
Household size	3.563 (0.001)	2.735 (0.009)	2.395 (0.005)
Number of children aged less than 6	0.622 (0.001)	0.366 (0.004)	0.353 (0.002)
Number of children aged 6 to 18	1.250 (0.001)	0.687 (0.006)	0.341 (0.002)

Source: Census 2011

Notes: Standard errors are in parentheses.

Table 3. Labour market characteristics, by immigrant status

	SA	Naturalized	Foreign
Labour market participants	0.650 (0.000)	0.816 (0.002)	0.836 (0.001)
Amongst labour market participants:			
Employed	0.588 (0.000)	0.814 (0.002)	0.754 (0.001)
Amongst the employed:			
Employment type			
Wage employed	0.843 (0.000)	0.740 (0.003)	0.767 (0.002)
Self-employed	0.041 (0.000)	0.071 (0.002)	0.082 (0.001)
Both wage and self-employed	0.116 (0.000)	0.189 (0.003)	0.151 (0.001)
Sector of employment			
Formal sector	0.766 (0.000)	0.746 (0.003)	0.596 (0.002)
Informal sector	0.122 (0.000)	0.123 (0.002)	0.205 (0.002)
Private households	0.113 (0.000)	0.130 (0.002)	0.199 (0.002)
Sample	2 620 590	33 864	104 397
Population	31 109 380	412 847	1 284 545

Source: Census 2011

Notes: Standard errors are in parentheses. Labour market participation is defined according to the broad definition.

Table 4. Probit estimates of labour market participation

Dependent variable = 1 if participant, 0 otherwise	(1)	(2)	(3)
Naturalized	0.505*** (0.008)	0.200*** (0.009)	-2.055*** (0.033)
Foreign	0.534*** (0.004)	0.254*** (0.005)	-2.001*** (0.032)
Naturalized*social capital			0.044*** (0.002)
Foreign*social capital			0.045*** (0.001)
Constant	0.384*** (0.001)	-3.371*** (0.009)	-1.152*** (0.033)
Other controls	No	Yes	Yes
Sample	2 785 511	2 772 528	2 766 018
Population	33 121 667	32 973 858	32 894 581

Source: Census 2011

Notes: Standard errors are in parentheses. Labour market participation is defined according to the broad definition. Other controls include age, gender, race, marital status, education level, province of residence and household composition. Significance levels are shown by *** p<0.01, ** p<0.05 and * p<0.1.

Table 5. Probit estimates of employment amongst labour market participants

Dependent variable = 1 if employed, 0 otherwise	(1)	(2)	(3)
Naturalized	0.670*** (0.008)	0.233*** (0.010)	-1.807*** (0.038)
Foreign	0.465*** (0.005)	0.440*** (0.005)	-1.497*** (0.036)
Naturalized*social capital			0.042*** (0.002)
Foreign*social capital			0.025*** (0.001)
Constant	0.222*** (0.001)	-1.911*** (0.013)	0.073* (0.037)
Other controls	No	Yes	Yes
Sample	1 818 642	1 812 193	1 807 772
Population	21 837 036	21 758 841	21 704 445

Source: Census 2011

Notes: Standard errors are in parentheses. Employment is estimated amongst labour market participants. Other controls include age, gender, race, marital status, education level, province of residence and household composition. Significance levels are shown by *** p<0.01, ** p<0.05 and * p<0.1.

Table 6. Instrumental variables estimation of participation and employment

	Participation		Employment	
	OLS	IV	OLS	IV
Naturalized	-0.615*** (0.009)	-0.563*** (0.027)	-0.632*** (0.011)	-0.810*** (0.033)
Foreign	-0.595*** (0.009)	-0.455*** (0.041)	-0.516*** (0.011)	-0.235*** (0.046)
Naturalized*social capital	0.012*** (0.000)	0.374*** (0.047)	0.015*** (0.001)	0.259*** (0.048)
Foreign*social capital	0.012*** (0.000)	-0.067*** (0.012)	0.010*** (0.000)	-0.051*** (0.012)
Constant	0.001 (0.009)	-0.136*** (0.035)	0.517*** (0.012)	0.375*** (0.038)
Other controls	Yes	Yes	Yes	Yes
Sample	2 766 018	2 766 018	1 807 772	1 807 772
Population	32 894 581	32 894 581	21 704 445	21 704 445

Source: Census 2011

Notes: Standard errors are in parentheses. All models include controls for age, gender, race, marital status, education level, province of residence and household composition. Significance levels are shown by *** p<0.01, ** p<0.05 and * p<0.1.

Table 7. Multinomial probit estimation of employment type

Reference category = wage employed only	(1)		(2)	
	Self-employed	Both wage and self-employed	Self-employed	Both wage and self-employed
Naturalized	0.477*** (0.017)	0.480*** (0.014)	0.978*** (0.104)	-0.151* (0.077)
Foreign	0.529*** (0.010)	0.289*** (0.009)	1.265*** (0.103)	-0.035 (0.076)
Naturalized*social capital			-0.036*** (0.005)	-0.013*** (0.004)
Foreign*social capital			-0.062*** (0.003)	-0.026*** (0.002)
Constant	-2.255*** (0.003)	-1.618*** (0.002)	-2.103*** (0.111)	-1.288*** (0.082)
Other controls	No	No	Yes	Yes
Sample	1 010 376	1 010 376	1 002 951	1 002 951
Population	12 266 952	12 266 952	12 175 843	12 175 843

Source: Census 2011

Notes: Standard errors are in parentheses. The models are estimated amongst the employed. The reference category is individuals who are wage employed only. Other controls include age, gender, race, marital status, education level, province of residence and household composition. Significance levels are shown by *** p<0.01, ** p<0.05 and * p<0.1.

Table 8. Multinomial probit estimation of employment sector

Reference category = formal sector	(1)		(2)		(3)	
	Informal sector	Private households	Informal sector	Private households	Informal sector	Private households
Naturalized	0.046*** (0.015)	0.135*** (0.014)	2.598*** (0.083)	0.730*** (0.075)	2.627*** (0.086)	0.753*** (0.078)
Foreign	0.612*** (0.008)	0.644*** (0.008)	3.042*** (0.081)	1.181*** (0.073)	3.049*** (0.084)	1.184*** (0.076)
Naturalized*social capital			-0.033*** (0.004)	-0.011*** (0.004)	-0.031*** (0.004)	-0.010** (0.004)
Foreign*social capital			-0.053*** (0.002)	-0.029*** (0.002)	-0.049*** (0.002)	-0.026*** (0.002)
Constant	-1.491*** (0.002)	-1.540*** (0.002)	-3.901*** (0.086)	-2.469*** (0.079)	-3.828*** (0.090)	-2.401*** (0.082)
Other controls	No	No	Basic	Basic	Extended	Extended
Sample	1 059 069	1 059 069	1 051 321	1 051 321	979 488	979 488
Population	12 843 300	12 843 300	12 748 312	12 748 312	11 888 410	11 888 410

Source: Census 2011

Notes: Standard errors are in parentheses. The models are estimated amongst the employed. The reference category is individuals who are employed in the formal sector. Basic controls include age, gender, race, marital status, education level and province of residence. Extended controls also include employment type. Significance levels are shown by *** p<0.01, ** p<0.05 and * p<0.1.