The Refugee Rate: Evidence from a Field Experiment of Discrimination Against Refugees and Asylum Seekers

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Plagiarism Declaration

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With the number of displaced continuing to rise, there is more urgency than ever to create sustainable solutions for the economic inclusion of refugees. One path that offers benefits to all stakeholders is self-reliance though providing refugees the right to work. Yet little work has been done to measure discrimination against displaced persons, a potential barrier to success with self-reliance. I perform a field experiment to measure discrimination against foreign and displaced persons in the labour market in which fake inquiries, each signaling different statuses, are sent to job postings. The results show significant discrimination against foreign and displaced applicants, with refugees facing the most acute and persistent decline in response rate. Refugees receive roughly 20% fewer responses than native-born candidates, which holds across industries and locations. This lower "refugee rate" suggests host nations will have to be proactive in ensuring equal protection if they hope to achieve success in the economic inclusion of refugees.

I. Introduction

In the past decade alone, the number of refugees recognized by UNHCR has doubled while the number of asylum seekers has quintupled, representing over 30 million people[1]. This dramatic increase has become a defining issue of our time, with millions pushed into precarious situations and host nations thrust into fierce political divisions on how to respond. The magnitude of suffering among this vulnerable population, as well as the political turmoil in host nations, places an immense urgency on understanding the economic lives of forced migrants. Doing so will provide opportunities to improve outcomes for this vulnerable population as well as foundations for nations to build their policy response.

Perhaps the most important factor in improving economic well-being, for refugees or anyone, is the right to work. Providing forced migrants with the right to work allows them to be self-sufficient, pursuing work and a life they choose rather than be dependent on state or international aid[2]. Many countries choose this route, hoping this legal right will improve outcomes for refugees, lessen strain on national budgets, and integrate displaced populations among the native population.

Yet it is unclear if this right will be effective given the existence of discrimination in labour markets. A number of studies, especially those employing audit and correspondence methodologies, have provided strong evidence of discrimination in labour markets in terms of race (Bertrand, 2004), sex (Neumark, 1996), age (Neumark, 2019), ethnicity and nationality (Zschirnt, 2016), which all reduce economic opportunities for these disadvantaged groups. The existence of these barriers often requires governments to implement strong anti-discrimination policies in order for labour markets to be more equitable and efficient. There is a dearth of evidence concerning asylum seekers and refugees in this regard, although it is plausible that discrimination would affect these individuals as well, especially in contexts with large opposition to immigration among the public. This is the focus of this thesis, its

[1] An asylum seeker is a person who has fled their country of origin due to persecution and is seeking protection from a host state. An asylum seeker becomes a refugee after a status determination is made in the host country.

[2] Forced migrants are made to move from their home through conflict or persecution, as opposed to voluntary migrants who make the decision to emigrate of their own free will. It is important to note that "forced migrant" is technically a broader category containing asylum seekers and refugees as well as others such as internally displaced people and trafficked persons.

contribution being to better understand the extent to which asylum seekers and refuges face labour market discrimination in a developing country context.

South Africa is a prime candidate to study this question. Whereas many of its neighbors in the region require refugees to live in (commonly subpar) camps, South Africa grants refugees the right to live and work in the country. Yet despite boasting this inviting regime of rights, the country often struggles with xenophobia. Numerous protests against foreigners, including asylum seekers and refugees, have turned violent. South African nationals have threatened or attacked foreign workers while targeting foreign shops for looting or burning (Dixon, 2015; O'Halloran, 2015; Somdyala 2019). Beyond instances of violence, the country sees large levels of anti-foreigner sentiment among the wider population, with the majority of citizens holding negative views of migrants and refugees (Crush, 2013). Meanwhile, studies have provided evidence of discrimination against asylum seekers and refugees in services such as healthcare and schooling (Landau, 2006). This all begs the question of whether this *de jure* legal right produces *de facto* access for the displaced population given the barriers of discrimination.

To answer this question, I conduct a large-scale field experiment using a correspondence study methodology. I send out inquires to entry-level job postings signaling different residency status, from native citizen to asylum seeker and refugee, and measure the response rate of employers. Based on the evidence from 3,200 inquiries, I find evidence of significant discrimination against displaced persons, especially those with full refugee status who face a persistently lower "refugee rate" of response. The evidence also suggests gaps in hiring are not driven by differences in perceived skills but by distinct distaste among employers for displaced candidates. This suggests that the South African government, and potentially other host nations around the globe, must take a more active approach to fulfil its legal obligation of providing refugees and asylum seekers with the right to work.

Chapter 1: (Forced) Migration: Global and South African Context

II. The Economics and Politics of Migration

Recent estimates put the potential benefits of removing barriers to labour mobility in the trillions (Clemens, 2011). This makes the marginal benefits of the trade agreements nations

pour large resources into look paltry, suggesting countries may be better served working to harmonize labour markets. The large benefits from relaxing labour restrictions could alleviate poverty at a scale rivaling that seen in China in recent decades. A Nigerian worker can increase their earnings by over 14 times by moving to the United States (Clemens, 2019A). The children of migrants also benefit by moving from a poorer area to a wealthier one (Chetty, 2016) and go on to be some of the strongest contributors to host economies and fiscal balances (NASEM, 2017). Those who remain behind in host countries also reap the benefits of migration, as remittances help alleviate poverty (Adams, 2005; López-Córdova, 2005) and provide insurance against economic downturns (Frankel, 2011). It's clear easing labour mobility restrictions would generate large economic benefits, especially for the poorest among us.

Host nations also see large benefits from migration. It provides them a wider talent pool to draw productive labour from, filling skills-gaps (Orrenius, 2020) and adding value to national firms (Bahar, 2020A). This can help host firms to produce greater output without the need for costly investment in capital-intensive processes (Clemens, 2018). Immigrants are more likely to produce innovative and valuable technology (Bernstein, 2018; Bahar, 2020B) and many are more likely to start a business (Evans, 1989). These businesses are also more likely to export (Fairlie, 2012; Sui Sui, 2014), building linkages to the global economy and inducing growth (Greenaway, 1999). Immigrants can also help host nation finances by supporting aging host populations (Storesletten, 2000) and providing a large tax base in the long term (NASEM, 2017). Migration has the potential to be a win not just for migrants, but host countries as well.

Of course, there are concerns that new migrant labour, including refugees, may displace native workers. For instance, Borjas (2017) suggests concerns about displacement after reanalyzing Card (1990), which uses data from a sudden shock of relatively unskilled refugee labour to estimate impacts on native workers. The original study finds virtually no effect on either wages or employment for natives. Yet subgroup analysis by Borjas (2017) finds that there are major penalties for low-skilled natives, with high school dropouts losing 10-30% of their wages. This would suggest large costs from taking in migrants and refugees. But new analysis by Clemens (2019B) reveals that this result is driven by compositional changes in the

native population[3]. When this change is accounted for, the original null effects stand. Other studies examining large shocks of refugees in numerous contexts also find null effects on outcomes for natives (Mayda, 2017; Angrist, 2003; Firedberg, 2001) while finding long-term economic gains (Murard, 2018). It appears concerns about migrants and refugees displacing natives may be overstated.

How do large shocks to the labour pool not have large effects on outcomes for native workers? In a simple supply and demand model, an increase in the foreign labour supply would result in worse outcomes for natives. Yet migrants do not just increase supply, but demand as well, offsetting the negative effects. In addition, migrants often act as complementary, not substitute, labour for natives, improving outcomes for all (Islam, 2009; Peri, 2007). Migrants can also add to agglomeration economies (Au, 2006), producing thicker labour markets to boost growth. And as discussed earlier, migrants help improve firm productivity (Bahar, 2020A), freeing up new resources which ultimately provide natives with greater opportunities. Of course, displacement is still possible. But the large economic and fiscal benefits of migration can be used to offset this displacement, making everyone better off in a Kaldor-Hicks improvement. With the potential to reap large benefits without major setbacks, the economic arguments suggest that host countries would be well served to attract migrants and take in refugee.

Despite the potential gains, many host nations have recently gone in the other direction, instead rejecting migrants and refusing to take refugees. Nationalist parties have sprung up and gained power in many countries, often using opposition to immigrants as their rallying call. The United Kingdom exited the European Union on the promise of limiting immigration. President Trump won election after suggesting the vast majority of immigrants from Mexico are violent criminals. South Africa, the largest destination for migrants on the African continent (UNCTAD, 2018), released a white paper on immigration which would make it harder for migrants to gain residency and nearly impossible to gain citizenship. It is apparent that some nations are moving towards closing their borders.

Forced migrants face similar resistance. As the number of asylum seekers and refugees has grown, so has political opposition among host states. Nationalist parties in Europe

[3] This is driven partly by improved surveying techniques, which better captured low-wage native workers in the years following the arrivals.

scapegoat refugees for economic woes and crime, despite evidence to the contrary (Amuedo-Dorantes, 2018). The United States effectively shut down their asylum system, taking in no new refugees and instead expelling them to unsafe camps in Mexico**.** South Africa, in the White Paper, suggests housing asylum seekers in border camps and rejecting all who traveled through a third country. Those fleeing persecution face barriers to legal protection even after escaping their country of origin.

There has, however, been some progress towards improving the lives of refugees. With the number of refugees increasing, as well as concentrating in just a few countries, member states of the United Nations drafted the Global Compact on Refugees. One of the main objectives of the Compact is to enhance refugee self-reliance (Khan, 2018), including through the right to work. The Compact looks to achieve this through the Comprehensive Refugee Response Framework, which hopes to promote the economic inclusion of refugees and provide access to livelihoods (Türk, 2018). The Global Compact is a step towards greater economic inclusion for displaced persons.

Of course, there are still barriers to successfully promoting self-reliance through the Compact. It is not a legally binding document, meaning member states have no tangible obligation to follow through on the commitments they signed on to. In addition, nations have increasingly turned to "externalization" policies to exclude refugees (McNamara, 2013). This phenomenon occurs when a host country enables a third country to carry out anti-migrant policies. For example, the United States provide resources to Mexico to stop asylum seekers along its border with Guatemala before they can reach the U.S. border. Likewise, the European Union provides resources to the Libyan Coast Guard to turn back migrant ships in the Mediterranean to unsafe ports (Mogherini, 2016). So even if member states sign onto the Compact, there are still numerous ways to avoid fulfilling the obligations laid out in the framework.

Despite these challenges, some countries have opted towards expanding rights, rather than rejecting refugees. Countries like Germany have provided large numbers of refugees with the right to work, though contingent on expensive "assimilation" courses.[4] Europe is not alone, as countries on the African continent also provide the right to work. Uganda provides

[4] These right-granting countries also "disperse" migrants throughout the country to prevent ethnic enclaves, which may be counterproductive given the benefits of these ethnic networks (Martén, 2019).

the right to work, allowing refugees to live and work freely rather than live in encampments. Ethiopia has begun initiatives under the Compact, moving towards the right to work and generating positions in industrial sectors for refugees (Türk, 2018). By providing the right to work, host nations can provide refugees more freedom to choose the life they want, while at the same time reaping the economic benefits.

With the multiplicity of responses, varying from expelling refugees to providing economic rights, countries are clearly struggling to craft a consensus model to move forward with. With the number of displaced continuing to rise, the urgency to create sustainable solutions has never been greater. Countries will need to compile the evidence and build a model of refugee integration that works for all stakeholders. Continuing on the current course, of fractured responses and political clashes, is untenable.

Models based on self-reliance, where refugees are able to choose their livelihoods and contribute to the greater economy, offer potential benefits to all involved. Therefore, it is crucial to examine the labour market in contexts that provide the right to work. If there is success, it could be a model for other countries to replicate as they fulfil their obligations to host more refugees. If there are barriers, it would be of vital importance for all to take note and ensure they are addressed to keep the model viable.

South Africa presents a great opportunity to explore this question further. The constitution and subsequent law provide a great deal of rights for migrants, asylum seekers, and refugees. This includes the right to work, meaning refugees are able to forge their own livelihood instead of being confined to a camp. Yet the country is not immune to the anti-migrant sentiment seen throughout the world. Flareups of xenophobia have resulted in disastrous outcomes for refugees and the wider country. This raises questions as to whether barriers of discrimination exist, making self-reliance difficult to achieve. Understanding this question has important implications not just for South Africa, one of the largest hosts on the continent, but for the world. The context can provide not only a model for other countries to find success with self-reliance, but also a warning of where barriers to achieving that success may be. Before that however, it is crucial to understand the legal framework governing refugees' right to work in South Africa

III. How the Right to Work Works in South Africa

South Africa's current policies on immigration, like most things in the republic, grew out of Apartheid. The apartheid regime heavily restricted migration both within and into the country, aiming to benefit the white minority to the detriment of millions of people (Landau, 2006). Immigration to the country, largely European, waned along with the system of white minority rule (Crush, 2011). As the country transitioned to democracy, the proportion of immigrants from other places on the continent increased. The demographics of migrants in a survey by Mattes (2000) provides clear evidence of this, as most European migrants arrived before 1991, while a majority of SADC and 87 percent of non-SADC African migrants came post-1991. With the end of Apartheid came the end of unreasonably restrictive immigration policy.

This shift is no doubt thanks to South Africa's constitution, which is steeped in international human rights law. International documents, such as the United Nations' 1948 *Declaration of Human Rights* and 1951 Convention Relating to the Status of Refugees, informed the new country's constitution. Because the constitution is grounded in those documents, it guarantees many basic human rights, including the right to work. This built the legal foundation for the *Refugees Act*, which explicitly grants the right to work to refugees in South Africa (as required by the 1951 Convention). With the help of international human rights law, the constitution of South Africa moved the country away from a tight migration policy benefiting a small minority to one which benefited wider society and migrants themselves.

But the country has not always lived up to the human rights ideals found in its constitution. Even while implementing the *Refugees Act*, the country continued to follow the apartheid regime's "Last Act," the *Alien Controls Act of 1991*. South Africa did update and open its immigration policy with the *Immigration Act of 2002*, becoming significantly "skills-based." The Act, along with programs like the Joint Initiative on Priority Skills Acquisition, helped induce migration to the country, with skilled Africans outnumbering Europeans for the first time in 2005 (Crush, 2011). Yet this "skills-based" framework often leaves out low-wage earners and is clearly still too restrictive. Rasool and Botha (2014) find a consensus among businesses that immigration policy needs to be relaxed, which is no surprise given the positive fiscal and economic contributions of migrants to South Africa. Immigrants to the country

increase both per capita income and government revenues, with no displacement of native workers[5] (OECD, 2018; World Bank, 2018).

South Africa needs more migrants to boost growth (Levinsohn, 2008), but instead does the opposite, deporting more and more migrants each year (Crush, 2011), often without following the legal process (Landau, 2006).

Unfortunately, the same can be said of the situation facing refugees and asylum seekers in South Africa. There have been persistent efforts to limit the rights of refugees and asylum seekers in the country which have been fought over in the courts. While the Refugees Act explicitly allowed refugees to work, it did not do the same for asylum seekers. Regulations originally prohibited asylum seekers from a number of rights, including the right to education and the right to work[6]. It was not until the courts found that the restriction on the right to work violated the constitutional right to dignity that asylum seekers were allowed to compete in labour markets[7]. More recently, the provincial government of Limpopo tried to shut down businesses started by Somali refugees, requiring the Somali Association of South Africa to go to court to protect their rights. The courts held that asylum seekers and refugees are entitled to apply for licenses for spaza and other shops, ensuring the right to self-employment[8]. Asylum seekers and refugees have had to battle in court to have the government recognize the rights guaranteed to them in the constitution.

The government, reluctant to even provide the right to work, often places onerous regulations on refugees seeking employment. While they cannot impair refugees' right to dignity[9], these burdensome regulations still exist. For example, public roles require permanent residency[10], which means asylum seekers and refugees are excluded (as they are technically temporary residents, despite potentially living their whole lives in South Africa). Private roles are also restricted. Some sectors, like certain engineering or health areas, are completely cut-off from asylum seekers or, if a citizen is not readily available, require any non-citizen to be exceptionally high-skilled, meaning many high-wage sectors are out of reach

[5] The OECD report suggests that displacement is avoided partly due to positive spillovers of new skills brought by new migrants, as well as native-born workers increasing their specialization in their presence

[6] Regulation 7(1)a of the *Refugee Regulations (Forms and Procedures) of 2000*

[7] *Minister of Home Affairs and Others v. Watchenuka and Another*

[8] *Somali Association of South Africa v. Limpopo Department of Economic Development, Environment and Tourism*

[9] *Union of Refugee Women and Others v. Private Security Industry Regulatory Authority and Others*

[10] *South Africa: Proclamation No. 103 of 1994: Public Service Act*

(Kavuro, 2015). There are also regulations, such as the Employment Equity Act and Black Economic Empowerment Act, which seek to give some advantage to previously disadvantaged citizen groups. These acts are necessary, especially as courts have found non-affirmative policies to be potentially discriminatory[11]. Yet they of course exclude asylum seekers and refugees, who are also disadvantaged (though due to state persecution in their country of origin, not due to Apartheid). As Kavuro (2015) explains, this may be a disadvantage for refugees, but would not amount to prejudice. It is an exceptional case stemming from a legitimate benefit to one group, which is allowed under the law and held in court precedent[12]. So, asylum seekers and refugees will have to contend with this policy, along with the other regulations placed on their right to work.

Current developments in policy have also proven difficult for asylum seekers and refugees. Recent amendments to the Refugee Act, which came into effect this year, explicitly erases the automatic right to work for new asylum seekers. Instead, those fleeing persecution must wait and apply for their right to work before entering the labour market. Of course, this flies in the face of the court precedent[13], as well as the human rights principles enshrined in the constitution. Legal challenges are expected, so this may just be a temporary change. Regardless of the outcome in the courts, this change is in line with other amendments proposed in the 2017 White Paper on Immigration. In the document, the Department of Home Affairs proposes implementing a quasi-encampment policy, where new arrivals will have to stay in "Refugee Processing Centers" along the border. Here, asylum seekers and refugees would not even have the right to movement, let alone the right of work. This would represent a further step away from the human rights-based approach of the constitution, and towards a policy of encampment which deprives refugees of their basic rights. While not yet implemented, the White Paper, and other developments, show South Africa moving away from its relatively open system, posing a threat to the right to work.

But even with the right to work, asylum seekers and refugees may have difficulty realizing that right given the difficulties found in the Department of Home Affairs. The slow and backlogged process for asylum applications and permit renewals has been widely reported on. Asylum cases are supposed to be decided within six months, but many refugees

[11] *Harmse v City of Cape Town*
[12] *Minister of Finance and Other v Van Heerden*
[13] *Minister of Home Affairs and Others v. Watchenuka and Another*

have to wait somewhere between three[14] and five[15] years for their case to be resolved. As an example of the growing issue, 2007 saw fewer than 6,000 applications out of over 45,000 decided, increasing the backlog of cases to nearly 100,000 (Landau 2006). In 2019, the backlog grew to roughly 180,000, prompting the Department to seek aid from UNHCR to help clear it. A 2019 audit found it would take nearly 70 years to clear the backlog (Auditor-General 2018). This backlog hurts asylum seekers' and refugee's ability to integrate and compete in labour markets (Mazzocchini, 2008). Without creating an efficient system to decide cases and disseminate documents, the country will never fulfil its legal and moral obligations to asylum seekers and refugees.

IV. Foreign and Displaced Populations in South Africa: Demographics and Economics

The Make-up of Migrants

South Africa is the final destination along a number of migration corridors (Feyissa, 2020), with its demand for labour in agriculture, mining, and services driving it to be the largest net-migrant receiver on the continent (UNCTAD, 2018). According to Stats SA Community Survey 2016, there were 1.6 million foreign-born persons in South Africa, representing 2.8% of the total population of the republic. This is a noticeable, and unexpected, decline from the previous Census 2011, which reported 2.2 million foreign-born persons, making up 4.2% of the population. However, Stats SA suggests that the unusual decline might not accurately reflect the true trends. The report notes that many migrants fear reporting their status as a foreign resident, raising doubts about enumerator capability to collect correct information. Regardless, the report suggests that the number of foreigners in South Africa is small relative to the native population (contrary to popular conceptions outlined in Crush (2013) which suggest the immigrant population rivals that of natives).

Despite the difference in total numbers, the two reports show the same top five countries of origin for 2011 and 2016. Zimbabwe is the number one sender country, with nationals of the country representing nearly 40% of the foreign-born population in South Africa. The

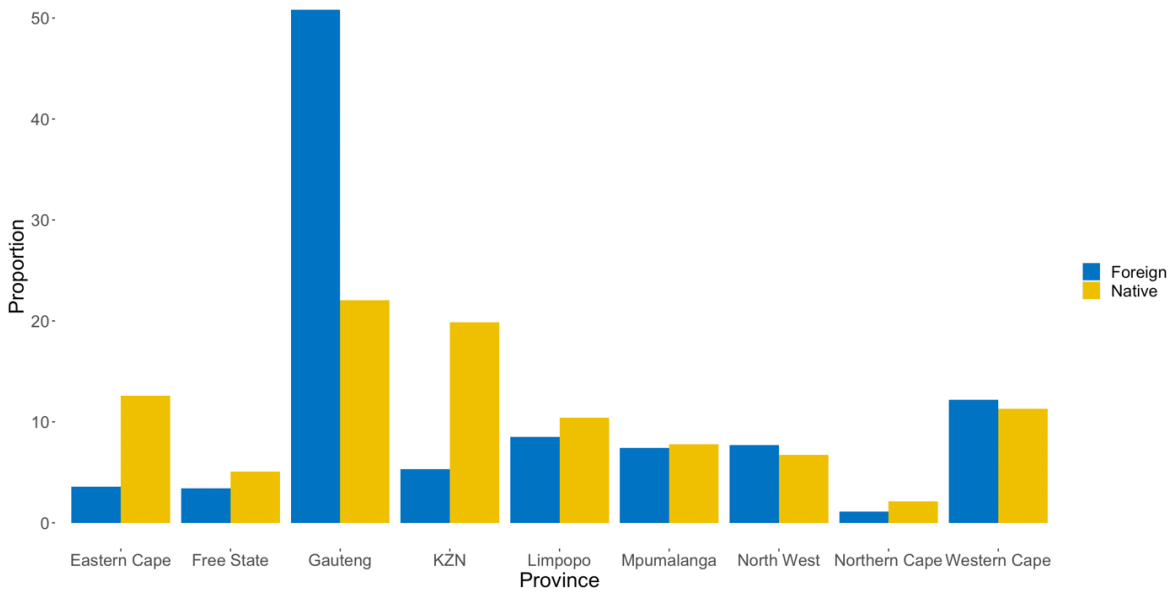
[14] *Somali Association of South Africa v. Limpopo Department of Economic Development, Environment and Tourism*

[15] *Kiliko and Others v. Minister of Home Affairs and Others 2006*

second largest, at 20.2%, is fellow neighbor Mozambique, followed by Lesotho, the enclave kingdom, in third. After the top three, the numbers drop precipitously, with the next largest sender being Malawi, followed by the UK, Eswatini and DRC.

The foreign-born population is unevenly distributed across the country. The majority (50.8%) reside in Gauteng which, despite being the smallest province, is the most populous, accounting for nearly a quarter (24.1%) of South Africa's total population. This means the foreign-born population is overrepresented in Gauteng. For comparison, the next largest province by population is KwaZulu-Natal, which represents roughly 20% of South Africa's population yet hosts only 5.3% of foreign-born residents. Meanwhile, some provinces, such as the Western Cape, host a reasonably proportioned number of foreign-born residents. The breakdown of the foreign and native population is reported in Figure 1.

Figure 1: Distribution of Native and Foreign Populations Among Provinces



Additional information on displaced persons hosted in South Africa is less clear as the government does not regularly publish detailed demographic reports on refugees and asylum seekers. From the data available, it is clear there has been a downward trend in the number of asylum applicants since the peak in 2008/9. In those two years, the Department of Home Affairs received 207,206 and 223,324 applications respectively for asylum, driven mostly by the persecution in Zimbabwe at the time. Applications declined by roughly 100,00 in 2010

and then continued to decline every year (outside a marginal increase in 2014) to reach a low of 18,354 in 2017. The vast majority of these applications tend to be filed in Gauteng, with the rest generally split between Limpopo and KwaZulu-Natal. For example, in 2015, 75% of all applications were in Gauteng with only 15% filed in Limpopo and 9% in KwaZulu-Natal (DHA 2015). However, this is not representative of where asylum seekers finally settle, rather where applications can be filed. For instance, there is no longer a Refugee Reception Office in Cape Town, making it impossible for applicants to submit their claim in the Western Cape. In addition, the government requires applicants to submit their claim in a timely manner once entering the country. As Gauteng is a large transport hub for South Africa, it would make sense that a large number of applicants would arrive and file in Pretoria.

Data on countries of origin for asylum seekers and refugees is similarly sparse and can change year by year depending on levels of persecution in origin countries. As previously mentioned, the large peaks in 2008/9 were driven by Zimbabweans fleeing turmoil in their country. Their place as the top seekers continued through to 2015, where 17,785 nationals filed claims, with the next sending country of Ethiopia with just over half as many claims. However, this does not represent the demographics of displaced persons who are actually *granted* refugee protection after a refugee status determination. For example, while there were 17,784 registered arrivals from Zimbabwe, only 3 Zimbabweans were recognized as refugees (with 0 approvals coming from the otherwise busy Pretoria office). In contrast, 1,001 Ethiopians were granted refugee status. The top countries for refugee protection look quite different from the top countries for asylum applicants, as reported in Table 1. Hence, it is difficult to determine the demographic information for all displaced persons actually hosted by South Africa.

Table 1: Top Sender Countries, Asylum v Refugee

	Top Countries: Asylum Applications	Top Countries: Refugee Status Granted
1	*Zimbabwe*	*Ethiopia*
	17785	1001
2	*Ethiopia*	*Somalia*
	9322	619
3	*Nigeria*	*DRC*
	6554	614
4	*DRC*	*CongoB*
	6355	190
5	*Bangladesh*	*Eritrea*
	3331	44

Understanding the geographic and demographic breakdown of the foreign and displaced populations are relevant to this study for two main reasons. Firstly, the uneven distribution of the foreign-born population across the provinces may result in different levels of discrimination depending on where they are located. The labour market in Gauteng, where the foreign population is vastly overrepresented, may provide different opportunities than the market in KwaZulu-Natal, where the foreign population is vastly underrepresented. Secondly, it is possible any difference in the different demographic makeup of the foreign and displaced populations may contribute to any disparities in outcomes. It is important to keep both these issues in mind when exploring discrimination in this domain.

Income and Livelihoods: Is There a Gap?

The OECD/ILO issued a report in 2018 which provides a thorough overview of the differences in native and foreign-born employment and income outcomes in South Africa. Using data from the 2011 Census, the report shows that the labour market in South Africa is highly unequal along racial divisions, with worse outcomes for both Black natives and Black migrants. All Black workers face lower levels of employment and higher levels of unemployment than their non-Black counterparts. For instance, the unemployment rate for Black South Africans was nearly double that of all other South Africans in the 2011 Census. The same was true for foreign workers, with Black foreign-born workers facing an unemployment rate almost double that of other foreign-born workers. Black workers are also underrepresented in high-skill professions, instead being relegated to medium- and low-wage work. Regardless of national origin, racial inequity runs rampant in South Africa.

But turning to the comparison of native versus foreign workers, it appears foreign-born workers face better rates of employment. Whilst native workers saw a 6-point drop in the unemployment rate between the 2001 and 2011 Census, unemployment remains very high at 29.8%. Foreign workers saw a slight uptick in unemployment between the two Censuses but ultimately face a dramatically lower rate of 22.8%. The OECD/ILO report explains that foreign-born workers tend to be younger than their native counterparts and are more sensitive to labour demand. This helps them be nimble, finding employment opportunities in high-growth sectors that have high demand for this labour force. Foreign workers are also more likely to be self-employed, starting businesses instead of finding wage

work. In addition, the report notes that this higher employment rate is partially driven by necessity, with foreign workers needing to work to support themselves (as they have less access to safety nets or social support). It is also important to note that many visas require an employer sponsor, meaning employment is often a condition for being in the country, constructing the higher employment levels seen among migrants. Overall, the employment prospects for foreign workers appears promising.

But it comes at a cost, primarily through income. While native South Africans saw their incomes rise 24% between 2001 and 2011, foreign-born workers saw their incomes *fall* by 32%, indicating a deteriorating situation for migrants. The OECD report runs a regression analysis on the census data to estimate the difference in incomes between natives and foreigners. Their results are recreated in Table 2. There is a 5% income gap, with foreigners earning less than their native counterparts, even when controlling for important differences such as education level and experience. When comparing low- and middle-skilled jobs, the gap grows significantly. Foreign workers earn nearly 20% less in "low-skill" occupations and around 10% less in "middle-skill" occupations.

Table 2: Income Gap Between Foreign and Native Workers in South Africa[16]

	All Workers	Low-Skilled Occupations	Mid-Skilled Occupations	High-Skilled Occupations
Foreign-born	-0.05^{***}	-0.19^{***}	-0.13^{***}	-0.01
	(0.00)	(0.01)	(0.01)	(0.00)
Time and Area Fixed Effects	X	X	X	X
Num. obs.	$1,551,160$	$598,945$	$539,802$	$373,844$

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

These gaps are potential underestimates, as the controls are downstream from discrimination. For instance, if migrants are barred from certain high-paying sectors or are provided fewer educational opportunities in the host country, controlling for these factors hides discrimination. If the regression were to show no gap, some might say that there is no discrimination, suggesting any apparent difference is born from migrants "choosing" lower paying fields or obtaining less education when in reality discrimination is the cause. The analysis in the OECD/ILO makes it clear that foreign workers, when answering the call of high-demand sectors, are rewarded with lower wages than native workers.

[16] Source: OECD/ILO (2018)

There is unfortunately no good representative survey data that focuses specifically on refugee and asylum seeker employment and income outcomes. One can infer, based on the data on foreign-born workers, what those indicators might look like. The different factors in forced migration, as opposed to voluntary migration, would suggest asylum seekers and refugees should have worse outcomes in South Africa. Voluntary migrants choose to make the journey, suggesting they move as an opportunity. Labour demand, as previously mentioned, is one of the biggest drivers of voluntary migration to South Africa. So, these migrants come to South Africa because they sense economic opportunity. They can also plan ahead, asking relatives and acquaintances in country for information, building helpful networks, and doing their research on employment prospects. They can also find employment *before* they move to South Africa, which is often required for visa purposes. The economic literature also suggests that people who emigrate do so when they have higher incomes (Clemens, 2020), so voluntary migrants will most likely have some financial resources available to them. This is especially so as voluntary migrants emigrate from functioning states, which tend to have better economic outcomes than failed or conflict-prone ones. Asylum seekers, on the other hand, do not choose to move but are rather forced to. They may have little to no knowledge of the host country, have no ties to the host country, and will not have prepared for a life or livelihood in the host country. They may also have very little resources, especially if what they had was lost or needed to be abandoned when they fled their country of origin. Asylum seekers may turn up in South Africa with no money, no family, and no immediate prospects for a future. Because of this, it is likely forced migrants face worse employment and income outcomes than their voluntary counterparts.

Beyond speculation, there is some cursory evidence to back this assertion up. Based on a proprietary dataset of asylum seekers and refugees in the Western Cape, the employment and wage indicators of displaced persons are much worse than for other foreign-born migrants. The dataset is based off administrative data from an NGO in Cape Town which provides services to asylum seekers and refugees[17]. The dataset has records for 3,607 clients who completed an intake at the NGO during South Africa's COVID-19 lockdown in 2020. The records detail employment and wages *prior* to the lockdown, so should reflect the realities

[17] Use of this data was approved by the UCT Commerce Ethics Committee (REF: REC 2020/09/002) as well as the board of the NGO.

for displaced persons before the sudden economic downturn. This should make these numbers somewhat comparable to the StatsSA data, though of course these are biased downwards. These records are of clients who sought some form assistance (psychosocial, financial, etc.) during lockdown, so may reflect people who were originally in lower wage work susceptible to the economic shock. So, while this data cannot be taken as representative of the wider displaced population hosted in South Africa, it can provide at least some insight where official data lacks.

The indicators constructed from this data set are worse for forced migrants than both South African citizens and voluntary migrants. Only about 54 percent of households reported having a member who was employed before lockdown. Individuals who were able to work faced meager wages. Before lockdown, the mean monthly earnings among these asylum seekers and refugees who made any non-zero income was R3,695. This is far below that of foreign-born workers in 2011, and drastically below the average monthly earnings of R19,440 for South Africans in February 2020. Average household income was not much larger at R4,763, again far below South African households. While this data may not be completely representative of the displaced population throughout South Africa, it does point to the potential challenges faced by refugees and asylum seekers in forging a livelihood in the republic.

The existence of these large gaps in the indicators between the foreign and native populations of South Africa begs the question of how much discrimination plays a part. It is a distinct possibility that discriminatory practices in hiring may cause foreign residents to lose out on job opportunities or be forced into lower wage work. With the presence of these disparities, it is crucial to understand discrimination as well as the role it plays in the South African labour market.

CHAPTER 2 – Discrimination: Theory, Evidence, and a Field Experiment

V. Discrimination: Theory, Evidence, and the South African Context

The foundation of contemporary economic conceptions of discrimination is Becker's (1971) *The Economics of Discrimination*. In this seminal work, Becker (1971) lays out an economic model of discrimination where some employers have a "taste" for discrimination.

In this model, certain employers are willing to forego profits in order to discriminate against a group of people (even if their productivity is equivalent to other groups, an act that lacks what Becker calls economic "objectivity"). The benefit they receive from discriminating (a "psychic gain") outweighs the economic costs. This maps to the colloquial idea of discrimination, where an employer refuses to hire someone because of their identity such as race. Different employers may have different tastes for discrimination, with some willing to give up greater profits to avoid hiring certain groups. Because of this, firms that do not discriminate can gain an edge over discriminators by hiring based solely on productivity and avoiding the associated cost. This suggest that discriminating firms, who are losing out on profits, will be uncompetitive compared to non-discriminating firms, eventually being pushed out of the market so long as they continue to discriminate. With Becker's model, economic competition eliminates discrimination in equilibrium, allowing every worker equal opportunity regardless of their identity.

Of course, this outcome is not borne out in reality, with discrimination along a number of lines present in many labour markets and requiring state intervention to overcome. One reason for this is that real world labour markets do not match the competitive nature of Becker's model. The current literature in labour economics points to these markets being monopsonies (Azar, 2020) which, in addition to dramatically reducing worker's share of value added (Dube, 2018), can allow for discrimination to persist. But if labour markets were more competitive, Goldberg (1982) demonstrates how large discriminatory gaps would still endure even in the long run. It is clear the vision of market forces driving out discrimination is entirely too optimistic.

But even if taste-based discrimination were to dissipate, gaps in employment could still exist due to *statistical* discrimination. Whereas the Becker (1971) model relies on employers having explicit distaste for one group, statistical discrimination can occur even if employers have no preference for one group or another. This form of discrimination occurs when employers make inferences on candidates' qualities based on their group identity. Employers do not have complete information about their candidates, so will have to make assumptions about qualities not demonstrated through a CV. If there are group differences in a population (or perceived group differences), employers may fill gaps in their knowledge of candidates based on that aggregate data. Those who come from social groups with "worse" aggregate indicators will be discriminated against by employers assuming they match the wider group.

Beyond taste versus statistical discrimination, it is also important to understand the difference between in-group "nepotism" and out-group "discrimination." Becker (1971) defines nepotism as a benefit given to an in-group member, whereas discrimination is a penalty given to an out-group member. For example, Fershtman and Gneezy (2005) run an experiment where they find the Walloons and Flemish in Belgium give no special treatment to their own group over anonymous players but punish members of the other group. This contrasts with orthodox Jews in Israel, who give no penalty to secular individuals but provide benefits to other orthodox Jews. The out-group penalty in Belgium would be categorized as discrimination, whereas the in-group benefit in Israel would be categorized as nepotism. Becker (1971) argues that these are empirically indistinguishable, with the outcome (one group benefiting over another) the same. However, Fershtman (2005) shows that the distinction has important policy implications, with rules aimed at deterring discriminatory behavior having different efficiency and equity outcomes depending on which type is present[18].

It is important to note that regardless of whether the discrimination is taste, statistical, or nepotism, it could result even when an individual has expressed no explicit preference for one group over another. People may publicly say, and even internally believe, that they hold no pre-conceived judgements about different social groups. However, a growing body of literature has provided compelling evidence that many human behaviors can be explained by *implicit* bias. This bias arises in individuals without even their conscious knowledge, which can result in discriminatory behavior even if none is intended. A meta-analysis by Greenwald (2009) of over 100 studies shows implicit bias tests have meaningful prediction power for human behavior. Mullainathan (2005) explores a number of economic decisions which are prone to implicit bias, including in hiring. So even in contexts with low levels of out-group distaste, discrimination is possible.

But South Africa appears to not be one of these contexts, as it is no exception when it comes to explicit discrimination. Crush (2013) provides survey evidence of South Africans' attitudes towards migrants. The results show rather high levels of xenophobia throughout the country. The majority of the population believes foreigners come to commit crime and steal

[18] For example, if a market requires trust or cooperation, anonymity rules will increase efficiency in the case of discrimination as individuals will treat anonymous individuals as a member of their own group. However, in the case of nepotism, anonymity rules may result in a tradeoff between equity and efficiency.

jobs, and over a quarter believe all migrants, regardless of documentation status, should be deported. These attitudes extend towards refugees as well, with only a small minority of citizens believing refugees should be granted legal protection or basic rights. Interviews conducted by Bolzoni (2009) explores how these attitudes are not just abstract but tangible forces in daily life. Since they are seen as people who "take away jobs, women, opportunities, resources," refugees face hostilities, with all interviewees reporting personally knowing someone who was threatened or killed as well as living in daily fear of attacks against them or their property. However, little has been done to study whether these negative attitudes and interpersonal conflicts bleed into the wider labour market, creating barriers of entry for refugees.

There have been numerous studies exploring discrimination against asylum seekers and refugees in South Africa outside of labour markets. Landau (2006) compiles evidence of blatant discrimination in accessing basic services. Refugees and asylum seekers are prevented from enrolling in schools, turned away at hospitals, and targeted for extortion by police and government officials. Beyond services, Gastrow (2013) highlights through interviews with both foreign and native businessowners how discrimination affects refugee livelihoods. Somali refugees are forced to reduce investment, raise prices, and increase security in their shops as a result of backlash against them from local competitors. Somali shopkeepers who become too competitive are significantly more likely to be targeted for violent crime (Piper, 2016)). With discrimination present in nearly every facet of life for refugees, there is a foundation to suspect it may be present in labour markets as well.

The most extensive work on labour market discrimination against foreigners in South Africa comes from Abel (2017). The author uses page views on GumTree, the largest classified page in the country, as a proxy for job inquiries[19]. The author finds foreigners receive up to 20% fewer page views than native South Africans and must expand their search area 21% further[20] (a large tax in a country with high transport costs) due to taste-based discrimination. Abel (2017) also finds foreigners who signal being in possession of documentation receive 8% *fewer* views than those that don't, suggesting South Africans look for applicants with less

[19] GumTree allows jobseekers to post a profile for potential employers to view. Abel (2017) uses pageviews on these profiles as proxy for offers in their analysis.

[20] The spatial analysis is possible as GumTree allows jobseekers to state which area they are looking for work as well as their area of residence.

bargaining power[21]. However, there are a number of limitations to the study. Of course, while able to control for many factors, the author is unable to exogenously set citizenship status (and must rely on self-reported nationality). In addition, the study looks at pageviews as a proxy for inquiries, which is itself already a proxy for job offers. In addition, it does not look specifically at refugees and asylum seekers, who are legally guaranteed the right to work (whereas it is unclear whether a foreign applicant has a legal right to work). So, while the study makes large, meaningful contributions to this area, it leaves scope for more work to be done.

It is crucial to understand the magnitude of discrimination against asylum seekers and refugees in South African labour markets. Large levels of discrimination may point to the need for more affirmative policies, like the EEA, for refugees[22]. It is also important as South Africa is one of the few contexts on the continent which does not currently follow an encampment policy (Makhema, 2009). Instead of relying on external organizations to support refugees (which often results in sub-par conditions), South Africa provides no material support, opting for self-reliance instead by providing the right to live and work. If discrimination makes self-reliance difficult, it poses a threat to non-encampment approaches not just in South Africa, but across the world.

VI. Methodology

One way to uncover the magnitude of discrimination against refugees and asylum seekers is a correspondence study. These types of field experiments, in which fake inquiries are sent to job postings, have become a major tool in economics for exploring discrimination in a number of markets (Bertrand, 2016). Several correspondence studies have been used to examine discrimination in labour markets by randomizing inquiries to signal age (Neumark, 2019), race (Bertrand, 2004), ethnicity and nationality (Zschirnt, 2016) to determine the causal effects of these identities or characteristics. These studies have also been used in online marketplaces (Kuhn, 2013), like GumTree. This type of study has been little employed

[21] This interpretation is based on evidence from additional survey data

[22] South Africa may have a legal obligation to do so. Discrimination against another person is illegal under Section 9(3) and 9(4) of the Constitution. In addition, Section 187(e) of the Labour Relations Act as well as section 6 prohibits unfair discrimination.

to examine labour market conditions for refugees, with most quantitative research focusing on the effects of refugee entrance on native populations (Mayda, 2017; Esen, 2017). There is a clear need for more research into labour market conditions for refugees, which a correspondence study can do.

A correspondence study offers many benefits over a traditional audit study. An audit study involves sending live actors to respond to job postings. This is obviously far more costly and time consuming to carry out. In addition, it leaves open the possibility of bias stemming from the fake applicants' (intentional or unintentional) behavior in the interviews. By contrast, correspondence studies allow complete control over what information is presented to the employer. By randomizing attributes on digital inquiries, experimenters can determine the causal impact of specific attributes on callback rates (a proxy for job offers) for a fraction of the cost of an audit study.

Of course, there are some limitations to correspondence studies. They only use response rates as a proxy for job opportunities. However, this has been seen as a reliable proxy, especially as a meta-analysis by Riach (2002) claims 90% of discrimination occurs at this first stage (though a meta-analysis by Quillian (2018) finds discrimination may be even greater in the job offer stage). Though not a complete audit of the employment process, a correspondence study offers great insight into discrimination, including against refugees and asylum seekers in the labour market.

A larger concern for correspondence studies comes from Heckman (1998), which casts doubt on the interpretation of differences in callback rates as discrimination. Heckman posits that because the experimenter has no information on the variance of unobservable characteristics of applicants, they will not be able to claim that the resulting difference in callback rates is due to discrimination. In Heckman's critique, employers follow a threshold model of hiring where they call a candidate back for an interview if they are likely to meet a threshold level of quality. These employers determine if someone is likely to pass this threshold based on observable characteristics (what they can see from the inquiry) and assumed unobservable characteristics. In a correspondence study, the observable characteristics are set equal, so the difference in callbacks is claimed to arise from employers statistically discriminating against one group, assuming their unobserved characteristics are lesser quality.

However, the same result could occur even if employers assumed equal quality in unobservable characteristics if the *variance* of those characteristics differ. If both applicants are low quality candidates, then they could only pass the threshold if their unobservable characteristics are potentially high quality. Even if the group means for unobservable quality are equal, if one group has a higher variance in unobservable characteristic quality, then there is a chance they could be pass the threshold, resulting in a callback. If the other group is tightly bound around the mean, with low variance, then there is no chance of a callback, as their unobservable characteristics are unlikely to allow them to pass the threshold. Here, equal candidates face differing callback rates even when employers assume equal unobservable characteristics. Since it is unclear if a difference in callback rates is due to discrimination or this phenomenon, Heckman contends the results of correspondence studies leave discrimination undefined.

Of course, this would also amount to the same discrimination, just moved from one place (mean) to another (variance). It is what Neumark (2012) calls "second-moment" discrimination. It seems unlikely that an employer would be able to make an accurate determination of the variance of characteristics among different groups and then apply this to a hiring situation. This would be especially so for small or informal employers, such as those that post on GumTree, who do not gather and analyze large pools of applicants or might not have access to representative surveys of the labour population. Inferences of the variance of characteristics within and across groups would likely be based on prior assumptions or anecdotal experience, or at the very least marked with bias. Even if employers could make accurate estimations of variances, and differences did exist, making hiring decisions based on this information would still be statistical discrimination. Employers would be making decisions on applicants from assumptions based on their group identity, not the applicants themselves. In this regard, the Heckman critique does not necessarily place doubt on discrimination itself, but where it comes from.

Nonetheless, it is important to address the Heckman critique not only because it is widely applied to correspondence studies, but because differing variances could bias the results in either direction as well. For example, take an experiment to test the difference in callback rates between Black and non-Black applicants, using applicants with observable qualities below the threshold. If employers do not discriminate between applicants, but Black applicants have a higher variance, the results could suggest discrimination *in favor* of Black

applicants when none exists (or, if the variance for non-Black applicants is high instead, the reverse). In a scenario where discrimination does exist, with employers assuming lower quality among Black applicants, a higher variance among the group could bias the results to indicate *no discrimination* when it very much does exist (again, if instead the variance is higher for non-Black applicants, the reverse). Finding a solution for the Heckman critique is vital to uncover non-biased estimates of discrimination.

Luckily, Neumark (2012) offers a solution to this critique, allowing researchers to uncover unbiased estimates of discrimination. By adding randomized skills to inquiries which shift the probability of a callback, researchers can perform a number of robustness checks to review their results for bias and recover an unbiased estimated of discrimination (formal definitions behind the process are available in Neumark (2012), which outlines the econometrics behind the method in detail). This is a change from conventional correspondence studies, which seek to create perfectly identical resumes outside of the main characteristic of interest. This conventional approach does not allow researchers to utilize the Neumark (2012) solution, meaning an unbiased estimate cannot be obtained. Recent correspondence studies, such as Neumark *et al* (2017), have successfully implemented this approach of using randomly selected skills, producing robust results demonstrating discrimination in labour markets. With these improvements, it is possible to run a correspondence study and accurately measure the magnitude of discrimination.

VII. Design

I conduct a correspondence study to determine the magnitude of discrimination in the South African labour market against refugees and asylum seekers.[23] I send out four similar inquiries to job advertisements on GumTree, with one signaling a native applicant, one

[23] This design was approved by the UCT Commerce Ethics Committee (REF: REC 2020/09/002). As this study includes human subjects, it is crucial to understand the risks posed by the research. The fake inquires have the potential to crowd out other jobseekers. In addition, the fake resumes may cause businesses to waste time in reaching out to fake candidates. The impact of these harms is quite small, as the fake resumes will be a marginal additional to the pool of jobseekers. The risk is outweighed by the potential benefit of measuring labour market discrimination, which could ultimately be used to reduce harmful barriers.

signaling foreign, one signaling refugee or asylum status, and one with no signal. I compare the rate of callbacks to determine the causal effect of being a foreigner or displaced persons on receiving a positive response. The inquiry with no signal (labeled "ambiguous") provides insight into whether any difference in callbacks is due to in-group nepotism or out-group discrimination (Fershtman and Gneezy, 2005). While the 2016 StatsSA Community Survey finds foreign residents make up only a small fraction of the population, Crush (2013) shows that the perception of the proportion of foreigners in South Africa is far off from reality, with the population believing the number of foreigners is on par with natives. In addition, jobseeker profiles on GumTree show a fairly even mix of both foreigners and natives.[24] Therefore, an applicant with no signal is likely to appear as ambiguous to employers. This ambiguous applicant will provide evidence on whether gaps in callbacks are due to in-group nepotism or out-group discrimination, helping to inform policy responses. Foreign and displaced inquiries also randomly signal legal documentation status to uncover whether going through the arduous process to obtain a legal permit adds value to jobseekers' prospects.

There are six inquiry templates that are randomly distributed across the four inquiries. They are similar enough to ensure no template affects the callback rate (of course, this is controlled for in the analysis), but different enough to ensure employers do not uncover the applicants are sent from the same person[25]. The inquiries are tailored to the location of the job (to remove any signals that would emerge from candidate location) and job category (e.g. inquiries to advertisements for delivery drivers mention the applicant is an experienced driver). Each inquiry is also assigned one of ten names (5 male and 5 female, with gender held constant across each set of inquiries)[26]. These names are common across the country according to census data, which should remove any signal stemming from candidate background (e.g. employers may believe candidates from KwaZulu-Natal possess different skills than those from the Western Cape). They are also similar enough that they would not signal any socioeconomic differences in the candidates, such as race or religion. This will ensure any difference in callbacks will be due to foreign status, not socioeconomic background or other demographic information.

[24] For example, at a randomly chosen time the most recent 50 profiles posted to GumTree was a mix of 26% native, 30% foreign, and 44% ambiguous candidate profiles.
[25] The templates are available in the appendix
[26] The full list of names, broken down by gender, are available in the appendix

Skills

The inquiries also signal "skills" which are chosen at random. This helps determine if the returns to skills are less for refugees and asylum seekers, which uncovers additional discrimination as well as different incentive structures for displaced persons. The skills are drawn randomly from a general attribute list as well as from a sector specific list, with each skill equally likely to be picked. This process also provides the ability to overcome the Heckman critique laid out in Heckman (1998). By randomly assigning skills, I am able to apply the solution in Neumark (2010) and recover an unbiased measure of discrimination.

Varying the skills also helps to uncover whether any difference in response rates is due to taste-based or statistical discrimination. Employers do not have compete information on applicants, so may infer candidate quality based on their assumptions of their group identity. If employers believe that refugees are generally lesser candidates, without seeing information on the inquiry to correct that belief, they will "statistically" discriminate against those applicants. But if employers are "statistically" discriminating, we would expect response rates to converge as more information about candidates are revealed (replacing their discriminatory assumptions). Abel (2017) finds that rates do not converge as applicants reveal more positive information and in fact *diverge*, as more information benefits native South Africans while doing nothing for foreign applicants. By randomly assigning two *or* four skills, I am able to further explore the results in Abel (2017) by determining if higher-information candidates face fewer obstacles (and hence if results are driven by tase-based or statistical discrimination)

There are five general skills available to applicants. The first is having available references, an application material often asked for in advertisements and proven to increase callback rates in South African (Abel 2020). The second is being multilingual, a skill that is valuable in a country with nine official languages. The third is having completed matriculation education (for foreign applicants, it is specified to be a South African matriculation education so as to remove any discount employers might place on matriculation education from a foreign country). The fourth skill is correct spelling throughout, which removes two spelling errors that are placed by default in job inquiries. The fifth and final general skill is having

"sober habits," a trait commonly listed as a requirement in advertisements on GumTree. "Low-skill" applicants are assigned one skill "high-skill" applicants are assigned two skills.

In addition to the general skills, there are four job-specific skills for each job type. For domestic workers, these are having their own supplies, having commercial cleaning experience, having a flexible schedule, and being comfortable around families. For retail workers, they are being familiar with registers, having experience handling inventory, earning a customer service award, and being clean and presentable. For hospitality, the skills are being clean and presentable, being friendly and outgoing, earning a customer service award, and being flexible in their role. Skills in the beauty category are different depending on whether the job is for a hairdresser or nail/beauty technician. For hairdressers, the skills are being familiar will all hair types (i.e. comfortable with Black or Caucasian hair), being able to work on both men and women, being able to do hair treatments, and being familiar with both natural and artificial hair. Nail/Beauty techs skills are being familiar with different nail types, being able to do nail art, being able to do lash treatments as well, and having existing clients. Finally, driver skills are having no accident history, being a careful drive, having a necessary license, and being able to keep the vehicle clean[27]. Each applicant inquiry is assigned either one or two of these skills, depending on the "skill" level of the applicant.

Data Collection

I collect entry-level postings from the five previously mentioned categories found on GumTree. They are Beauty (e.g. hairdresser, nail tech), Driving (e.g. delivery driver, Taxify driver), Hospitality (e.g. waiter, food runner), Housekeeping (e.g. domestic worker, cleaner), and Retail (e.g. cashier, shop assistant). These job categories are likely areas for refugees to find work, especially as displaced persons are often legally blocked from "high skill" professions. These categories were also the most prominent within the proprietary dataset on refugee jobs, with beauty and driving being two of the largest. This improves validity for the study, with results likely to map onto the real job search experience of refugees in South Africa. In addition, these categories have numerous postings each day, allowing for a large sample.

[27] The full list of skills, broken down by category, is available in the appendix

In order to minimize any selection bias, I follow a systematic process in gathering job postings from GumTree. I collect all postings in each job category which provide a WhatsApp number. This ensures I do not pick and choose postings arbitrarily or in a way which might (even unintentionally) bias the results. The use of WhatsApp saves needing to change inquiries into specific formats required by resume submission portals, which could result in ad-hoc changes to inquires that affect results. It also reduces the need to add attributes traditionally included in resumes, such as exact address or resume style, which may unintentionally affect callback rates. Selection bias from using posts which ask for a WhatsApp message should not affect the results, as job ads on GumTree commonly ask applicants to reach out via WhatsApp, and often specifically require WhatsApp to be the only method of contact. This is not surprising, as 80% of job seekers employed through GumTree are working on a verbal contract, with 95% hired by a private household, according to Abel (2017). This should hold especially as inquiries are sent to postings for low-wage work, such as cleaners and hairdressers. I also set a predetermined sample size, as collecting data until an arbitrary point at which differences become statistically significant would be a threat to the design. This process was carried out from September through December 2020.

Coding

The coding process is also designed to eliminate any bias. Responses are coded as a negative response (e.g. applicant told position is filled), positive response (i.e. invited for an interview), ambiguous interview (e.g. applicant is asked to provide additional information), or as an "other" response (i.e. an automated response). While the positive and ambiguous responses are coded differently, they are pooled together for any analysis of callback rates. This ensure that results do not occur due to the author (even subconsciously) coding similar, borderline responses (e.g. "I will venture to provide you a time for an interview later this week" could be construed as positive or ambiguous) differently from one group to another. Therefore, any response that is not negative or "other" is treated as a positive for analysis.

VIII. Econometric Specification

The main specification for the study is:

$$y_i = \alpha + \beta_1 AMB + \beta_2 FOR + \beta_3 DIS_p + \gamma X_i + \emptyset_j + time_t + e_i$$

I regress a binary positive response variable, y_i, on a vector of variables, X_i, which includes covariates such as "skills" and other controls such as message template number, whether the inquiry was the first to respond to the advertisement, and other attributes. I also use a set of location dummies, $\emptyset_j$, to control for the province in which the job is advertised as well as a vector of variables, $time_t$, to control for month, day of the week, and time of day of application. The variable AMB indicates an ambiguous applicant while FOR indicates a foreign applicant. The main variable of interest is DIS_p which is a dummy indicating whether the inquiry signals the applicant is a displaced person (refugees and asylum seekers pooled). The coefficient β_3 estimates the causal impact of being a refugee or asylum seeker on response rate and indicates how less likely refugees or asylum seekers are to receive a positive response. This regression is run in a few variations with or without controls to see the impact on the coefficient of interest.

Other specifications are run to gain further insights, such as:

$$y_i = \alpha + \beta_1 AMB + \beta_2 FOR + \beta_3 REF + \beta_4 ASY + \gamma X_i + \emptyset_j + time_t + e_i$$

In this case, I regress positive response on two separate indicators, one for refugees (REF) and one for asylum seekers (ASY). Instead of being pooled into one dummy variable, these variables are kept separate to help uncover if there are differing penalties for refugees and asylum seekers. While refugees may face discrimination, asylum seekers might be further penalized because their legal status could be revoked. Employers may avoid asylum seekers to guard against losing employees unexpectedly. Inversely, employers may actually hire asylum seekers *because* of their less stable legal grounds as it makes them more exploitable. In that case, refugees may face larger response gaps, as their access to legal recourses for exploitation discourages employers from hiring them.

I also run the same specifications with an added dummy variable representing explicit mention of legal status and holding of a section 22 or 24 permit. This estimates the causal

impact on response rates from signaling legal status. This furthers our understanding of the value of legal status and permits for refugees in the labour market.

Interaction is tested between refugee and asylum seeker variables and the various skills employed in the inquiries. This will estimate the value of these skills for refugees and asylum seekers versus native South Africans. If employers discriminate against refugees and asylum seekers, they could also discount their skills. This would create further barriers for refugees and asylum seekers and perhaps change their incentives to invest in these skills. One could imagine these estimates to be positive however, if employers understand refugees face high obstacles to acquiring skills or education. By obtaining these skills despite the barriers, refugees may look more appealing (harder worker, higher achiever, etc) than natives who only have similar skills despite the lower barriers. However, this situation seems unlikely, with the expected effect to be negative or neutral. These interactions will also form the basis of the analysis used in the solution for the Heckman critique proposed in Neumark (2012).

I also explore sector and location specific effects. The specifications above are run but only including inquiries in the desired job category or province. This helps uncover whether discrimination is larger in certain areas or positions. If so, it would point to which areas might need more policy prescriptions and help inform refugees and asylum seekers where they might want to focus their job search. Abel (2017) finds greater discrimination in positions with closer "proximity" to employers. This suggests employers may discriminate against refugees and asylum seekers more if they have to interact with them, and hints at taste-based discrimination.

IX. Data

The sample in this study represents 3,192 inquires, evenly split between native, ambiguous, foreign, and displaced applicants. This means there is a sampling ratio of 1 for all the main comparisons of interest between applicant types. The exception to this is when decomposing displaced applicants, with refugee and asylum seekers having a sampling ratio of roughly 0.5 when separately compared to native applicants[28]. This also means the sampling

[28] Because displaced inquiries signalled refugee or asylum seeker randomly, there is a slight difference in sampling ratios for the two, but both tightly bounded around 0.5.

ratio is different when pooling all foreign applicants together, as there are 1,596 total foreign applicants in the sample. The full numbers and summary statistics are reported in Table 3.

Table 3: Inquiry Characteristics – Summary Statistics

	All	Native	Ambiguous	All Foreign	Foreign (Not Displaced)	All Displaced	Refugee	Asylum Seeker
No. of Inquiries	3192	798	798	1596	798	798	394	404
sector								
Beauty	0.37	0.37	0.37	0.37	0.37	0.37	0.35	0.39
Driving	0.32	0.32	0.32	0.32	0.32	0.32	0.35	0.30
location								
Western Cape	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
KwaZulu-Natal	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.26
Gauteng	0.29	0.29	0.29	0.29	0.29	0.29	0.30	0.29
gender								
Female Names	0.48	0.48	0.48	0.48	0.48	0.48	0.45	0.50
Male Names	0.52	0.52	0.52	0.52	0.52	0.52	0.55	0.50
skills								
High-Skill	0.52	0.51	0.52	0.52	0.53	0.50	0.50	0.51
Low-Skill	0.48	0.49	0.48	0.48	0.47	0.50	0.50	0.49
References	0.31	0.30	0.29	0.32	0.33	0.31	0.28	0.34
Multilingual	0.31	0.33	0.32	0.30	0.29	0.32	0.35	0.28
Education	0.31	0.29	0.33	0.30	0.30	0.31	0.30	0.31
Spelling	0.29	0.28	0.28	0.30	0.32	0.27	0.28	0.27
Sober	0.30	0.31	0.29	0.30	0.29	0.30	0.29	0.30
documentation								
Explicit mention	–	–	–	0.52	0.53	0.50	0.48	0.52

All decimals represent proportion of inquires, with 1 = yes

The sample of job postings is unevenly spread across the republic's nine provinces. The postings are concentrated in the Western Cape, Gauteng, and KwaZulu-Natal, bunching around Cape Town, Johannesburg/Pretoria, and Durban. This is unsurprising, as these three provinces are the largest contributors to South Africa's GDP, with the three urban centres being hubs for economic activity[29]. The province with the fourth most job postings is the Eastern Cape, which also has urban centres such as East London and Port Elizabeth. The remaining provinces only have a handful of postings, reflecting their relatively smaller economic contributions to the country's overall GDP.

The two biggest job categories represented in the inquiries are beauty and driving. This is commensurate with the dataset on job categories for refugees, where positions in beauty and driving are by and large the most commonly held. The three remaining categories, housekeeping, hospitality, and retail, all make up similar proportions of the remaining sample. The relative size of beauty and driving show these categories importance for jobseekers searching for low-wage, entry level work. Beauty salons, from container shops to high-end

[29] According to StatsSA, Gauteng contributes 35% to GDP, KwaZulu-Natal 16%, and the Western cape 14% (all over represented)

parlours, are an ever-present sight on most South African streets while driving work has become increasingly common with the rise of e-commerce platforms such as Takealot and Uber. The abundance of driving jobs in the sample may also reflect the time period of collection, which took place during the COVID-19 pandemic. With a (albeit loose) national lockdown in place, many brick and mortar stores were forced to transition towards online marketplaces in order to survive. In theory, this would lead to a decline in demand for in-store labour (traditional retail and hospitality roles[30]) and an increase in demand for transportation workers to deliver goods sold online. Regardless of the shifts brough by the global pandemic, driving work, as well as beauty, is a large area for low-wage work in South Africa.

X. Results

Table 4 presents the response rates for native, foreign (all pooled), displaced (refugee and asylum seekers pooled), refugee, and asylum seeker candidates. The table also reports the difference between the response rate for natives and the rate for the other groups, along with statistical tests of independence. I find strong evidence of discrimination against foreign applicants, with response rates statistically significantly lower by just over 11% when pooling all foreign candidates. The magnitude of discrimination increases and remains statistically significant for displaced applicants, who receive about 14.41% fewer callbacks. Decomposed, it becomes clear this result is driven by discrimination against refugee applicants, who receive roughly 19% fewer responses than their native counterparts. Asylum seekers also have a lower response rate, receiving roughly 10% fewer responses, though this result is not statistically significant compared to natives. Ambiguous candidates receive responses at an almost identical rate, seeing less than an 1% decrease which is not a statistically significant difference. This suggests that the disparities are driven not by in-group nepotism for South African candidates but out-group discrimination against foreign and displaced candidates.

[30] Of course, while retail and hospitality can shift to online orders, beauty jobs require in-person meetings, so do not face this same shift.

Table 4: Response Rate by Native or Foreign Status

	Number of Inquiries	Response Rate	Difference from Native	Percent Difference
Native	798	43.48	–	–
Ambiguous	798	43.11	−0.37	0.86
All Foreign	1596	38.53	−4.95**	11.38**
Foreign (Not Displaced)	798	39.85	−3.63	8.36
All Displaced	798	37.22	−6.27**	14.41**
Refugee	394	35.28	−8.20***	18.87***
Asylum Seeker	404	39.11	−4.37	10.01

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

I report estimates from linear probability models[31] in Table 5. I run models for all foreign applicants pooled, foreign and displaced applicants separately, and each type of foreigner decomposed (separate foreign, refugee, and asylum seeker). The first column for each model displays the estimate from regressing response on just the applicant type, while the second column adds controls. These controls include job category, inquiry template, name of applicant, province, what order the inquiry was sent, month, day of week, and hour inquiry sent, explicit mention of documentation, and skill level. The estimates are shown with standard errors beneath.

The multivariate estimates echo the results from the Fisher tests. There is clear evidence of discrimination against all types of foreign applicants. Pooled together, foreign applicants face a response rate 5.8 percentage points lower than their native counterparts ($p<0.01$). Pooling refugee and asylum seekers together, these applicants experience a rate 6.7 percentage points lower than native competitors ($p<0.01$). Decoupled, the effect is smaller for asylum seekers at 5.4 percentage points (thought still statistically significant at the 5% level, and larger than the magnitude for foreign applicants at 4.3) while it is larger for refugees, who have a 7.9 percentage point lower response rate ($p<0.01$). The coefficient for ambiguous candidates, which is statistically insignificant, indicates a response rate virtually identical to native candidates, again suggesting the results stem from discrimination, not nepotism.

[31] While probit or logit are often used in the case of a binary independent variable, LPM remains valid and provides the added benefit of easily interpretable coefficients (Gomilla, 2020). Regardless, the results reported here hold even when estimated using a probit.

Table 5: LPM Estimates of Response Rates for Groups

	Pooled Foreign (1)	Pooled Foreign (2)	Pooled Displaced (1)	Pooled Displaced (2)	Decomposed (1)	Decomposed (2)
(Intercept)	0.43***	0.42	0.43***	0.42	0.43***	0.27
	(0.02)	(0.28)	(0.02)	(0.28)	(0.02)	(0.29)
Ambiguous	−0.00	−0.01	−0.00	−0.01	−0.00	−0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Foreign (all)	−0.05***	−0.06***				
	(0.02)	(0.02)				
Foreign			−0.04**	−0.05**	−0.04**	−0.05**
			(0.02)	(0.02)	(0.02)	(0.02)
Displaced (all)			−0.06***	−0.07***		
			(0.02)	(0.02)		
Refugee					−0.08***	−0.08***
					(0.03)	(0.03)
AS					−0.04*	−0.05**
					(0.02)	(0.03)
Controls	–	*X*	–	*X*	–	*X*
Num. obs.	3192	3192	3192	3192	3192	3192
N Clusters	798	798	798	798	798	798

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$; Standard errors are computed by clustering at the employer level in all tables

Table 6 reports the effects for driving and beauty sub-groups, the two largest categories in both the sample of job posting and the dataset on refugee occupations. For driving jobs, all foreign, refugee, and asylum seeker applicants receive fewer responses to inquiries. Foreign applicants face an 11-percentage point lower response rate. Refugees see an 8-percentage points lower rate while asylum seekers have a rate 12-percentage points lower. These results are similar to the ones from the combined dataset, providing clear evidence of discrimination against foreigners in hiring for driving positions[32]. However, the picture changes when restricting the data to only the beauty sector. Foreign applicants only see a decrease of about 2 percentage points in their response rate compared to native applicants, with significance disappearing (p=0.47). While the coefficient for refugee candidates is persistent, the magnitude of the estimate for asylum seeker candidates decreases to roughly 2.9 percentage points and loses significance (p = 0.53). So, while there is evidence discrimination persists in the driving sector, it cannot be ruled out that foreign applicants, including asylum seekers, face smaller barriers in the beauty sector.

[32] The only difference is the coefficient for ambiguous candidates, which becomes negative and significant. This suggest that discrimination in driving stems from in-group nepotism.

Table 6: LPM Estimates by Job Category

	All	Driving Only	Beauty Only
(Intercept)	0.27	0.76	0.35**
	(0.29)	(0.54)	(0.16)
Ambiguous	−0.01	−0.06*	0.03
	(0.02)	(0.03)	(0.03)
Foreign	−0.05**	−0.11***	−0.03
	(0.02)	(0.04)	(0.04)
Refugee	−0.08***	−0.08*	−0.13**
	(0.03)	(0.03)	(0.05)
AS	−0.05**	−0.12**	−0.03
	(0.03)	(0.05)	(0.04)
Controls	X	X	X
Num. obs.	3192	1036	1176
N Clusters	798	259	294

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

The level of discrimination also varies across the provinces. Table 7 reports the estimates when restricting the data to each of the three provinces that dominate the dataset. The disparities tend to dissipate in both the Western Cape and Kwa-Zulu Natal. However, the estimate for displaced persons becomes more pronounced when examining Gauteng. Displaced applicants face a rate that is over 9 percentage points lower than their native counterparts. Decomposed, it becomes clear this result is driven by refugees, who face a decrease of over 14 percentage points in callbacks. The estimates suggest that discrimination against displaced persons in the country is especially acute in Gauteng.

Table 7: LPM Estimates by Province

	All	Western Cape	KwaZulu-Natal	Gauteng
(Intercept)	0.27	0.06	0.23	0.59***
	(0.29)	(0.22)	(0.18)	(0.16)
Ambiguous	−0.01	0.02	−0.00	−0.01
	(0.02)	(0.03)	(0.04)	(0.03)
Foreign	−0.05**	−0.03	−0.02	−0.07
	(0.02)	(0.04)	(0.04)	(0.04)
Refugee	−0.08***	−0.05	−0.01	−0.15***
	(0.03)	(0.05)	(0.06)	(0.05)
AS	−0.05**	−0.03	−0.05	−0.04
	(0.03)	(0.05)	(0.05)	(0.05)
Controls	X	X	X	X
Num. obs.	3192	1080	848	936
N Clusters	798	270	212	234

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Regardless of job category or location, it is vital to understand whether the anti-foreigner bias is driven by taste-based or statistical discrimination. Some responses provide

cursory evidence of taste-based discrimination. For example, some employers outright told candidates they need not apply as they were foreign. This is true for asylum seeker and refugee applicants, who have the legal right to work (so the denial is not based on employers needing to comply with legal requirements). In addition, a couple of employers told foreign candidates that the position was filled (or simply did not exist) yet sent positive replies to natives who applied *later* than the foreign applicant. This is reminiscent of classic audit studies, where a black applicant was told there was no job to apply for or apartment to rent, yet a white applicant was provided proper information when they inquired later. These kinds of responses hint at taste-driven discrimination, as employers deny applicants due to their residency status, not their skills.

Analysis of the data provides further evidence to back this interpretation, as gaps in hiring do not disappear for high-skilled applicants. If employers statistically discriminate, they infer quality of unobservable from group averages as they do not have complete information on candidates. However, as more information becomes available, employers will be able to rely less on these inferences and more on the actual candidate presented to them. Therefore, if equal quality foreign and native applicants provide more information, their callback rates should converge as employers rely less on this statistical discrimination. However, this is not what occurs, with gaps remaining, and even worsening, across high skilled applicants.

Table 8 reports estimates derived from a linear probability model using only data from low or high skilled applicants. The estimates are larger for high skilled applicants, though asylum seekers are the only ones who see any meaningful increase. In any case, there is certainly no convergence among response rates. This suggests that discrimination against foreign applicants, including displaced persons, is driven by taste-based discrimination. Employers in South Africa do not hire foreign applicants because they have a distaste for doing so.

Table 8: LPM Estimates by Skill Level

	All	Low-Skill	High-Skill
(Intercept)	0.27	0.40	0.14
	(0.29)	(0.39)	(0.50)
Ambiguous	−0.01	0.03	−0.03
	(0.02)	(0.03)	(0.03)
Foreign	−0.05**	−0.04	−0.06*
	(0.02)	(0.03)	(0.03)
Refugee	−0.08***	−0.08*	−0.07*
	(0.03)	(0.04)	(0.04)
AS	−0.05**	−0.03	−0.09**
	(0.03)	(0.04)	(0.04)
Controls	X	X	X
Num. obs.	3192	1548	1644
N Clusters	798	737	756

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Why do the response rates diverge instead of converge as applicants become more skilled? The answer becomes clear with Table 9, which reports the benefit of different skills, as well as the interaction with a non-native indicator. These skills, such as having references, an education, proper spelling, and sober habits, along with the application being sent first, have the expected sign[33]. All contribute positively to an applicant's chance of receiving a response. However, when these skills interact with the non-native applicant indicator, the sign is negative. The coefficient in the interactions is usually large enough to completely counteract the skill's benefits, or at least the majority of it. This is most evident with the education skill. A matriculation education gives South Africans a 9-percentage point boost to their chance of a callback and is significant at the 10-percent level. However, non-native applicants see this benefit completely erased, with the result also statistically significant. The results make it clear that native applicants receive benefits from investing in their skills while other applicants largely do not. This means that as information is revealed, the gaps between native and foreign applicants will diverge, as seen in the data, as natives increase their response rates while foreigners see no change.

[33] The one exception is being multilingual, which has a negative sign. However, the coefficient is small and insignificant. In any case, it is not unsurprising with many skill indicators that one may have an unexpected sign just by random chance.

Table 9: Effects of Skills and Interaction with Non-Native Status

	Skills and Interactions
(Intercept)	0.33***
	(0.06)
Documented	−0.01
	(0.02)
Not Native	0.06
	(0.06)
First	0.13***
	(0.04)
Not Native X First	−0.06
	(0.05)
References	0.06
	(0.05)
Not Native X References	−0.07
	(0.05)
Multilingual	−0.02
	(0.05)
Not Native X Multilingual	0.00
	(0.05)
Education	0.09*
	(0.05)
Not Native X Education	−0.09*
	(0.05)
Spelling	0.05
	(0.05)
Not Native X Spelling	−0.05
	(0.05)
Sober	0.07
	(0.05)
Not Native X Sober	−0.04
	(0.05)
Num. obs.	3192
N Clusters	798

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table 9 also includes the impact of documentation, a "skill" included for foreign and displaced candidates. There is a small negative coefficient, though it is not significant. But in the very least, it makes clear that there is no immediate benefit to documentation in increasing a displaced person's employability.

Discussion

The results provide evidence that foreign candidates face significant barriers of discrimination in the labour market. The lower response rates suggest, at the most basic level, that foreign and displaced workers must apply to more positions in order to receive a positive response. To find more postings, foreign jobseekers will have to search for and take opportunities in a wider area, as found in Abel (2017), a large barrier in a country with high

transport costs. Beyond this, the response rate is a proxy for job offers, with previous research interpreting the lower response rate as less offers for workers. This means not only will displaced workers need to search further to just receive a response, but they will also have to search longer to land a position. This fits with the basic job search model of Cahuc (2014), which implies the duration of unemployment is inversely related to job offers. This means that refugees, who receive roughly 19% fewer responses, will remain unemployed for over 19% longer than natives. The harms of remaining unemployed, searching for a job, and transportation all combine to create large costs to displaced persons in South Africa.

The coefficient for ambiguous candidates implies that the gaps in response rates stems from out-group discrimination rather than in-group nepotism. Employers penalize foreign applicants for their status as an outside group. This result holds across all locations, skill levels, and most job categories. The only area where it does not is in the driving category, where ambiguous candidates face a statistically significant lower response rate. This implies the gaps in driving jobs are a result of in-group nepotism, where employers provide an unearned benefit to native South Africans. But outside this sub-group, discrimination in the country results from a distinct distaste for foreign candidates.

The uneven distribution of discrimination across job categories has important implications for refugee and asylum seekers. The lower barriers in the beauty sector suggest it may be a promising area to explore for foreigners in the republic. This is also promising news for displaced women, who often face new or increased barriers in life compared with their male counterparts. As beauty jobs are predominately held by women, they may provide an avenue for female asylum seekers to gain a foothold in the South African labour market. On the other side, the discrimination in hiring for driving jobs is a large concern. If these types of jobs are to become more common as the COVID-19 pandemic shifts the face of work, it could mean even fewer opportunities for refugees and asylum seekers. This would be pronounced for displaced men, who are more likely to enter this line of work. As policymakers work to help laborers navigate the new normal, they must keep this in mind and find opportunities to help refugee and asylum seeker men enter the labour force.

The differences in discrimination across provinces has important implications as Gauteng, as discussed earlier, is the largest host of migrants in the country and is one of the few locations to file an asylum claim. Because the migrant population is overrepresented in the province, the costs of discrimination are much higher than if the population was evenly

distributed across the country. Any policy aimed at reducing discrimination might be most productive and cost-effective if targeted within the province given the combination of large discrimination and large population. This result also implies that displaced persons may find benefits from settling in other provinces. This put added pressure on the Department of Home Affairs to reopen the Cape Town reception office, as asylum seekers might find less discrimination if they can make the Western Cape their destination.

The large level of discrimination in Gauteng is not surprising but leaves questions as to the mechanism. There have been many studies exploring discrimination against refugees, asylum seekers, and migrants specifically in Gauteng, detailing the many areas in which they face barriers (Landau 2006). Johannesburg and its surrounding township have experienced waves of violence targeting foreigners over the years and has been the center for protests against foreigners in the wake of COVID-19. But why the province is ripe for xenophobia is less clear. Studies, such as Brookman (2016), have shown that exposure to an "out-group" can durably increase individuals' receptiveness to that group. In addition, living in areas with high levels of ethnic outsiders can reduce opposition to migrants (Kaufmann 2017). This would leave one to believe the higher proportion of migrants in Gauteng could *reduce* discrimination. However, much of the opposition in South Africa stems from the view of migrants as economic competition. The republic has an incredibly high unemployment rate, leaving many native South Africans struggling to find work. Crush (2013) reports citizens believe migrants take jobs from South Africans, while Gastrow (2013) highlights the intense belief among shopkeepers that foreign shops are damaging their business. It is possible these beliefs are accentuated among Gauteng locals who are more acutely aware of foreigners' presence in the country given the overrepresented population. However, even if the perceived economic competition was a component, it would not be able to fully explain anti-immigrant discrimination. Much of it untied to economics, such as the belief foreigners are more likely to commit crimes, sell drugs, or spread disease. Clearly, there is a need for further research into the discrimination uncovered in Gauteng.

The differences in returns to skills have important implications for foreign jobseekers in South Africa. They may not have the same incentive structure to invest in skills or education as it does not have the immediate payoff in increased employability. This also presents a difficulty in reducing discriminatory barriers, as providing foreign residents opportunities to increase their employability may have little to no effect.

The most persistent discrimination in this experiment is against refugees. They not only face negative effects in the central finding, seeing roughly 19% less responses than their native counterparts, but in the other findings as well, even when the effects dissipate for other groups. They lose out not only in the high-discrimination driving category, but in the relatively "safe" category of Beauty, where other foreign candidates fare ok. They drive the large discrimination found in Gauteng, leading it to stand out among other provinces where discrimination decreases. In virtually all areas, the response rate for refugees is worse. This pernicious "refugee rate" suggests refugees face worse barrier to entry in the labour market than others, even their asylum seeker counterparts.

Understanding this "refugee rate" is crucial and will require further research, but the cursory evidence points to a trade-off between legal rights and economic opportunities. As mentioned earlier, Abel (2017) finds documented candidates receive *fewer* pageviews on their GumTree profiles than candidates who withhold their status. Based on this and survey evidence from employers, Abel (2017) posits this is because employers seek those with less legal rights who may have less recourse against exploitative practices, such as lost wages. The findings here echo this suggestion. Documentation has no tangible benefit in gaining employment, perhaps even worsening response rates. Refugees face the largest and most persistent discrimination among foreign applicants. While foreign and asylum seeker candidates might find relief in certain job categories or locations, refugees are consistently rejected. This all suggests that increasing the legal rights of displaced persons may have the unintended effect of *reducing* employment opportunities in entry-level work. This has important implications for refugee inclusion, which often focuses on the expansion of legal rights. It also has important implications for policy priorities of government and organizations looking to help refugees. UNHCR is continuing to move its budget away from providing social services to helping the Department of Home Affairs clear the backlog of asylum cases. However, this may be overvalued if documentation does not help employment prospects and may even limit those prospects, all on top of reducing the vital benefits they rely on now.

XI. Potential Bias in Results

The lower response rate for foreign, refugee, and asylum seeker applicants are taken, as is the standard in correspondence studies, to demonstrate the fewer job offers for these

applicants. However, the response rate is merely a proxy for job offers. It is important to understand how this proxy might differ from actual job offers given to applicants. Therefore, I examine ways in which the proxy might underestimate or overestimate the true rate of job offers.

Underestimate

There are a number of ways in which the coefficients estimated in this experiment are an underestimate of the true rate of job offers, many of which stem from the experimental design itself. A meta-analysis by Quillian (2018) finds that discrimination in this "first round" of the hiring process (callbacks) is less than the discrimination found in later rounds, such as the actual final job offer round. So foreign or displaced applicants who make it through this first round despite the significant discrimination will face even higher barriers to success in subsequent rounds. Therefore, while the estimates found here are reliable proxies, they could be thought of as the *lower bound* of discrimination in the entire hiring process. Each subsequent round will present additional barriers for foreign and displaced applicants, adding to the magnitude of the coefficients. Hence, my results are an underestimate of true discrimination in the hiring process.

This is not the only area where the design of the correspondence study leads to an underestimate of discrimination, with the other big source being the coding. To reduce bias, all non-negative and non-automated responses (whether it be a "positive" response offering an interview or an "ambiguous" response requesting additional information) were coded as a "positive" response. However, not all positively coded responses are equal. Some employers who responded to both native and foreign or displaced applicants sent starkly different messages. For example, a native applicant may be asked to provide a longer CV or a time that works for an interview while a foreign applicant might instead be asked "where are you from?" One response invites the candidate further along the process. The other response implements a filter, looking to screen out (discriminate against) candidates with certain backgrounds or nationalities. However, due to the systematic approach to coding, both responses are coded the same. Here, the correspondence study again "misses" certain layers of discrimination in the hiring process. This would again suggest the estimates crafted in this experiment are underestimates of the true magnitude of discrimination.

Another reason the results in this study are likely underestimates is that real applicants will have cofounding attributes that are likely to increase discrimination. The applicants in the correspondence study are quite similar, using names that would not signal different races, religions, or ethnicities. However, in the real world, applicants will provide employers with these signals. A foreign and displaced applicant will often have an ethnicity, religion, or tribe that is an out-group in South Africa. These differences, not just their status as a foreigner, will results in discrimination (Zschirnt (2016)). So real world applicants will face additional barriers of discrimination on top of those measured in this study, making our estimates underestimates of the true discrimination found in the labour market.

One final reason to suspect these estimates understate discrimination is that there were more foreign candidates in the pool of applications sent to each job posting. The model used in this study is a threshold model, where an employer responds to any candidate they expect to pass a certain quality threshold. However, employers may not be so systematic and precise, adding in a possible element of random chance. Because the treatment arms were not even, with one native and two foreign (foreign and displaced), there were more foreign candidates in the applicant pool. If there is a small random factor to call backs, employers are more likely to randomly select one of the foreign applicants to respond to just by the nature of there being more foreign candidates. Again, this suggests the coefficients estimated in the study understate the true level of discrimination against foreign applicants.

Overestimate

There are also a couple reasons to believe the coefficients in this study could be overestimates of the true discrimination foreign applicants face. The obvious one is that applicants can maneuver in the labour market to avoid sectors with large discrimination. If foreigners are able to accurately target low-discrimination employers, they will not have to combat barriers as large as those found in this study. This is especially so as migrants often use ethnic networks to find jobs, with refugees better able to find employment when placed with those who share their ethnicity (Martén 2019). If foreigners are able to leverage these networks, and avoid high discrimination markets, they can better navigate barriers of discrimination. Of course, these maneuvers can be costly. Applicants will have to find and integrate with these networks, as well as gather proper information on levels of employer

discrimination. These tasks require effort and resources, something native applicants will not have to expend. So even if foreign applicants are able to reduce the magnitude of discrimination in their job search, it comes at a cost not borne by native applicants, which results in a form of a discriminatory "tax" on foreign applicants. Even in this scenario, discrimination will exist.

Heckman Critique

Another source of bias in the results come from the Heckman (1998) critique of correspondence studies. As discussed earlier, Heckman (1998) suggests that the differences in response rates is not due discrimination but different variances in unobservable characteristics. In a threshold model of hiring, all candidates who meet a certain threshold quality receive a callback. If the information supplied by candidates on their inquires does not meet the threshold, then the only way to receive a response is if their *unobserved* characteristics put them above the threshold. While the mean of the unobservable characteristics may not be enough to put a candidate over the threshold, a high variance would raise the possibility that the candidate meets the requirement. A low variance, tightly bound around the mean, means there is no chance the candidate exceeds the threshold. Therefore, even with assumed equal characteristics, differing variances across groups can result in spurious evidence of discrimination.

Fortunately, there is a solution to the critique. Neumark (2012) develops a method to uncover an unbiased estimate of discrimination in a correspondence study. By using the results of a probit of discrimination compared to the results of its heteroskedastic probit counterpart, one can decouple the effect from discrimination from the effect from unequal variances. The effect from discrimination, without the effect from the differing variances, is the unbiased estimate.

The results from incorporating the methodology from Neumark (2012) is reported in Table 10. Each model is run on data comparing South African candidates to foreign, refugee, and asylum seekers separately. The first row of the table presents the coefficient estimated from a basic probit, while the second presents the coefficient estimated from the heteroskedastic probit. The third and fourth row report the decoupled effect of discrimination and variance, respectively.

Table 10: Estimates from Probit and Heteroskedastic Probit

	Foreign	Refugee	Asylum Seeker
Probit	−0.04	−0.07	−0.05
Heteroskedastic	−0.03	−0.11	−0.04
Discrimination	−0.05	−0.07	−0.06
Variance	0.03	−0.03	0.03

Results show coefficients for foreign and asylum seekers are underestimates, with the higher variance hiding the true magnitude of discrimination. Inversely, the coefficient for refugees is a potential overestimate due to lower variance, though the magnitude is still larger than for the other applicants. These results show that, whether under- or overestimated, discrimination is robust to the Heckman (1998) critique, remaining large for all foreign and displaced candidates.

XII. Conclusion

I conducted a correspondence study of discrimination against refugees and asylum seekers in South Africa. This is the first study to implement this design to measure the magnitude of discrimination against displaced persons in the republic. The design, grounded in previous empirical research, is tailored to the context to improve validity, applying to positions typically held by refugees in a manner common to the country. It also includes elements useful in uncovering additional insights, including questions of nepotism versus out-group discrimination, as well as statistical vs taste-based discrimination. There are always limitations to correspondence studies. I have addressed and discussed these throughout, which should aid in others' interpretations of the results.

I find large and significant discrimination against foreign and displaced applicants. While all foreign applicants receive fewer responses to job inquiries, refugees receive the fewest, with this "refugee rate" driving the central finding. As ambiguous candidates receive no penalty, it appears the finding is a results of out-group discrimination as opposed to in-group nepotism. This discrimination is likely to stem from a distinct distaste among employers for displaced candidates, rather than statistical discrimination, as suggested by its persistence among high-skilled applicants. I also find cursory evidence that discrimination may not be consistent across sectors and locations. This suggests that displaced persons may benefit from

tailoring their job search to certain categories and cities, with similar implications for policy responses.

The findings are relevant not just for South Africa, but other contexts who wish to provide the right to work for refugees and asylum seekers. There is clear potential for discrimination to create large barriers for displaced persons trying to enter the labour market. As countries continue to host more and more refugees, the importance of reducing these barriers grows larger. Nations will need to take an active approach if they wish to find success, and reap the benefits, of economic inclusion.

XIII. References

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XIV. Appendix

Skills						
General	Cleaner	Retail	Hospitality	Barber/Stylist	Beauty Tech	Driver
References available Multilingual Education (completed SA Matric) Spelling (no errors) Sober	Has some own supplies Commercial experience Flexible hours Worked with individuals and families	Familiar with working register Experience handling inventory Employee award for customer service Clean cut	Clean cut Friendly Employee award for customer service Flexible in role	Familiar with different hair types Familiar with both men's and women's hair Able to do treatments Familiar with synthetic hair	Familiar with all kinds of nails Able to do nail art Lash treatments Have some clientele	Clean record Careful Valid license Clean

Inquiry outlines (red indicates removed as typo by default/included with "spelling" skill)	
Hello, I am interested in the position you described on Gumtree. I am a [native South African/(registered) refugee or asylum seeker (with a s22/4 permit)] looking for work here in [city name]. I am an experienced [type] with [Enter job skills]. I also [enter general skills] Thank you, [Name]	Hi, I saw your post and am interested in the job here in [city name]. I am a [native South African/(registered) refugee or asylum seeker (with a s22/4 permit)] and an experienced [type] with [enter lines of randomized skills]. Thanks, [Name]
Good day. I am inquiring about the position in [city name] you posted. I, a [native South African/(registered) refugee or asylum seeker (with a s22/4 permit)], am interested in the position. I am an experienced [type] and have [enter job skills] and [enter general skills]. I appreciate your time – [Name]	Greetings, I am responding to your advertisement about the position in [city name]. I am a [native South African/(registered) refugee or asylum seeker (with a s22/4 permit)] who is an experienced [type]. I [enter randomized skills]. Thank you for your consideration – [Name]
Hey. I just read your post for the position on Gumtree. I am a [native South African/(registered) refugee or asylum seeker] here in [city name]. I have experience with [type] work and [enter randomized skills (with a s22/4 permit)]. Thank you very much, [Name]	Dear poster, I was looking at jobs here in [city name] on Gumtree and I saw your advertisement. I am an experienced [type] and have [enter job skills]. I am a [native South African/(registered) refugee or asylum seeker (with a s22/4 permit)] [enter general skills]. All the best: [Name]

Names [Male]	Names [Female]
Junior	Precious
Gift	Faith
Blessing	Hope
Prince	Blessing
Innocent	Angel