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Mapping Xenophobic Violence in South Africa: Modeling Spatial Relationships between Group Grievances and Opportunities to Measure the Propensity for Xenophobic Violence

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Mapping Xenophobic Violence in South Africa: Modeling Spatial Relationships between Group Grievances and Opportunities to Measure the Propensity for Xenophobic Violence

Mapping Xenophobic Violence in South Africa: Modeling Spatial Relationships between Group Grievances and Opportunities to Measure the Propensity for Xenophobic Violence

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Geography

By

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Ouachita Baptist University
Bachelor of Arts in Biology, 2005

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ABSTRACT

Xenophobia can be defined as the hatred or fear of foreigners or strangers or of their politics or culture (Ngwane *et al.*, 2008). This sentiment reached its tipping point in urban areas across the Republic of South Africa in May 2008 when mass, widespread and systematic attacks against African non-nationals took place across the country. Although previous research agrees on who played the various roles during this crisis event (Everatt, 2010), little research has been carried out to create a predictive model to assess where future violence could occur based on a set of conflict indicators. The purpose of this research is to revisit the sociopolitical, geographical and geopolitical landscape of the Republic of South Africa during the year preceding the violence of May 2008 to identify the conflict indicators that worked towards triggering the violence. Once these indicators are identified, they will be geospatially represented through a series of quantitative thematic maps.

Findings from this research reveal that there is a positive correlation between conflict indicators and large xenophobic events and the importance of this research lies in its ability to serve as the basis for a conflict prediction model. The ability to geospatially represent the conflict indicators that served to exacerbate xenophobic tensions across the Republic of South Africa leading up to the violence of May 2008 can be duplicated today to identify the geographic locations that are most susceptible to experience a large xenophobic event.

This thesis is approved for recommendation
to the Graduate Council.

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I would like to thank Dr. Fiona Davidson, Dr. John V. Brahana and Dr. Tom Graff for their guidance, direction, assistance, availability and willingness to contribute towards the completion of this research. Thanks to Dr. Davidson for completely supporting my research interests, and for investing her expertise and resources towards the fruition of this study with the hopes of bringing understanding to an often misunderstood region of the world.

Special thanks are due to the Department of Geosciences at the University of Arkansas for equipping me with the required and necessary analytical skillset to accomplish this research, and for creating and maintaining an environment of sound academic thought through which my research interests and passions were able to take root and grow.

I would like to thank my parents, who exercised great sacrifice and faith so that I might be able to see the world as it should be better seen.

Lastly, I would like to express endless thanks to the true love of my life. Your patient endurance and support over the past three years have motivated me towards the completion of this thesis project.

DEDICATION

This thesis is broadly dedicated to all men, women and children who have endured the oppression of an “other”, and to the displaced, voiceless, marginalized, and afflicted.

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LIST OF ABBREVIATIONS

| | |
|---------|--|
| ACMS | African Centre for Migration and Society |
| ANC | African National Congress |
| BEE | Black Economic Empowerment |
| BBBEE | Broad-Based Black Economic Empowerment |
| CPS | Centre for Policy Studies |
| DHS | Department of Home Affairs |
| DMAs | District Management Areas |
| EA | Enumeration Area |
| FSI | The Failed States Index |
| FFP | The Fund for Peace |
| GHS | General Household Survey |
| HRW | Human Rights Watch |
| IDASA | Institute for a Democratic South Africa |
| LFS | Labour Force Survey |
| MDGs | Millennium Development Goals |
| MPI | Modified Poverty Index |
| RDP | Reconstruction and Development Programme |
| RLMS | Regional Labour Market System |
| SAHRC | South African Human Rights Commission |
| SANDF | South African National Defence Force |
| SAPS | South African Police Service |
| SADC | Southern African Development Community |
| SAMP | Southern African Migration Project |
| SAMS | Southern African Migration System |
| STATSSA | Statistics South Africa |

I. INTRODUCTION

Relations between South African nationals and African non-nationals during the post-Apartheid era are a striking case of narcissism of minor differences. Immigrants are sources of fear and anxieties the more they are imagined as invisible intruders (Matsinhe, 2011). At times, differences between the two groups can seem impossible to differentiate and often go unnoticed. Under the correct set of circumstances, however, the differences can be perceived as very real and very threatening. Othering is a fundamental process in identity politics within the new South Africa. The process of othering involves the identification of socially constructed markers by which the individual can be distanced from a group. The distancing between “us” and “them” has gained increasing attention amongst populations of South African nationals and non-nationals through the form of xenophobia. In the post-Apartheid era of South Africa, identity politics and formation is still relatively young.

Xenophobia is to othering as the chicken is to the egg. One quite simply cannot exist without the other. Xenophobia amounts to violent harassment of immigrants from other countries in Africa, killing “tens, if not thousands” (Danso, McDonald 2001). There exists an exhaustive record supporting the fact that migrants have been targeted as “others” and blamed for many social ills (Dodson 2000). The blame is often administered through violent means.

It took fourteen years from the fall of the Apartheid regime in 1994 for a significant xenophobic event to occur. During the winter of 2008, the process of othering took on the heinous form of coordinated and systematic attacks by South African nationals against African non-nationals. The wave of violence left scores of innocent men and women dead, thousands displaced from their homes and millions of rands in vandalized, destroyed and looted property and possessions. The violence was mostly seen in highly urbanized cities and surrounding townships, where overcrowding and group grievances were highest. The response of the government to the violence was slow at best, and one of widespread denial. Though many researchers and institutions predicted the inevitable violence, those most at risk had very little hope for protection, aid relief and relocation placing heavy burden on an already brittle infrastructure. Prior to the May attacks, all evidence pointed towards the inevitability of “when” and not “if” a significant act of violence would occur. Four years later, the inevitability of similar violent civil conflict remains.

The objectives of this study are to 1) identify the significant causes of xenophobic conflict as seen in the May 2008 attacks, 2) create a series of group grievance and opportunity maps to cartographically represent the significant causes of xenophobic conflict, and 3) identify significant spatial relationships between the conflict triggers and the number of xenophobic events to serve as the basis of a conflict prediction model. These relationships will serve to answer the following hypothesis:

Hypothesis: Geostatistically representing the primary conflict triggers of the May 2008 xenophobic violence is an effective method in measuring the propensity of xenophobic violence in South Africa.

Xenophobic tensions are as high today as they were prior to the May 2008 attacks. It is vitally important for continued research to be conducted in studying the correlations between significant xenophobic events within the Republic of South Africa and effectiveness of its government to rule.

II. BACKGROUND AND LITERATURE REVIEW

Pre-1994 Migratory Patterns

The Afrikaans word for “separateness”, apartheid truly was that in every sense. Apartheid was “an enormously complex, sophisticated, and modern system of racial and economic domination that employed the most advanced technology, much of it obtained from the West, to regulate the life and work of millions of people” (North, 1986). Prior to 1994, a white minority population governed the Republic of South Africa by controlling the geography of the country. In most part, this was accomplished through dividing the country along lines of skin colour by forcibly relocating millions of non-whites from their homes and into designated areas deemed appropriate by the white minority rule.

Apartheid forced nearly four million non-white, non-European persons out of their homes and homelands into regulated territories. Those displaced were located to homelands or “Bantustans”. As the central institution of apartheid, the Bantustan system divided South Africans among ten geographic territories, which Desmond Tutu, the former Archbishop of Cape Town, called resettlement camps (Hawes, 2009). These homelands were mostly classified by tribal group and successfully allowed the white minority rule of South Africa to effectively “divide and conquer” by dividing the non-white majority of the population into smaller more controllable groups along lines of subtle differences such as mother tongue language, culture and religion. Non-whites were strictly monitored and their movement controlled.

Unemployment amongst non-whites was staggeringly high with exception within the mining and service industries. However, as demand for labour increased within these industries, especially the mining industry, the demand for cheap, foreign labour also increased. This demand would be met by the far-reaching influx of non-national immigrants from many sub-Saharan African countries. The movement of people before 1994 was very different from the movements of people occurring today. There was a great ease of movement of people under the apartheid regime across permeable or semi-permeable borders due to the Regional Labour Market System (RLMS). Set up in the 19th and 20th centuries, the RLMS was a co-operation between South Africa and the British and Portuguese colonial governments, and included many of today’s Southern African Development Community (SADC) countries. Its sole purpose was to develop a strong work force from neighboring countries to be brought into South Africa to

specifically work in the South African mining industry (Muanamoha, 2010). The RLMS was so successful in fact that throughout the years, South African mines became highly dependent on cheap male migrant labour from its neighboring countries. South African employers systematically recruited foreign migrants to supplement what they deemed to be an insufficient supply of cheap domestic labour (Southall, 1994). The influx of mostly black African non-nationals into the country served as a significant proportion of the work force that fuelled the South African economy. The apartheid regime readily accepted black migrant workers into the country for the sole purpose of procuring valuable minerals from the mines while strictly denying the entry of black asylum seekers and refugees.

In contrast, the apartheid government opened its borders to whites leaving de-colonizing countries across the region during the latter part of the twentieth century, often when they did not meet the terms of immigration legislation (Peberdy, 2010). For more than a century, migrants to South Africa consisted largely of impoverished rural dwellers from the surrounding peripheries desperately seeking employment on almost any terms (Murray, 2003).

It would become apparent to Africans living in colonies across sub-Saharan Africa that employment opportunities were limited in their home countries. Displaced from their land by their colonizers, many migrated south to the mines of South Africa (Jones, 2006) and though asylum seekers and refugees were denied legal entry into the country, the South African government could do little to deter the illegal movement of peoples across borders. In fact, illegal immigration was subtly encouraged for years (Muanamoha, 2010). This deliberate choice to look the other way in regards to illegal immigration did at times have undesirable consequences. Such a rapid influx of immigrants over a relatively short amount of time caused the apartheid regime to, at the very least, provide accommodations for the migrant workers.

Another concern that emerged was one of health, more specifically disease transmission propagated by migrant workers. As South Africa's mining capacities grew, such as its gold mining industry along the Witwatersrand, the impact on patterns of sickness and health grew as well causing great concern among those running the industry as well as those participating in its operation (Packard, 1987). These concerns quickly evolved into and exacerbated tensions between native South African labourers and other African

non-nationals. Money the migrant labourers brought home was usually far above the average rural income, which often led to conspicuous consumption and spending. In this way, migrants became a big attraction to women in the villages and it was therefore believed then that HIV/AIDS would spread rapidly if these men and women were carriers or sufferers (Chirwa, 1998). The position changed in October, 1987 when the South African government heavily influenced by ultra-rightist white elements in the Conservative Party, issued a declaration prohibiting HIV carriers and AIDS sufferers from immigrating into the country (Chirwa, 1998). Those already in the country would possibly be deported. It became an offence for an individual or institution to knowingly abet an HIV carrier or AIDS sufferer to enter or stay in the country. All those immigrating to South Africa to work or study had to carry an HIV-free certificate issued within 14 days prior of their entry into the country (Chirwa, 1998). As a result of the growing tensions between migrant workers and South African nationals, the government even went so far as to threaten to expel 1.5 million foreign workers.

Migrant labourers were also used as a political tool against countries that hosted the African National Congress (ANC). For example, in the late eighties, the South African government expelled some 60,000 Mozambican workers for a landmine blast on the Mozambican/South Africa border that was blamed on the ANC (Chirwa, 1998). The apartheid regime exercised with stringent consistency the same segregatory policies towards those wishing to enter the country and those who already had. Whites who left Mozambique at independence were welcomed in South Africa and given permanent residence whereas black Mozambicans who fled the civil war of the late eighties and nineties were not, entering the country as undocumented migrants (Peberdy, 2010). A century of lax immigration policies coupled with growing tensions between nationals and non-nationals would begin to change the composition of demographics within the country. One of the legacies of apartheid, "institutionalized othering", has been viewed by many as the driving force behind today's urban violence as well as a strong catalyst for inter-group grievances and tensions that are deeply entrenched across the geographic and sociopolitical landscapes.

Post-1994 Migratory Patterns

By far the most significant change in cross-border migration in South Africa in the 1990s has been the dramatic increase in noncontract migration. Africans from other parts of the continent – mostly from the immediate region but now from as far away as Ghana and Somalia – are entering South Africa in increasing numbers to look for work, to visit friends, and to sell and buy goods (McDonald, 2000). Documented border crossings from countries in the SADC alone have increased almost seven-fold to 3 million visitors a year since 1990, and there are also significant increases in the number of visitors from Eastern Europe and Asia. Undocumented migration would appear to have increased dramatically as well. Estimates range from 2.5 to 12 million undocumented migrants living in the country at any one time (out of a total South African population of approximately 38 million), and although these figures are most likely exaggerated there can be little doubt that there has been a significant increase in the number of people overstaying their visas and entering the country without proper documentation (McDonald, 2000). At the risk of over-simplifying a long history of scholarly research on the subject, it can be said that the bulk of the literature on cross-border migration in the region paints a very negative picture of the consequences of migratory labor and apartheid-era immigration laws (McDonald, 2000). This is not to suggest that all cross-border (Figure 1.) movement has been seen to be negative or that it affects all people in the same way, but the overwhelming sense from the literature is that cross-border movement has had a deleterious impact on individuals, families, communities and states in the region (McDonald, 2000).

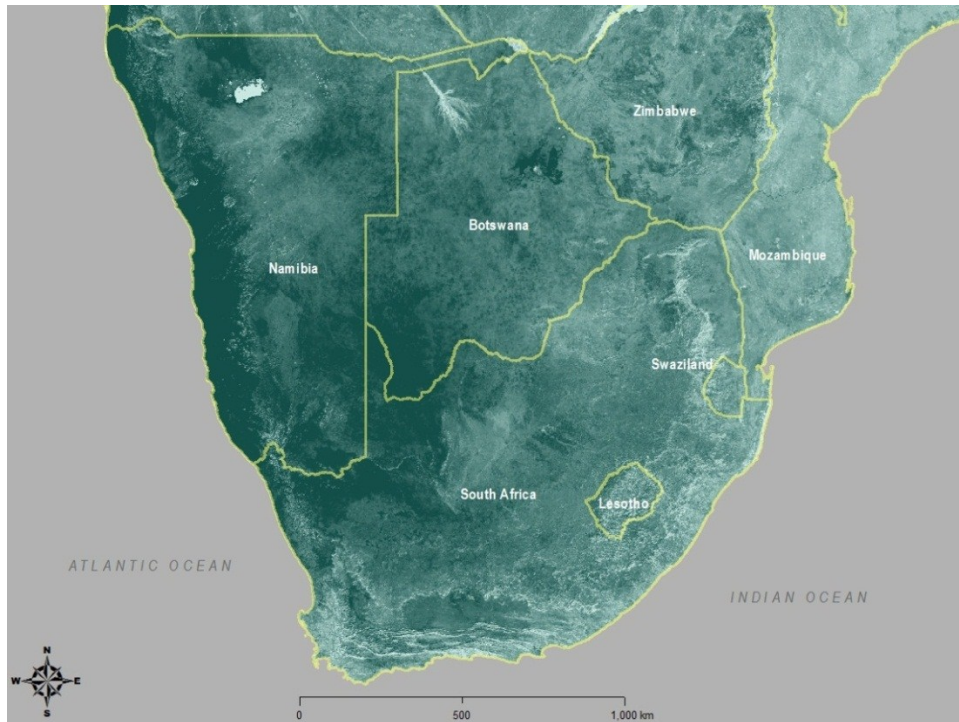


Figure 1. South Africa's Contiguous Neighbors.

Past research points to three stages of immigration into and within the Republic of South Africa, and it is the cumulative effect of all three that have shaped the geographic landscape as it is known today. Those stages are 1) mining and agriculture sector, 2) Apartheid-era, and 3) Post-Apartheid era migration (Muanamhola, 2010). After decades of white minority rule, the apartheid regime ended on April 27, 1994 and would have tremendous ramifications on the demographic landscape throughout the country. Yet unlike earlier patterns of labour migration, a large percentage of recent immigrants have come from cities in other parts of Africa, and they have largely gravitated to the urban areas in South Africa (Murray, 2003). The “urban-to-urban” movement marks a distinctive shift in the historical pattern of labour migration to South Africa (Murray, 2003). The years leading up to April 27, 1994 were signified by the relative ease and rapid influx of African non-nationals into the country primarily to serve the growing needs of the mining industry. In contrast, however, the years following apartheid would be signified with border posts closing, strict enforcing of immigration legislation, and waves of internal migration within the former apartheid-instituted Bantustans. It is likely that the 1990s will be remembered as the decade in which migration in southern Africa became a critical challenge for the governments of the region.

The years since the democratic victory of the ANC in 1994 have witnessed unprecedented population movements, with a strong and seemingly underterrable influx of immigrants into South Africa (Marion, 1998). At the outset, the new ANC government granted amnesty to many unauthorized immigrants wishing to remain in the country, promised to relax the stringent and racially biased immigrant policies that had prevailed under white minority rule, and vowed to protect the rights of immigrants who, in increasing numbers, have sought refuge, legally or illegally, in South Africa (Murray, 2003). According to Human Rights Watch (HRW), police in South Africa arrest more people for violating immigration laws each year than for any other reason (Murray, 2003).

As apartheid fell, and the new South Africa came into being, thousands of already-illegal and legal immigrants were granted amnesty to remain within the country (Murray, 2003). This pool of amnesty recipients included nationals from countries that gave refuge to tens of thousands of black South Africans, as well as political support to the ANC during the years of apartheid, and as a consequence, suffered considerable economic hardship and war inflicted devastation (Murray, 2003). As South Africa has now tightened its borders to prevent apartheid-era numbers of these migrants from accessing the country, the source countries of what once sent thousands into South Africa are particularly resentful at the rejection they now face (Murray, 2003). Apartheid-era immigration laws remain in force in South Africa today (Crush, 2001), but there have been steps made by the government to acknowledge and protect those entering its borders. The 1997 Green Paper; the first ever refugee protection legislation in South Africa's history, recommended the development of a framework specific to refugee protection. The 2008 Refugees Amendment Act (Act No. 33), an amended act of the previous act of 1998 (Handmaker, 2001) affords protection to asylum seekers to South Africa. Asylum seekers and refugees have the right to work, study and access medical treatment as if they were South African nationals (Peberdy, 2010).

Two types of migratory patterns signify the post-1994 demographic landscape of South Africa, internal migration consisting of groups of people who for decades were isolated to their respective homelands, and external migration consisting of African non-nationals immigrating from other countries across sub-Saharan Africa and the rest of the world. Figure 2. offers a glimpse of how drastically the demographics within South Africa's mining industry changed during the first decade of an apartheid-free

South Africa. Three of the four largest source countries of labour, Botswana, Lesotho, and Swaziland saw a relatively steady decline in employment of its nationals within gold mines in South Africa. This is partly a result of the application of more liberal immigration policies at points of entry and partly as a result of the shifting away from contract labour within South Africa's mining industry (Peberdy, 2010).

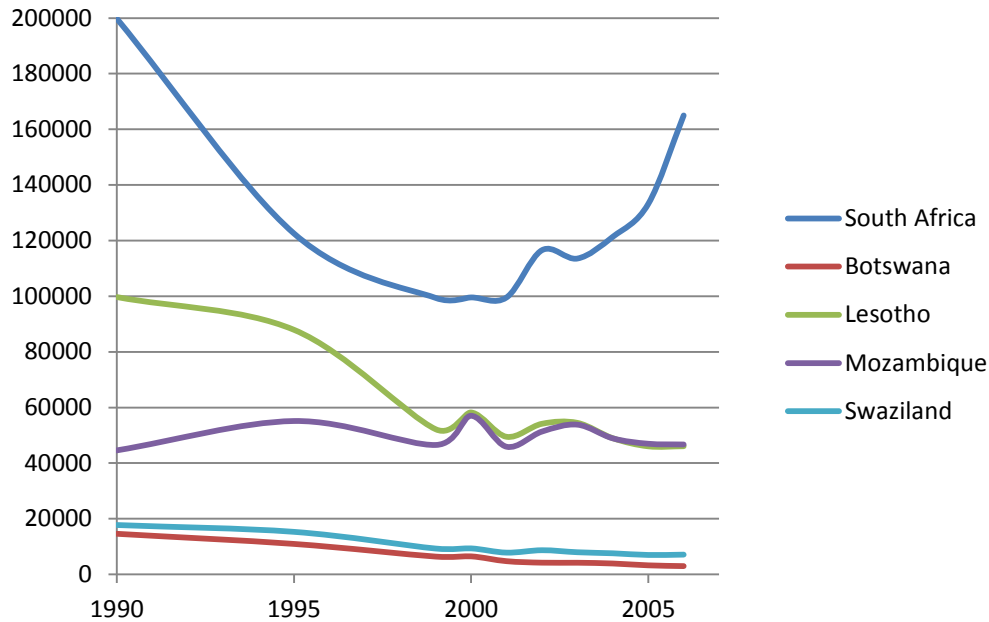


Figure 2. Mine Labour Employment on the Gold Mines, 1990-2006 (Peberdy, 2010).

There are no reliable methodologies available for determining the actual number of foreign immigrants and migrants in South Africa today (Murray, 2003). But what is not disputable is that the number of illegal immigrants deported has dramatically increased, from an estimated 90,000 in 1994, to around 200,000 in 2000 (Murray, 2003). Equally astounding is the fact that illegal immigrants were deported to at least ninety-two countries throughout the world in 2000 (Murray, 2003). As time passes, and as experience from around the world shows, human population movements continue in spite of state controls, a pattern which given the historical fact that migration has a fundamental feature of society long before state systems were imposed, will in all likelihood persist indefinitely in South Africa (Marion, 1998). The distance-decay relationship of inter-national and intra-national migration has weakened considerably since 1994, and as such monitoring South Africa's borders is proving to be a labour and resource-intensive task for the government.

South Africa shares 7,000km of land borders with Namibia, Botswana, Zimbabwe, Mozambique, Swaziland and Lesotho. The Zimbabwean and Mozambican borders are protected by 220km of potentially lethal electric fence that runs intermittently along the border (Peberdy, 2010). Importantly for regional migrants entry has been made harder as the number of land border posts was reduced from 52 to 19 between 1994 and 1997 (Peberdy, 2010). The steps the South African government has taken to slow the influx of immigration can do little to prevent the millions of non-nationals that cross its borders every year. Figure 3. shows the total number of border crossings between the years 1996-2005 (Peberdy, 2010).

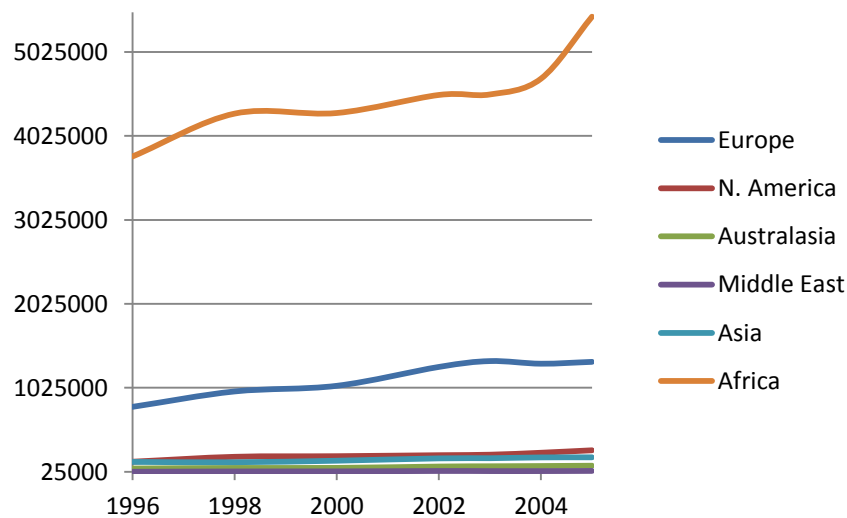


Figure 3. Total Border Crossings, 1996-2005 (Peberdy, 2010).

It is impossible to know how many foreigners are in South Africa at any one time as official data can be difficult to interpret. It is possible to determine in what capacity migrants are entering the country. There has been a significant increase in the number of asylum seekers and refugees from the rest of the continent and further a field during the years after apartheid, as well as an increased movement of visitors and cross-border traders from the region. To contrast this increase in movement types, there has been a significant decrease in the number of contract workers within South Africa's mining industries. There has also been a significant fall in the number of permanent residence awards given out (Figure 4.), as well as a significant but unknown increase in the number of Zimbabweans entering the country (Peberdy, 2010).

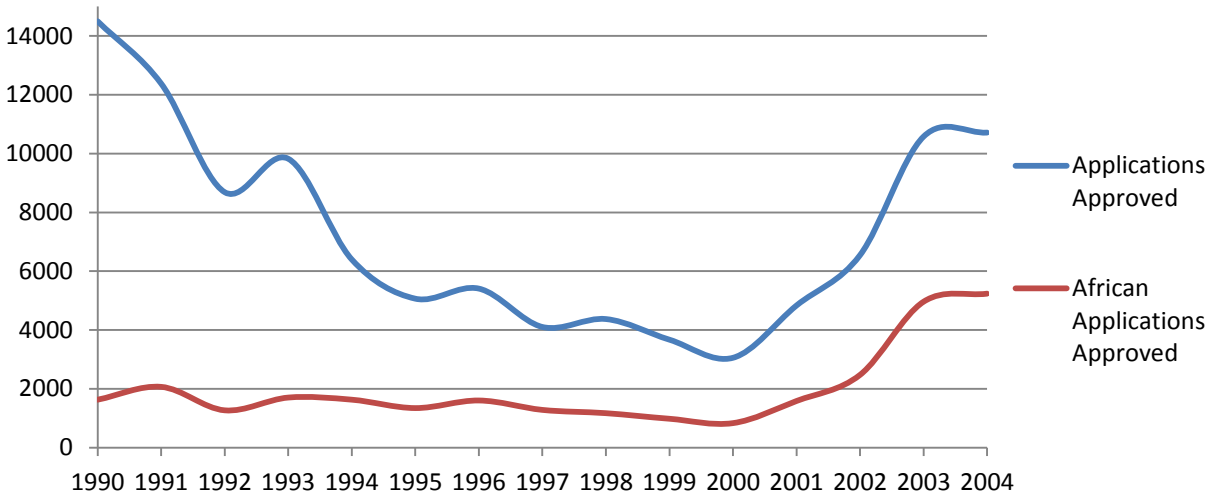


Figure 4. Approved Applications for Permanent Residence, 1990-2005 (Peberdy, 2010).

Inter-Provincial Migration

A stark example of intra-provincial migration within the country is that which John Western refers to as the “Africanization of the Cape” (Western, 2001). After apartheid fell, so too did the restrictions that for generations segregated black South Africans to their homelands. A region that had been off limits to black migration throughout the apartheid years was the Western Cape. Historically the Western Cape had been home to the Cape Coloured people but as apartheid crumbled, so too did the restrictions keeping out non-whites from the area. Western writes, “...at the southern tip of Africa, the culmination of one of the world’s largest population shifts is there for the witnessing” (Western, 2001). The population shift is so great that the population within the metropolitan areas of the Western Cape has more than doubled in the last thirty years.

The Cape Coloured people had lived in the region for hundreds of years and had been unable to migrate with ease to other regions of the country because of the Bantustan system. With the removal of this system, the millennium long southward migration of Bantu-speaking people originally from north of the equator finally arrived in the Cape (Western, 2001).

Feeling boxed into the continent’s southwestern most corner, the large influx of immigrants into the region has caused great concern among the Cape Coloured community. The Cape Coloured are direct descendants of the amalgam that proceeded from the Dutch East India Company’s establishment of

Cape Town in 1652 (Western, 2001), a date that far precedes the date the first Bantu-speaking travelers arrived. Yet, many are those who wish to defend their own “Coloured” interests wherein many contend that one of those interests is evidently “their little bit of the world”, their southwestern corner of South Africa; their veritable Capeness, for the Cape Coloured do not exist anywhere else in the world (Western, 2001). As today’s population at the Cape, the Cape Coloured are in themselves the product of dispossession in that they are very much and completely a new amalgam of the local, the imported, and the invading European dispossessors. Yet “South African” in the minds of many Cape Coloured comes to be interpreted as “Black African”; those who were once termed “Natives” and those who outnumbered Coloureds nine to one in the country (Western, 2001).

It is this highly contested definition of what it means to be South African in a post-apartheid South Africa that is the basis for much debate and conflict across all levels, for during the apartheid years, the sociopolitical hierarchy within the country was as follows: 1) White, 2) non-White (including Coloured and Indian/Asian), and 3) Black. Eighteen years has passed and the sociopolitical hierarchy within the country has changed to: 1) Black, 2) Coloured/Indian/Asian, and 3) White. The non-White, or Coloured, those of mixed race and Asian descent, finds themselves in exactly the same sociopolitical level of influence as they had been in for decades. Before 1991, the demographics within Cape Town, the largest city in the Western Cape, primarily consisted of Coloureds and Whites, with a minimal representation of Black Africans (Western, 2001). The primary cause of the rapid migration of black South Africans into the Western Cape is the ease of movement afforded to South Africans, black, white, and Coloured. According to neoclassical migration theory, labor migration is likely to occur in such an environment as a result in differences in location-specific employment opportunities or wages (Zuberi, 2004). This is especially true in this case. In 1999 official government statistics had the Western Cape experiencing a poverty rate of 28%, whereas that of the Eastern Cape was the nation’s highest, at 71% (Western, 2001). From 1982 to 1992 the Black African population of Cape Town more than doubled, nearly all the newcomers Xhosa people from the former homelands of the Ciskei and Transkei (Western, 2001). The Western and Eastern Cape respectively, then, stood at “Second World” vs. “Third World” levels (Figure 5.).

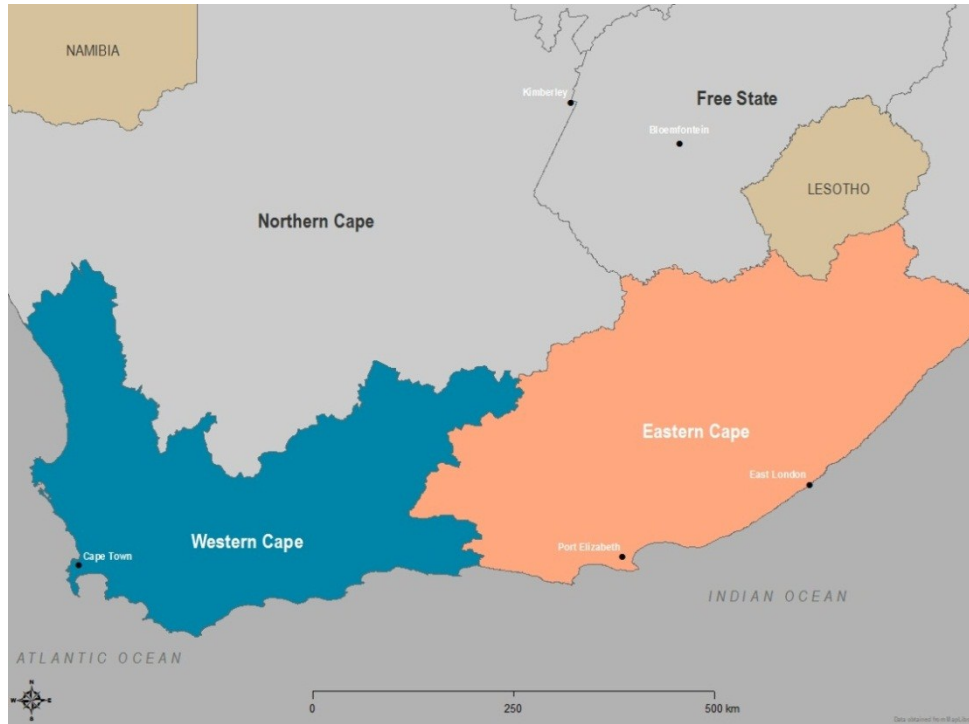


Figure 5. Western and Eastern Cape

External In-Migration

One of the most significant changes in patterns of migration since 1994 is the arrival of asylum seekers and refugees from the rest of the continent as well as from overseas (Peberdy, 2010). The largest claimant-generating countries between 1994 – 2001 were: Angola, Burundi, Zaire (Democratic Republic of the Congo) and Somalia (Peberdy, 2010). Figure 6. shows the total number of refugee applications by country of origin in 2006.

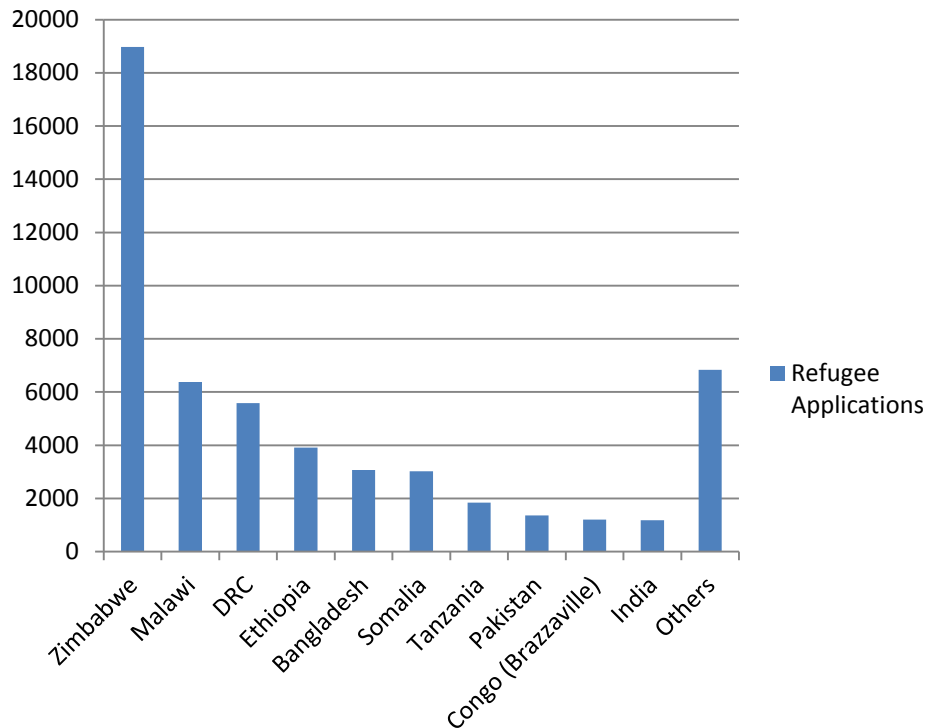


Figure 6. Refugee applications by country of origin, 2006 (Peberdy, 2010).

Contemporary movements of people to South Africa are characterized by considerable diversity of purpose and heterogeneity of social composition. While some migration is random, most of it is not. Migrants tend to follow specific paths and move along particular trajectories (Murray, 2003). Neither the international borders nor the immigration laws of the Republic of South Africa can halt the present permeation of foreign clandestine immigrants from African lands to the north. They are leaving behind not only the economic incapacity of African states in the north but also their societal horror: political oppression, ethnic discrimination, civil war, and genocide. South Africa for them is quite simply the most immediately available destination (Western, 2001). Upon arrival, these groups quickly form strong bonds amongst others of similar flight forming an African Diaspora spread throughout the country but clustered in and around South Africa's larger, urban centres. Studies reveal, for example, that the provinces of Gauteng and Mpumalanga are two choice immigration centres for Mozambicans (Muanamoha, 2010). Kinship, common language, and religious affiliations might be operative at home, but in South Africa, migrants seek wider connections rooted in shared regional origins or nationality (Murray, 2003).

Immigrant transnational communities create new forms of vernacular cosmopolitanism whose manifestations no longer refer to the acquisition of an identity through full assimilation to a new cultural milieu but rather to the maintenance of a hybrid, syncretic identity neither “here” nor “there” (Murray, 2003). Whereas people of African descent were permitted to enter the country prior to 1994 solely as contract workers in the mining and agricultural sectors of the economy, current immigration laws are designed to attract skilled foreign workers. In fact, the reality that thousands of undocumented immigrants are believed to be working in the country today implies that legal status does not necessarily place a constraint on a person’s ability to get a job (Zuberi, 2004).

The attempt to account for and monitor the activity of immigrants within the borders of South Africa is virtually impossible, but attempts have been made. The Southern African Migration System (SAMS) exists among countries with close historical, political, cultural, and economic ties. This migration system primarily covers a subset of SADC members including: Botswana, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Zambia, and Zimbabwe (Figure 7. below). Findings from the SAMS indicated that by the mid 80’s, there were over 100,000 immigrants from neighboring countries working in South Africa’s mining industry (Zuberi, 2004).

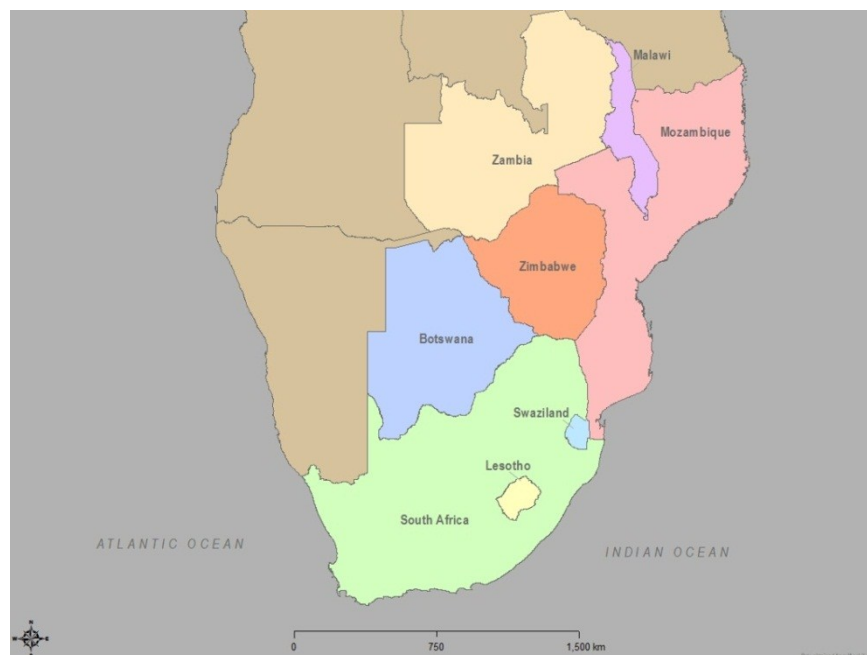


Figure 7. SAMS Members, 2004

In addition immigrants belonging to SADC nations do not require visas to enter South Africa, and many of them have social networks in South Africa that they can use to enter the country legally or illegally. It is likely that some SADC citizens take advantage of these conditions to migrate and search for work in South Africa even if they are undocumented.

Conflict Triggers

a. Othering

Othering is an inherently human condition, one that has been seen in many historic cases where groups undergoing “diminishing contrasts” yet engaging in one-sided exaggeration of the same increasingly diminishing contrasts, often resulting in group conflict. There are many examples of historic “othering” events through group conflict, from the discrimination against the Burakumin in Japan, the violence against blacks in the American South following the abolition of slavery, the violence between equals among the court nobility in France and Germany, the growth of anti-Semitism in Germany, the civil war in the Balkans, and the ethnic cleansing in Rwanda (Matsinhe, 2011). Inter-group conflict in the new South Africa is a complex and highly debated phenomenon.

In order to understand conflict in terms of how to prevent it, it is vital to identify the triggers of the conflict. Consistent with this statement is a tradition of research on group conflict that suggests group pride – whether ethnic, national, or gender based is the positive half of prejudice. De Figueiredo and Elkins’ research on group conflict dynamics asks whether group pride or “particularism” is the solution to ethnocentrism, or its very embodiment (de Figueiredo, 2003). They focus on a specific kind of in-group/out-group relationship, attitudes toward one’s nation and attitudes toward immigrants to that nation, where each is defined in terms of the “other”, meaning nationalists are defined in relation to non-nationals and immigrants are defined in relation to nationalists (de Figueiredo, 2003). Their research reveals that comparisons to another are central to group identity studies and that the prevailing approach of the study of ethnocentrism, in-group bias, and prejudice, presumes that in-group love and out-group hate are reciprocally related. Ethnocentrism states that there must be loyalty to the group, brotherhood within, and hatred and contempt for “the other” (de Figueiredo, 2003). Ethnocentrism gives rise to the patriot and the national, strengthening the identity of the in-group by defining it for what it is not.

The main difference between nationalism and patriotism is that patriotism is self-referential whereas nationalism is comparative, in fact mostly downwardly comparative. The established often imagine the physical aspect of the outsiders as marks of their inferiority, thus setting them apart as fundamentally different, a part of a collective fantasy evolved by the established group (Elias, 1994). During apartheid, the asymmetric power between the two groups of White and non-White was so great that the weaker group began to measure themselves with the yardstick of their oppressors (Elias, 1994). This inter-group dynamic exacerbated the apartheid-era culture of domination. A culture of domination is self-perpetuating and requires the presence of the “other” to dominate, whether the “other” is white or black. The challenge in a post-apartheid South Africa rests on the responsibility to use power and influence in a markedly different manner than the way it was wielded by the deposed oppressors (Jones, 2006). To quote Mamdani, “The political world set in motion by the modern state and modern colonialism generates subaltern identities endlessly, in binary pairs. We need to break out of the worldview of not only the cat, but also the rat, not only the settler but also the native. Unless we can break out of the worldview of the rat, post-colonialism will remain a purgatory punctuated by non-revolutionary violence” (Mamdani, 2001).

There is a combination of elements from studies on state violence that uncovers a postcolonial equation in which the colonized “other” transmogrifies into a hated “self”, which then is projected on to an imagined “other” (Ngugi, 1997; Soyinka, W). Because of their dress, mannerisms, and language differences some immigrants, particularly from West African countries are distinguishable from black South Africans, and immigrants from central and western African are more readily identifiable as a foreign “other” (Murray, 2003). The naming of others is a key component in the relationship between the politics of identity and the attachment to place in contemporary nation-states (Murray, 2003).

b. A Perceived Threat

For conflict to fully manifest itself there generally needs to exist more than just the passion and zeal for one’s country. A study by Feldman and Stenner (1997) suggests that authoritarian traits manifest themselves in intolerance or hostility only under a certain set of conditions, in particular the presence of a perceived threat (de Figueiredo, 2003). This is just the case in urban centres with active immigrant communities in South Africa where African non-nationals are viewed as the perceived threat by a majority

black South African nationalistic rhetoric. This staunch nationalism can be traced back to the replication of imperialist processes of cultural reification and binarization (Appiah, 1992). It has been well documented that immigrants, legal and illegal, are viewed as a threatening presence to a segment of the majority black South African population. Migrant workers and mobile ethnic groups are often cited as the major vectors of infectious diseases while foreign workers and hawkers are viewed as a threat to the local population because they compete for the available jobs, commodity markets and other facilities (Chirwa, 1998). Those who see themselves aggrieved choose an enemy that is perceived both as gaining undeserved advantages and as marginal, and hence socially vulnerable (Murray, 2003).

c. Youth Bulges

Recent research has revealed emerging interests in macro-demographic triggers of conflict such as migration, ethnic group dynamics, and youth bulges, referring to the number of young persons in a population (Urdal, 2004; Urdal, 2005; Urdal, 2006). The first comparative empirical study of the role of youth bulges in armed conflict was undertaken by Nazli Choucri (1974). By comparing qualitative case studies of 45 'local conflicts' but not comparing these with any control cases, she found that the existence of large youth cohorts did play a minor role in ten conflicts, but was never a crucial factor in the initiation of these conflicts. In his studies on the demography of conflict and violence, Henrik Urdal suggests that micro-demographic triggers such as total population, high population pressure on potentially arable land, and large refugee populations must also include a macro-demographic trigger for conflict to occur (Urdal, 2005). In an empirical test of these propositions, the study suggests that youth bulges are particularly associated with an increasingly high risk of internal conflict in starkly autocratic regimes, but a similar effect is also found for highly democratic countries (Urdal, 2006). Urdal's research on youth bulges focuses on whether youth bulges may increase the risk of three different forms of internal political violence: armed conflict, terrorism and riots (Urdal, 2006). This study adds to the existing literature on the demography of conflict in several ways. It discusses how youth bulges may affect the risk of political violence, drawing on two prominent theoretical perspectives concerning opportunity versus motive for civil war, as well as on recent advances in economic demography, to identify a possible causal explanation for why cohort size in itself may influence the propensity for political violence (Urdal, 2006; Urdal, 2004).

While previous studies have tested the youth bulge hypothesis for high-intensity civil wars, this research studies new low-intensity conflict data and finds robust support for a relationship. Urdal identifies relevant contextual factors believed to interact with youth bulges to increase the risk of political violence and tests these propositions empirically. He provides the first empirical results suggesting that youth bulges may also increase the risk of terrorism and more spontaneous forms of political violence like riots, and violent demonstrations. It is suggested that youth bulges may be a better predictor of low intensity political violence than large-scale wars (Urdal, 2006). Rapid population growth together with the lack of unemployment opportunities for youths, rather than environmental degradation, represents a considerable risk of civil violence and “failed states” (Ware, 2005). Research shows that during times of political instability, the risk of large-scale violent dissent increases substantially (Carey, 2007).

It has been argued that high unemployment among educated youth is one of the most destabilizing and potentially violent sociopolitical phenomena in any regime (Braungart, 1984; Winckler, 2002). It's not enough to increase level of education of cohorts, but to then be able to successfully transition these educated individuals into the labour market. Huntington argues that societies are particularly conflict prone when the number of young people aged fifteen to twenty-four reaches a “critical level” of 20% of the overall population in a country (Huntington, 1996).

It is argued that a large population makes it more difficult for regimes to keep tight control (Fearon & Laitin, 2003). Identifying the structural causes of political violence potentially enables us to reduce the risk factors (Urdal, 2006). One of the leading theorists on the role of youth in political violence, Jack A. Goldstone, claims that youth have played a prominent role in political violence throughout recorded history and the existence of large youth bulges have historically been associated with times of political crisis (Goldstone, 2001). Among prominent historical events that have been linked to the existence of youth bulges is the role played by the historically large youth cohorts (caused by the rapid decline in infant mortality some 20 to 30 years earlier) in the French revolution of 1789, and the importance of the economic depression hitting the largest German youth cohorts in explaining the rise of Nazism in Germany in the 1930s (Moller, 1968; Urdal, 2004). Figure 8. provides a model for the assumed relationship between youth bulges and armed conflict as put forward by Urdal. The model assumes that

youth bulges are likely to experience unemployment because they increase the supply of labor substantially when entering the labor market.

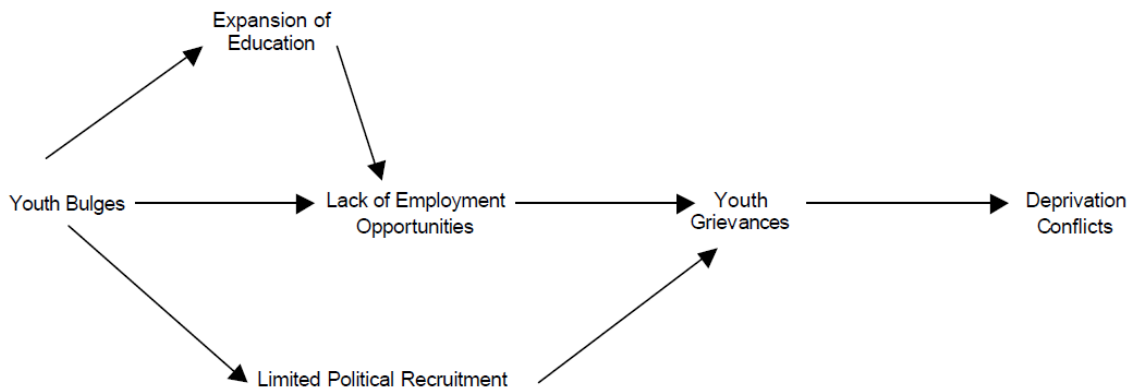


Figure 8. Youth Bulges as a Source of Armed Conflict (Urdal, 2004).

Generations that are considerably larger than their parents' generations are likely to run into several societal 'bottlenecks', straining social institutions. Most theoretical works concerned with youth bulges point to limited absorption capacity of the labor market as the most important factor for causing grievances among youth. Unemployment in any society weakens the political system's legitimacy and stability. Such conditions produce a climate of radicalism particularly among unattached youth who have the least to lose in the gamble and struggle for revolutionary gain (Braungart, 1984; Urdal, 2004).

A second hypothesis Urdal's research tests is the less economic growth a country experiences, the stronger is the conflict conducive effect of youth bulges. Well-educated youth have often been observed in central positions in episodes of riots, from the streets of Jakarta and Teheran, to Belgrade and Harare demanding democratic reforms. One reason why students would want to revolt is if their aspirations of employment and political influence are not met. Choucri speculates, "the greater the unemployment among educated youth, the greater the propensity for dissatisfactions, instability, and violence" (Choucri, 1974; Urdal, 2004).

The underlying argument of why youth bulges create opportunities for violent conflict lies in the sheer number of individuals that make up the bulge. Relative to previous generations, the pool of potential rebels increases and, since large youth cohorts stretch the limits of social institutions such as the labor market, youth bulges in themselves are likely to produce more aggrieved individuals. In addition to being

more open to change, young people generally have fewer responsibilities for families and careers and are free of constraints that tend to make activism too time consuming or risky for other groups to engage in (Goldstone, 1999). Some empirical evidence suggests that ethnicity is the form of social segmentation that is most likely to be transformed into violent conflict as a result of the existence of youth bulges. Huntington argues that the existence of large youth bulges account for many of the inter-civilizational conflicts in the late twentieth century. He holds that the most serious episodes of ethnic violence in Sri Lanka occurred during periods when the rioting ethnic groups had their youth bulge peaks (Huntington, 1996). Subsequent research validates these findings by revealing a significant correlation between risk of ethnic conflict and youth bulge presence (Esty *et al.*, 1998).

Past research reveals, however, that the presence of a significant youth bulge alone is not enough to directly influence inter-group conflict. It has been discovered that an auxiliary set of triggers must be present within a youth bulge for the successful transition of aggrieved youth to rebellious youth to occur. The first trigger is relative deprivation. A gap must exist between what a group believes it should possess and what it actually possesses. The second trigger is a strong collective identity amongst the deprived, and the third trigger is poor service delivery by the government (Urdal, 2004). It is the combination of these three triggers together with the presence of a large youth bulge that significantly increases a region's susceptibility for internal armed conflict.

Moving beyond demographics as a primary contributor for conflict, there exists an exhaustive list of research devoted towards the analysis of development within a society as causal towards violent conflict (Collier & Hoeffler, 2001; de Soysa, 2002; Hauge & Ellingsen, 2001; Hegre *et al.*, 2001; Henderson & Singer, 2000). Sen argues that mortality is a strong indicator of a country's level of development, specifically infant mortality (Sen, 1998). The level of infant mortality in a society is highly dependent on both material living standards, levels of education, gender inequalities and health care systems.

These factors provide evidence that the combination of youth bulges and poor economic performance can be explosive. This is bad news for regions that currently exhibit both features to a large extent, often in coexistence with intermediary and unstable political regimes, in particular Sub-Saharan Africa and the Arab world (Urdal, 2004).

The work of human geographers can be grouped into two widely accepted traditions of conflict study. The first tradition, often coined the “greed” perspective, is called the opportunity-oriented tradition and has its roots in economic theory. This tradition focuses on the structural conditions that provide opportunities for a group to engage in conflict with another group (Collier, 2000). The second tradition is called the motive-oriented tradition, or “grievance” perspective, and has its origins in relative deprivation theory. Theorists implementing the grievance perspective during the analysis of a conflict event tend to view the eruption of political violence as a rational means to redress economic or political grievances (Gurr 1970; Sambanis, 2002). Collier further argues that higher levels of education among men act to reduce the risk of political violence and in a related analysis of 15 industrialized countries over a period of more than 20 years, Korenman & Neumark (1997) find that large youth cohorts are associated with a significant increase in youth unemployment rates. So not only do youth bulges provide an unusually high supply of individuals with low opportunity cost but an individual belonging to a relatively large youth cohort generally also has a lower opportunity cost relative to a young person born into a smaller cohort (Urdal, 2006). The study reveals that large youth bulges increase the risk of armed conflict.

Group Grievances

Xenophobic violence is viewed as a deeply institutionalized legacy of South Africa’s apartheid past and has to be specifically contextualized against a broader pattern of attacks conducted against African non-nationals since the beginning of 1994. African non-nationals are most likely to suffer public violence by South Africans who blame them for crime and unemployment and see them as unfair competitors in the struggle for jobs, houses and other resources deemed ‘deserving’ for the South Africans whose citizenship makes them legitimate heirs to the spoils of democracy (Nyar, 2010). Foreigners who have come to South Africa to work, study, or for other purposes have experienced a dramatic upswing of harassment and intolerance in their daily lives (Murray, 2003).

Grievances tend to arise if possibilities to influence the political system and attain elite positions are limited (Urdal, 2004). The existence of objective deprivation, the mere fact that people are poor, seldom produces strong grievances. Rather, violent conflicts may erupt from cases of ‘relative deprivation’ (Gurr, 1970). Individuals and groups can experience relative deprivation when they perceive a gap between the

situation they believe they deserve and the situation that they have actually achieved. This is certainly the case in many areas of South Africa. Within South Africa, there are several strong positions held among South African nationals concerning the country's immigration policies. The most common grievances voiced by South African nationals towards African non-nationals can be divided into five major categories.

I. Competition for Jobs

There are those who believe in opening South Africa's doors to skilled migrants and investors who can make substantial contributions to the country's development. But there are also those who oppose immigration as they believe immigrants take jobs away from South Africa nationals and that they aggravate the high levels of unemployment (Marion, 1998). These opponents argue that immigration is an obstacle to economic integration for the African majority who anticipated gains in employment and living standards after the demise of apartheid. These beliefs are so strongly held by some South Africans that violence has often been unleashed on unsuspecting groups of foreign-born workers, particularly street vendors in cities like Johannesburg (Zuberi, 2004). Interestingly enough, disgruntled South Africans have, however, focused their wrath almost exclusively on fellow Africans, virtually ignoring the influx of immigrants from Eastern Europe and Asia (Murray, 2003). In their study on rentier state theory, Basedau & Lay discover that grievance transmission channel suggests that perceived deprivation of social groups or indirect negative economic consequences of resource wealth create "grievances" and trigger violent uprising (Basedau, 2009). The concept of the rentier state was developed with regard to Middle Eastern oil-producing states such as Iran and the Gulf Monarchies and argues that the function of the state in rentier economies is to distribute rent (Beblawi, 1987; Smith, 2004). This adverse economic environment has heightened the tensions between local workers and foreign migrant workers.

II. Competition for Women

Marion describes through the use of polls, surveys and focus groups how many non-national males are viewed by South African national males as competitors for women. Past research also reveals that there is a perception that South African men are assumed to mistreat local women and foreigners alike (Marion, 1998).

III. **Spread of Disease**

Within South Africa, the politics of disease, and HIV/AIDS in particular, can hardly be separated from the general xenophobia associated with the competition for jobs (Chirwa, 1998).

IV. **Spread of Crime**

The popular stereotype of foreigners constructed by many South African nationals is that foreign immigrants are linked to criminal activities. For those who harbor anti-immigrant sentiments, unwanted foreigners epitomize the shape-shifting modalities of a racialized “otherness”. This sentiment is reiterated at all scales, arguably beginning with the government. Such sentiment can lead to generalizations and stereotyping as evidenced by the unsubstantiated claim made by former Senior Police Superintendent Johan Steyn that, “90 percent of criminals who break into homes, commit armed robbery and rape the women are Zimbabweans” (Murray, 2003). By casually associating Zimbabweans with bank robberies and house break-ins, Mozambicans with gun running, and Nigerians with drug trafficking, South Africans stamp immigrant communities with an essence of criminality (Danso & McDonald, 2001). Claims, whether substantiated or not, that link immigrants with criminality contribute to a climate of hostility and distrust and also fortify the distinction between “us” and “them” (Murray, 2003). Media such as TV and film, as they mix music, background sounds, words and visual images together, are particularly adept at invoking such dispositions, and also at working upon them (O Tuathail, 2003). In many ways, the media exacerbates these feelings held by many South Africans through xenophobic language.

V. **Poor Service Delivery**

In 1994, around 12 million people in South Africa lacked access to clean drinking water, and 21 million lacked adequate sanitation. Only 36% of the population had access to electricity. Estimations of unemployment rates have ranged from 25% to 40%. But they were as high as 70-80% in some urban communities (Peberdy, 2010). Access to housing and service delivery remain extremely problematic leaving many black South Africans, and to a lesser extent, Coloured South Africans, incredibly marginalized (Peberdy, 2010).

Xenophobia in the New South Africa

Racism is the name for that dimension by which persons assigned to another group are kept at a distance because they are considered racially inferior. Xenophobia can designate the way that others are kept at a distance because they are considered different (Banton, 1996). Universalism says that “universalist conception achieves explicit formulation” and its origins can be traced back to the early Roman Empire when, in AD 212, Roman citizenship was extended to all free men (Banton, 1996). Another example of early universalist national identity can be found in the sixteenth century when the Catholic Church recognized that the indigenous people of the Americas had souls. Further examples can be found within the French Revolution with the adoption of the *Declaration des Droits de l'homme et du Citoyen* (Declaration of the Human and Civil Rights), as well as within communist doctrine (Banton, 1996). The modern geopolitical imagination came into being with the establishment of the modern territorial state system in 16th – 17th century Europe. One of its most distinguishing features of modern geopolitical imagination is what Agnew terms “a state-centric account of spatiality” characterized by three geographical assumptions: 1) that states have exclusive sovereign power over their territories, 2) that “domestic” and “foreign” are separate and distinct realms and 3) that the boundaries of a state define the boundaries of “society” (Agnew, 1998). Universalism and a modern geopolitical imagination are relevant to conflict studies within South Africa because they serve as the backdrop to explain contemporary group identity formation theory within the country. Together they help highlight five separate theories of othering as seen across the geographic landscape of South Africa today.

The first theory, known as Biocultural Theory, locates xenophobia at the level of visible differences, or “otherness”, i.e. in terms of physical biological factors and cultural differences exhibited by African foreigners in the country; essentially othering through physical differences. Biocultural Theory places an uneven loathing of African foreign nationals squarely on their alleged visible “otherness”.

The second theory is known as State-Cited Theory and situates xenophobia within the apartheid/post-apartheid transitional period, wherein broad social institutions such as the media produce negative representations of Africa and African foreigners, representations that are congruent with the state’s criminalization of African foreign nationals as “illegals”, “illegal aliens”, “illegal immigrants”,

criminals”, and “drug traffickers”, most notably by the Department of Home Affairs (DHS) and the South African Police Service (SAPS) (Harris, 2002).

The third theory is known as Scapegoat Theory and blames African nationals for social ills such as crime, disease and unemployment rates. This theory is the direct manifestation of frustration by the poor and unemployed citizens of South Africa.

The fourth theory is known as Isolation Theory and contends that the hostility towards foreign nationals issues from the prolonged seclusion of South Africans, particularly blacks, which precluded contact not simply with the world beyond Africa but with Africa itself. The demise of the apartheid regime put a direct end to that isolation (Morris, 1998). Many researchers believe that South Africa’s historic isolation from the continent is a major incubator for the widespread distrust and suspicion aimed at foreigners (Murray, 2003).

The fifth and final theory is known as Relative Deprivation Theory and contends that the dissatisfaction and frustration with the inadequacy and slowness redressing the inequalities of apartheid are leading the deprived masses to turn against foreigners. It is believed that this theory is the ideal situation for a phenomenon like xenophobia to take root and flourish (Tshitereke, 1999).

The apartheid regime used “othering” in such a way that strengthened a broad and homogenous class of “non-whites” into one group. As apartheid fell, so did this classification, thereby diluting the non-white proportion of the country into smaller, weaker groups of identity, causing these smaller groups to be more prone to conflict with one another (Marion, 1998). In the 1990s, as authoritarian regimes collapsed world-wide, O’Donnell & Schmitter identified three steps in a transitional process: 1) liberalization, 2) democratization, and 3) socialization. In the first step, liberalization, a range of rights and liberties are extended to the populace previously denied them, as occurred in South Africa. In the second step, democratization, citizenship, participation and representation for all in the political process is extended, again as has occurred in South Africa. However, within the third step, socialization, social and economic equality are the goal. It is here where South Africa has failed. The key weakness of the author’s assumption was to assume an automatic sequence from one step to another, which has not occurred here or in many other nations (O’Donnell, 1998).

A generalized term used by those researching the tensions and ensuing conflict in a post-apartheid South Africa is “Africa’s fear of itself”, a term that is exemplified by the loathing of black foreign nationals in South Africa, particularly by the nation’s ex-victims of apartheid. This term is increasingly becoming a fundamental component of South Africa’s collective identification and public culture. Since the collapse of apartheid, the phantom of “Makwerekwere” (slang for foreigner, illegal, outsider) has been constructed and deployed in and through public discourse to render Africans from outside the borders orderable as the nation’s bogeymen (Matsinhe, 2011; Petkou. 2005). Historically, South Africa has set itself apart from the rest of Africa as a “European Outpost”, so naturally after the fall of apartheid, the “European Outpost” quickly became “Africanized” (Adebayo, 1996).

Several theses have been put forward to explain what is construed as xenophobia in South Africa. During the apartheid era, the imposition of the will of the oppressive white minority over that of a weaker non-white majority caused self-contempt and self-loathing among the weaker group. Research shows that over time, this constructed identity will often manifest itself in destructive behaviour including contempt and destruction of those who resemble them the most (Matsinhe, 2011). This explains in part why the victims of xenophobic discrimination are almost always black non-nationals and not white tourists, and that the perpetrators of the xenophobic discrimination are almost always black South African nationals. All across the country, white non-nationals are generally viewed by the masses as wealth creators and therefore respected, whereas black non-nationals are viewed negatively (Shindondola, 2002).

A joint statement by the Southern African Migration Project (SAMP) and the South African Human Rights Commission (SAHRC) indicates that the victimization of black South Africans is being replaced by the victimization of African foreigners, noting that not only are more and more citizens becoming more xenophobic but they also perceive “almost exclusively black foreigners” as directly responsible for rising unemployment and violent crime (Crush, 2001). During the years of apartheid, the colonized began to idealize their identity in the image of the colonizer, out of which was born the idea of South African Exceptionalism. The idea required that South Africans have or are meant to have lighter skin complexions than Africans from the greater continent (Matsinhe, 2011). The ideology of South African

Exceptionalism is fundamental in the study of the geography of othering in a post-apartheid South Africa. It is important to note that the condition of possibility for the belief of exceptionalism is a mythologisation of selective reading of history that represses internal negativities (i.e. apartheid and its legacy, growing HIV/AIDS pandemic, persistent ignorance/illiteracy, growing poverty/unemployment/inequality, multiplication of shanty towns, increasing violent crime, and astonishing rates of rape (Matsinhe, 2011).

The other product of post-apartheid identity formation is the aversion towards those similar but different and is manifested by the projection of the self, accrued through generations of vilification of the other (Matsinhe, 2011). During the apartheid-era, the geography of South Africa was divided along lines of skin colour. Black South Africans were viewed as just that, disregarding historic, ethnic, and tribal differences. The defeat of the apartheid regime at the hands of the ANC solidified a form of exclusive black South African nationalism that has only turned violent in the presence of group grievances.

Research validates the correlation between South African nationalism and prevalence of xenophobia in South Africa (Neocosmos, 2008). The new South Africa has inherited a new form of identity formation that contains the following four traits: 1) South African Exceptionalism, 2) Imagined Citizenship, 3) Self-Contempt, and 4) Narcissism of Minor Differences (Matsinhe, 2011). Relations between South Africans and African foreign nationals are a striking case of narcissism of minor differences. Immigrants are sources of fear and anxiety the more they are imagined as invisible intruders. Immigrants from the southern African region in particular assimilate easily in South African given the cultural and economic hegemony of the country in the region (Matsinhe, 2011). It is the combination of these four traits that has produced deeply rooted, and complex xenophobic sentiments within the hearts and minds of many black South African nationals. The SAHRC has reported that illegal immigrants are often identified through profiling of skin colour, language, hairstyle and manner of dress (Matsinhe, 2011).

Today urban apartheid geographies have remained largely intact, linked with the rapid increase in housing prices in the post-apartheid period and a government housing delivery programme unable to meet the demand for adequate housing (Jara, 2010). This has resulted in mass movements of people into shack areas around larger, urban centres. Tensions are generated as people compete for land, employment and business opportunities in spaces with tenuous material, political and social infrastructure

(Jara, 2010). Although not as negative or as widespread as one would be led to believe by reports in the popular press, anti-immigrant sentiment is, nevertheless, a real concern. Physical attacks on foreign street vendors in Johannesburg by South African traders, xenophobic press coverage, and prejudiced comments by senior politicians about the “flood of illegal aliens” in the country are indicative of the kind of rhetoric that permeates the public debate on foreigners of African origin living in South Africa (McDonald, 2000).

The Violence of May

Between 11 and 25 May 2008, 62 people, 20 of whom were South African nationals, died in Johannesburg, Cape Town, Durban, and to a lesser extent, parts of the Free State and Eastern Cape. The wave of violence left 700 injured and it is estimated that at least 35, 000 African non-nationals were driven from their homes and displaced. An un-estimated number of shacks and small businesses were burned down, and the belongings and properties of foreign nationals worth millions of rands were looted and dispossessed. The reaction of the South African government was slow. The eventual declaration of a national state of emergency and the deployment of the South African National Defence Force (SANDF) was too late to prevent the full brunt of violence being perpetrated (Nyar, 2010; Danso, 2001). It drew disturbing parallels with the way in which difference was invoked by the apartheid government to justify violence, oppression and injustice. The revival of the apartheid-derived term ‘black-on-black violence’ invoked painful historical memories of the systematic devaluation and destruction of black lives under apartheid. It was also a keen reminder that apartheid legacy-institutionalization of violence as a means of communicating grievances and achieving political leverage is still very much embedded within the national psyche (Nyar, 2010).

Authorities in the field agree that it is xenophobia, and not any other form of semantics that is largely responsible for the violence (Everatt, 2011). It is equally clear that the violence will recur. Since May 2008, xenophobic tensions have continued in its earlier form of sporadic, poorly reported acts of violence, though no less murderous. Whether or not the violence of May was xenophobic, a point repeatedly rejected by then president Thabo Mbeki and most of his fellow ANC leaders, who insisted it was merely naked criminal activity, seems rather trite in the face of the murder, rape, injury, theft and displacement

that resulted (Everatt, 2010). While the violence was mainly directed at foreign-born African migrants, victims also included “*shangaans*” (term used to describe South Africans from Limpopo in particular, who failed linguistic tests such as knowing the isiZulu word for elbow; *indololwane*) (Everatt, 2010; Vromans, 2011).

Extensive research has been carried out on determining the immediate triggers behind the xenophobic violence of May 2008. Researchers agree that to a significant degree, spiraling interest rates, frequent electricity blackouts, soaring oil/food prices, high unemployment, poor delivery of social services, and high crime rates all played at least some role in exacerbating the violence (Everatt, 2010). The structural characteristics of the violent outbreaks were the same: the aggressors were black insiders and they blamed their victims for crime, unemployment, the spread of HIV/AIDS and patronization of local women. The significant difference between May 2008 and attacks previous and since is a matter of magnitude (Matsinhe, 2011). South Africans savagely attacked foreigners, stole their goods, raped women, and behaved in every degrading way that they accused foreigners of doing (Everatt, 2010). It is a common cause that despite remarkable achievements in some areas, despite social grants and free basic services, despite development programmes in virtually every sector, despite Black Economic Empowerment (BEE) and its follow up Broad-Based Black Economic Empowerment (BBBEE), government has significantly failed to address inequality in South Africa (Everatt, 2010).

In May 2008 South Africa’s three largest cities of Johannesburg, Durban and Cape Town were rocked by an explosion of xenophobic violence directed towards African non-nationals living in informal settlements, townships, suburbs, and central business districts (Peberdy, 2010). Other cities and small towns in South African also saw attacks on foreigners. Origins of the xenophobic violence can be traced back to the township of Alexandra, Johannesburg in late 1994 and early 1995 (Abrahams, 2010). Sporadic attacks, murders and displacement continued across the country until the violence of May 2008 (Peberdy, 2010). The random, unpredictable, unprovoked nature of everyday urban violence directed at foreign immigrants makes the xenophobic attacks all the more frightening (Murray, 2003). The first substantial work to dissect the May 2008 violence was a volume published by the University of the Witwatersrand, following a colloquium on “Violence and Xenophobia in South Africa”, in late May 2008

(Everatt, 2011). Results from these studies indicate that contributing factors to the xenophobic outburst include structural, social, economic and spatial inequalities as well as a general reliance on cheap labour, housing shortages, township retail competition, racism, a general history of violence to advance sectional interests and a scarred national psyche (Everatt, 2011). There existed a seriously scarred national psyche in early 2008 due to, as mentioned before, poor service delivery, high interest rates, high costs of living, competition over Reconstruction and Development Programme (RDP) housing, corrupt government officials, and high unemployment rates (Everatt, 2011; Parsley, 2010).

Researchers agree that it is not a matter of if violence on the scale of 2008 will reoccur, but when it will reoccur (Everatt, 2011). Due to an active and vibrant civil society sector, South Africa has a basis of research, awareness and warnings on which it could have drawn to prepare for the outbreak of violence (Nyar, 2010). Research organizations such as the Center for Policy Studies (CPS) and Institute for a Democratic South Africa (IDASA) had repeatedly warned of increasing xenophobic attitudes and the potential for attitudes to harden into violence. The 2006 Southern African Migration Project (SAMP) Xenophobia Survey confirmed that in comparison to citizens of other countries worldwide, South Africans are the least open to outsiders and advocate the greatest restrictions on immigration. 67% of SAMP respondents indicated that African non-nationals use up resources, 49% believed that foreign nationals bring disease, and that they are responsible for high crime levels. 84% felt that South Africa is allowing “too many” African non-nationals into the country and consequently that they should not be accorded any rights or protection from the state (Nyar, 2010).

The dynamics of the May 2008 attacks were such that it was able to spread rapidly across various geographical areas and provincial borders. It quickly migrated from Gauteng to other provinces such as Kwa-Zulu Natal, Eastern Cape and the Western Cape, and to a lesser extent, the Free State, North West and Limpopo Province. The xenophobic attacks of 2008 denoted a marked difference in scale, for which the increasing momentum of earlier incidences of violence could well be seen as a forewarning.

III. STUDY SITE

South Africa is administratively divided into nine provinces (Figure 9.), and further divided into 53 districts (47 district municipalities and 6 metropolitan districts). These districts are then divided into 248 local municipalities. The nine provinces vary in a number of ways. The Western Cape has the highest human development index (HDI) followed by Gauteng, while the ten most deprived districts in 2007/2008 were located in KwaZulu-Natal (6), Eastern Cape (3) and Limpopo (1) that are all classified as rural development districts. Conversely, all districts within the Western Cape were classified as the least deprived as were three of the six metros, namely the City of Cape Town and Nelson Mandela metro (Eastern Cape) and the City of Johannesburg (Gauteng) (Sartorius, 2011).

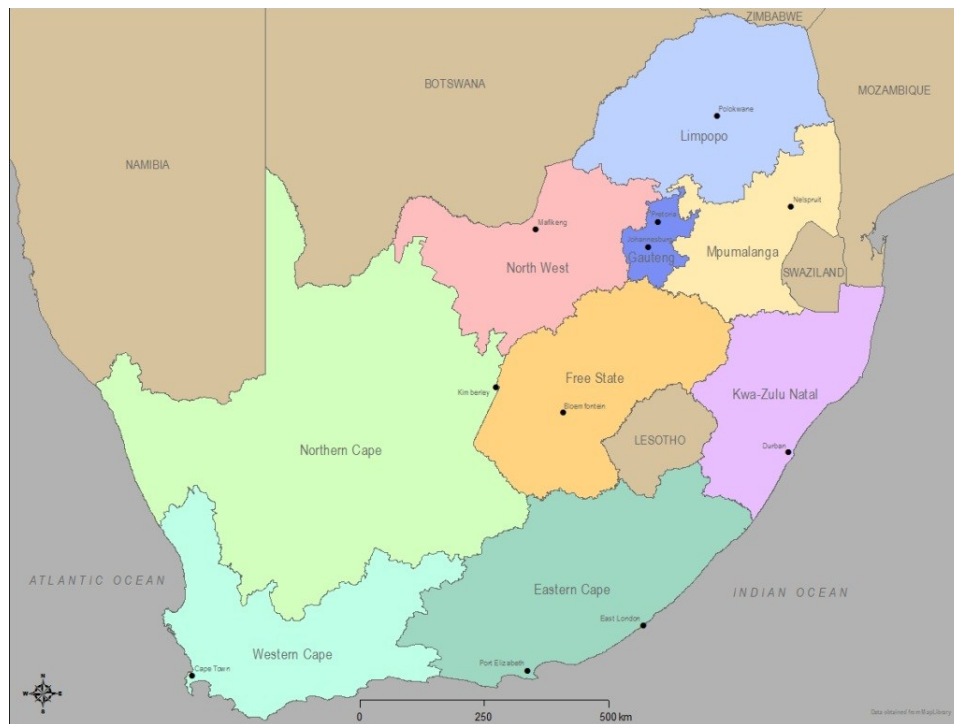


Figure 9. The Nine Provinces of the Republic of South Africa.

The location of the xenophobic attacks of May 2008 (Figure 10.) tended to be located in poor urban neighborhoods and informal settlements in different parts of South Africa where foreign nationals and South African citizens lived in mixed communities and in close proximity to each other (Nyar, 2010). After 1994, urban spaces became re-defined by dual processes of rapid and sustained migratory streams of foreign nationals entering South Africa. Such migratory streams included sustained numbers fleeing

political turmoil in neighboring Zimbabwe. Rural-based black South Africans also constituted part of the influx to cities in search of jobs and improved economic opportunities and prospects. The presence of large numbers of African non-nationals living in close proximity to poor South Africans in squalid and congested urban living spaces has had the effect of breeding extreme social discontent (Nyar, 2010).

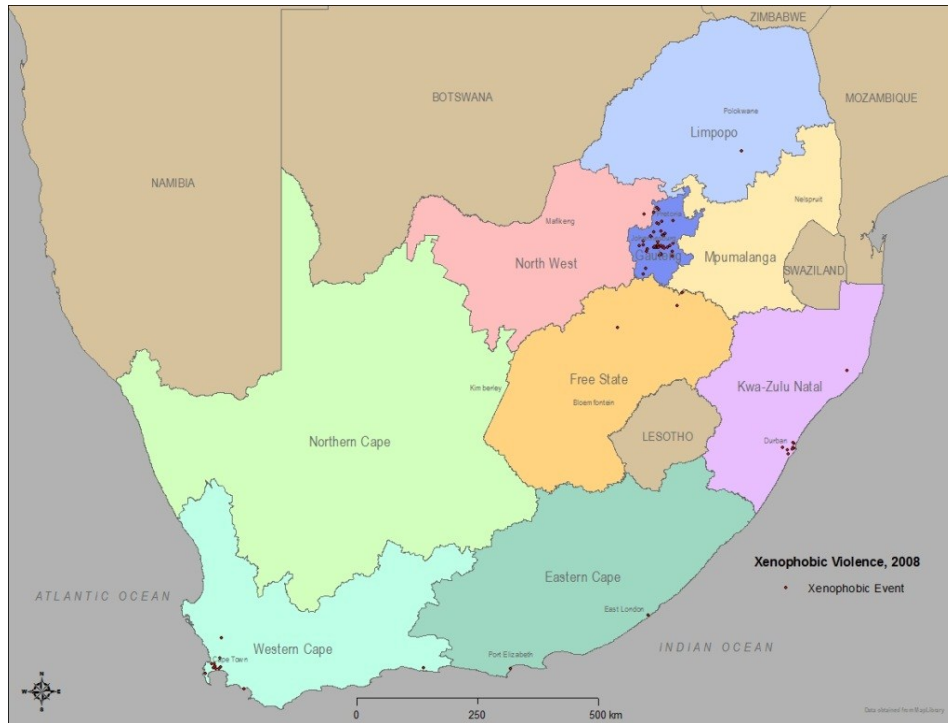


Figure 10. Locations of Xenophobic Violence, January – July 2008 (Everatt, 2010)

Johannesburg

South Africa is in the top three most unequal countries on earth, and Johannesburg among the most unequal cities on earth, joined by Pretoria (Everatt, 2010). On the whole, cities remain spatially divided and black poor and working class still living in geographically marginalized and peripheral areas of the city which are under-serviced and marked by high levels of unemployment, poverty, economic marginalization and social crises (Peberdy, 2010). In many South African cities, migrants face many difficulties ranging from discrimination and prejudice to outright violence and intimidation, but the epicenter of anti-immigrant xenophobia is the Greater Johannesburg metropolitan region. Like similar cities, Johannesburg has become a magnet for “bi-polar migration”, drawing into its orbit large groups of individuals in the survivalist enterprise (Murray, 2003). The hostility and violence directed at foreign

immigrants is an integral feature of everyday life in the Johannesburg metropolitan region. It is difficult to investigate the poor treatment of immigrants however, because the available evidence consists largely of anecdotal, sketchy stories sensationalized in newspaper accounts or passed on in urban legend (Murray, 2003).

21 key urban areas of the country contribute 70% of the national economy. Johannesburg is the only city in South Africa to be classified as a world city. Whereas Cape Town and Durban are port cities key to South African trade, Johannesburg serves as an economic and trade hub for the country and region (Peberdy, 2010). In 2001, some 56% of South Africa's population was found to live in cities.

Johannesburg, Cape Town and Durban along with Ekurhuleni and Tshwane (Pretoria) are the country's core urban regions (Peberdy, 2010). There has been a significant increase in the rate of urbanization since the early 90's as racial restrictions on movement and residence were lifted. Today, internal migration is a key feature of the population growth of cities such as Johannesburg (Peberdy, 2010). Despite being sites of wealth creation, South Africa's cities are also sites of great inequality and poverty, the official unemployment rate for all cities averaging over 25% in 2001 (Peberdy, 2010).

The inception of the xenophobic attacks in Alexandra is critical in terms of explicating an understanding of the anomalous nature of the violence. Alexandra is a well-established township with a history of sheltering migrants and immigrants. It is also historically well known as a stronghold of civic activism and radical democratic politics. However, Alexandra was unable to contain high levels of frustration and discontent over living conditions from boiling over into unrestrained violence against foreign nationals living in the township alongside South African citizens (Nyar, 2010). The violence was characterized by weapons used such as pangas (a type of axe), machetes, petrol bombs, bricks and stones, as well as the violence committed such as murder, beatings, burnings, rape, theft and looting (Nyar, 2010).

Cape Town

In Cape Town in 2006 an estimated 22% of all households lived in informal dwellings, including almost 60% of the city's black households (37% in informal settlements and 22% in backyards) and 7% of Coloured households (2% in informal settlements). Some 18% of Cape Town's households lived in

overcrowded conditions (29% of black and 21% of Coloured). South African cities are also facing social crises. Health care is a particular problem for cities. HIV prevalence rates in South Africa are amongst the highest in the world, in part because the high rate of circular migration within the country creates conditions which encourage the spread of the virus. HIV prevalence rates from antenatal clinics in 2006 were 17% in Cape Town, 32% in Johannesburg, and 42% in Durban (Peberdy, 2010). Communities situated within urban areas of the country, particularly those on the periphery, also face challenges of crime and violence, some of which is related to drug use (Peberdy, 2010).

Following the lifting of the “Coloured Preference Area” between 1985 and 2005 the black population of the city of Cape Town increased from less than 200,000 to over one million (Peberdy, 2010). Under apartheid, the legal status of black South Africans, particularly in the Western Cape, was little different from that of African people who entered the country illegally from beyond South Africa’s borders. They were effectively foreigners in their own land (Dodson, 2000). The rapid influx of both African non-nationals as well as Black South African nationals into the Cape over the past two decades has caused extremes on both sides of the socioeconomic divide to be brought together. This has in many ways led to tensions between groups living in the area. One of several places to have experienced such conflict is Mizamoyethu, an informal settlement located in Hout Bay, Cape Town.

Practically since its inception in 1991, Mizamoyethu has seen tension between South African nationals and foreign-national residents (Dodson, 2000). Residents of Mizamoyethu compete not in some abstract economic sense, but directly for the very same jobs, undercutting each other in wage bargaining for work on the same fishing boats and beating the same streets seeking employment in the houses and gardens of their wealthy white neighbors (Dodson, 2000). Lacking either skills or capital, and with only limited social support networks, their position in the urban system is both highly precarious and jealously guarded (Dodson, 2000). Feelings of resentment and envy towards even these limited levels of economic well-being are hardly surprising in themselves, and are exacerbated by the perception that foreigners have “stolen” something from South Africans. Such material differences, and the structural forces which underpin them, are the primary source of tension in the community (Dodson, 2000). Certainly, some of the foreign respondents could afford to live in more formal settlements, but widespread

hostility towards foreigners and the lack of clarity about their residence status in South Africa may preclude, or at least discourage, them from entering the formal property market elsewhere in Cape Town. For those without official residence status in the country, places like Mizamoyethu are also relatively easy places in which to be invisible from the authorities (Dodson, 2000).

Durban

Durban is intimately linked to the history of Zulu identity and class formation, to the making of segregation and to regional popular protest (Freund, 2001). African men came to labour in Durban, particularly in the transport sector and in the homes of settlers. In addition, a large population of Indians lived in Durban. Although indentured workers were brought to Natal from 1860 to work in the sugar fields, a significant and growing percentage were involved in other economic activities, for instance the Natal Railways. A large barracks housed hundreds of Indian families on the edge of the city centre to serve the railways while many gathered around Durban where they reconstituted Indian family life and were able to combine employment (increasingly, from the 1920s, industrial employment) with fishing, farming, commercial and artisanal activity (Freund, 2001). The reasons for the Indian presence on the edge of Durban were twofold: it was an attraction for many to live on land where non-wage sources of income could be practiced, and the living was cheap and relatively uncontrolled by the state, by the 1920s, it had become very difficult for Indians to buy houses or land in areas of town that whites had staked out for themselves (Freund, 2001). As Swanson pointed out, moreover, the problems for Indian merchants were even greater due to the biased local and state's command of licensing rights (Freund, 2001).

Moreover, segregation, while increasingly enshrined in national legislation, was not an entirely practicable policy financially. Voluntary immigration supplied the fuel for industrialization in Durban; therefore, it would not be financially viable to completely segregate (Freund, 2001). The state operated on the theory that races were naturally antagonistic to each other and needed to be separated in the interests of peace, with neutral zones between them (Freund, 2001). In fact, white commercial and residential flight was a notable feature. The city has, in part for this reason, become increasingly "decentered" (Freund, 2001).

The rapid rate of urbanization in South African cities like Johannesburg, Cape Town and Durban since the early 90s indicates that the challenge to provide services to its population grows as the state tries to keep up with new arrivals. However, poverty, inequality, lack of services and lack of adequate housing are not reasons to attack people for who they are and for the citizenship they hold (Peberdy, 2010). Figure 11. represents the total access to services across the three large urban centres of Cape Town, Durban, and Johannesburg respectively.

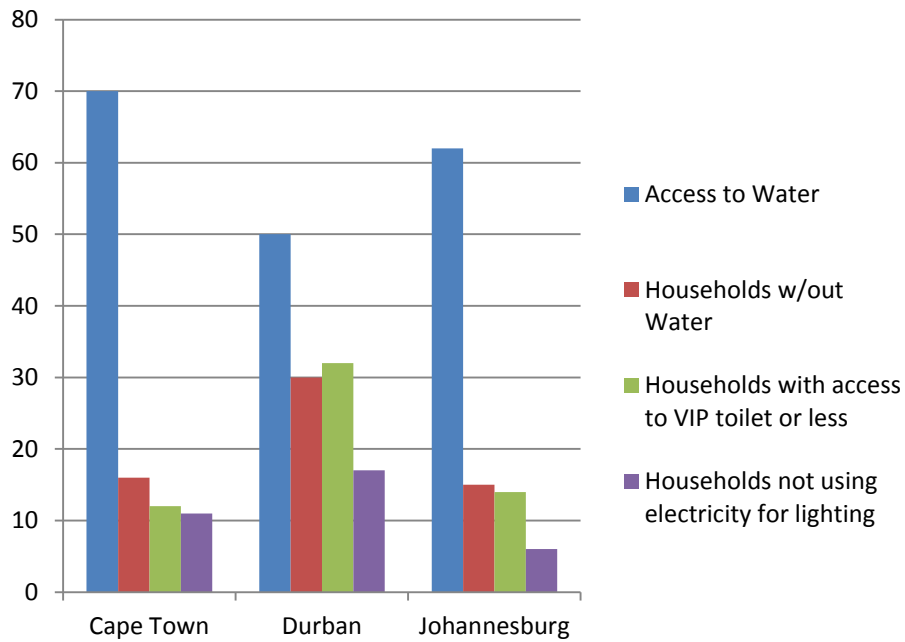


Figure 11. Access to services in Cape Town, Durban and Johannesburg, 2001 (Peberdy, 2010).

IV. METHODOLOGY

Given the lack of vital registration data and the inability of migration surveys to yield reliable estimates of the total number of migrants, censuses remain an adequate source of data for painting a picture of internal and international population movements in and across African societies (Zuberi, 2004). This statement holds especially true in the context of monitoring the relationships between South African nationals and non-nationals. This approach has been duplicated across many fields by many researchers involved in area studies research (Weeks, 2004). The task of planning and implementing censuses in South Africa is the responsibility of Statistics South Africa (STATSSA).

Geospatial analysis is an important tool used in human geographic research to detect possible sources of heterogeneity, spatial incidence or patterns (Sartorius, 2011). The potential of spatial analysis is reinforced by the increasing availability of geographically indexed population level data, as well as advances in computation methods using GIS systems. Spatial analysis, moreover, can be applied to census data in small area studies, as well as to imperfect data, often the case in Africa, through the use of space and time geo-statistics (Sartorius, 2011).

Community Survey 2007

All demographic data used during this research was provided by the 2007 Community Survey. STATSSA is mandated by law, in terms of Stats Act No. 6 of 1999, to collect reliable statistical information from the public, which informs development and democracy in the country. STATSSA conducts the Population Census, and several other household-based surveys such as the Labour Force Survey (LFS) and the General Household Survey (GHS) on an ongoing basis. Until recently, South Africa collected census information from the public every five years. As such, the previous two censuses undertaken in 1996 and 2001 generated diverse geographic and socio-economic information that provided insight into the performance of government programs. This provision of information collected through these two censuses has also inspired high expectations from data users regarding the availability of statistics at a high geographic resolution. In 2001, parliament decided to have the census take a ten-year cycle with a large-scale household survey being undertaken in 2007. Community Survey 2007 (CS 2007) is the name of the mini census and is the first of its kind in the country. The purpose of the survey is to collect

information on the trends and level of demographic and socio-economic data; the extent of poor households; access to facilities and services; levels of employment and unemployment; in order to assist government and private sector in planning, evaluating and monitoring programs and policies. CS 2007 is not only a measure of development trajectory that South Africa has undertaken since 1994, it is also intended to elevate difficult questions around the Millennium Development Goals (MDGs) of the United Nations for which South Africa has committed itself to achieving since the 1990s. In CS 2007, 949, 105 persons were enumerated and 246, 618 households were covered during the enumeration, with a response rate of 93.9%. The survey randomly sampled enumeration areas (EA) and then dwelling units within each EA. An EA is the smallest geographical unit (piece of land) into which the country is divided for enumeration purposes. Enumeration areas contain between 100 to 250 households. The survey was conducted between February 7th and February 28th, 2007 (Community Survey 2007 Basic Results). CS 2007 results were released on 24 October 2007. After the evaluation of the data by the Stats Council, CS 2007 was found to be comparable in many aspects with other STATSSA surveys, censuses and other external sources.

The South African Statistics Council found the reported demographic data to be entirely plausible when compared to other censuses. Certain limitations and potential errors were identified by STATSSA and the South African Statistics Council when reviewing the survey, however the following systematic errors were observed in the data: underestimate of men relative to women, underestimate of children younger than 10 years, excess of people aged 10-24 in Western Cape and Gauteng, and deficit of women aged 20-34 in Free State, KwaZulu-Natal and Limpopo.

Scale and Geographic Hierarchy of Data

The spatial version of local municipality, district municipality and provincial boundaries used in CS 2007, is the December 2005 version as released by the Municipal Demarcation Board in January 2006. All municipal name and code changes as implemented since the December 2005 release were incorporated. In total, there are six (6) metropolitan municipalities, forty-six (46) district municipalities, two hundred and thirty one (231) local municipalities, and twenty (20) district management areas. Figure 12 explains the hierarchical structure used for geographic areas in CS 2007.

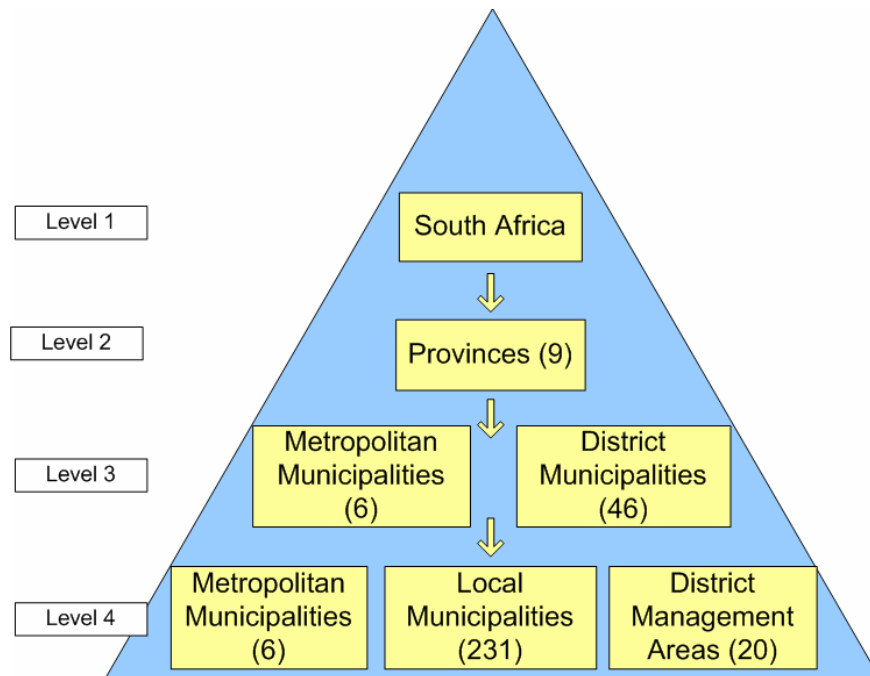


Figure 12. Geographical hierarchy for Community Survey 2007.

Two spatial scales were used for analysis operations for this research. Analysis of geospatial and socioeconomic trends at the provincial level utilized data at Level 2 (province). All grievances and opportunities were mapped at a scale of Level 2. EA units at this scale included all nine (9) provinces of South Africa. Further analysis was carried out at a scale of Level 3 (metropolitan + district municipalities) when datasets representing grievances and opportunities at this scale were available from CS 2007. EA units at Level 3 included the six (6) metropolitan municipalities as well as the forty-six (46) district municipalities for a combined total of 52 Level 3 EA units. Spatial analysis for datasets at a scale of Level 2 resulted in a series of quantitative thematic maps. No further statistical analysis was carried out at this scale. However, datasets that were available from CS 2007 at a scale of Level 3 allowed for further statistical analysis. This is due to the fact that there are only 9 EA units at a scale of Level 2. Statistical analysis at this scale would not produce statistically significant relationships amongst features. There are 52 EA units at a scale of Level 3, thus producing a stronger series of statistically significant relationships amongst features.

Data Source and Projection

The two main sources of data used to carry out this research were CS 2007 for all demographic and

socioeconomic data and Map Library (www.maplibrary.org/Africa), an open source data clearinghouse containing administrative boundaries for South Africa's provinces and municipalities. A national shapefile of the study area was created by downloading the 52 Level 3 EA and 9 Level 2 EA units as individual shapefiles directly from Map Library. The entire dataset has been reviewed and updated to reflect administrative boundaries as per January, 2007. This is temporally consistent with data obtained from CS 2007. The national shapefile was then imported into a file geodatabase using ArcGIS Desktop 10.0 to create the necessary areal and geospatial data for analysis (Figure 13.).

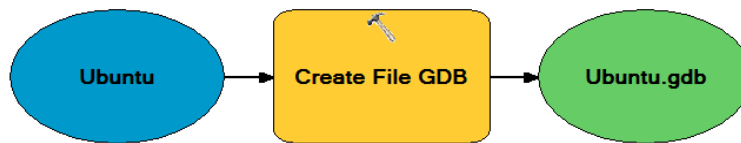


Figure 13. Creating file geodatabase, *Ubuntu*.

The selected geographic coordinate system used during analysis operations was the global world geodetic system, WGS_1984_EASE_Grid_Global. This coordinate system was used for each analysis operation to maintain the integrity of spatial data. The projection selected was a cylindrical equal area projection as equal area projections are best used in analysis of quantitative attributes by area.

Grievance and Opportunity Mapped

In order to geospatially represent the propensity for xenophobic violence within urban areas across South Africa, the five major grievances South African nationals have voiced in response to immigration were mapped, creating a series of grievance maps. The grievances are categorized as follows: 1) competition for jobs, 2) competition for women, 3) spread of disease, 4) spread of crime, and 5) poor service delivery from the government. Each grievance contains unique datasets obtained from CS 2007.

1. Competition for Jobs

The competition for jobs grievance was represented by unemployment rates by province (Level 2) and municipality (Level 3). The following datasets were selected from the Labour Force Survey (LFS) as inputs to a file geodatabase to best represent this grievance:

- a. Unemployment Status

According to the official unemployment definition, a person must satisfy the following three conditions: 1) the person did not work during the seven days prior to the survey interview, and does not have any job attachment, 2) the person wants to work and is available to start work within two weeks, and 3) the person has taken active steps to look for work or to start a business in the four weeks prior to the interview (cite). The universe included each person aged 15-65 who usually resided in the household for at least four nights a week and had done so for the past four weeks, and any other person who stayed over the previous night as a visitor. Respondents could answer one of the four following ways: 1) Employed, 2) Unemployed, 3) Not economically active, and 4) Unspecified. The following equation was used to determine the unemployment rates per EA unit:

$$x = \left(\frac{a}{b}\right) \times 100, \text{ where } x = \text{unemployment rate, } a = \text{total no. unemployed, } b = \text{labour force}$$

Once the unemployment rates were calculated, a choropleth map was produced to spatially represent unemployment rates per EA unit.

2. Competition for Women

The second grievance is that non-nationals take away women meant for South African nationals. The competition for women grievance was calculated by comparing the ratio of black South African women with the ratios of unmarried individuals and immigrants. Representing this grievance was accomplished by obtaining census data from the Family Survey (FS). This database contains data on marital status and relationship to the head of household. Data was obtained at both scales; Level 2 and Level 3. The following datasets were used:

a. Gender and Population Group

The four population groups in South Africa are: 1) Black, 2) Coloured, 3) Indian or Asian, and 4) White. Because the majority of grievances made towards African non-nationals are by black South African nationals, the percentages of black women were calculated per total number of women living in an EA unit at Level 2 and Level 3 scales, thus normalizing the data. The output would be a spatial representation of the distribution of black women across the country, represented through a series of choropleth maps.

b. Married Status

This question was asked to determine the marital status of the members of a household. Table 1 represents the possible choices a respondent could list for marital status.

| | | | | | | | |
|----------------------------|--------------------|-------------------|---------------------------|----------------------|-------------------------|------------------|-----------------|
| Civil/ religious (a) | Traditional (b) | Polygamous (c) | Living together (d) | Never married (e) | Widower or widow (f) | Separated (g) | Divorced (h) |
|----------------------------|--------------------|-------------------|---------------------------|----------------------|-------------------------|------------------|-----------------|

Table 1. Marital Status

A category of “not married” (NM) was created from the following equation:

$$NM = d + e + f + g + h$$

The rate of NM (R) was calculated as follows:

$$R = \left(\frac{NM}{TOTAL} \right) \times 100$$

A series of choropleth maps were then created to represent the spatial distribution of individuals “not married” across the country. As those who are not married are more likely to seek partnership with other single “not married” individuals, this analysis was significant in measuring this grievance.

c. Province of Previous Residence

This question was asked to determine from which province each person had moved since 2001. If the move was from another country, “Outside RSA was recorded” (Community Survey, 2007). The following table (Table 2) represents the choices respondents could give:

| | | | | | | | | | |
|-----------------|-----------------|------------------|---------------|-------------------|---------------|---------|------------|---------|----------------|
| Western Cape | Eastern Cape | Northern Cape | Free State | KwaZulu- Natal | North West | Gauteng | Mpumalanga | Limpopo | Outside RSA |
|-----------------|-----------------|------------------|---------------|-------------------|---------------|---------|------------|---------|----------------|

Table 2. Province of Previous Residence

As reliable data on immigration is incredibly difficult to obtain (or non-existent), the above data were used to create a sense of movement of people within the country. Of particular interest was the number of persons who had migrated from outside South Africa (Outside RSA) since 2001. Data was disregarded for every respondent that had not moved from a previous province since 2001. A series of choropleth maps was created as outputs to represent the numbers of “immigrants” per each EA unit at Level 2 and Level 3 scales.

3. Spread of Disease

With the geographic patterns of the spread of HIV/AIDS, it has become very easy for most South Africans to view the disease as a “black peril” from other countries (Chirwa, 1998). It is believed by many that African non-nationals entering the country legally or illegally bring with them various diseases, particularly sexually-transmitted diseases. The spread of disease grievance was calculated by comparing the reported rates of cause of death from disease for 2007 with the total number of reported deaths for the same year. In order to map this grievance, the following dataset was obtained from CS 2007’s Cause of death from death notification 2007 survey:

a. Cause of Death from Disease

The cause of death from disease was broken into six categories within the survey: 1) immediate cause of death, 2) second condition leading to death, 3) third condition leading to death, 4) fourth condition leading to death, 5) other conditions leading to death, and 6) underlying cause of death. Each category included the individual diseases that caused death. The total numbers of death per each disease were then added together across all six categories to create a list of total causes of death due to disease per province. The following table (Table 3) lists the different types of disease responsible for cause of death in 2007:

| | |
|---|---|
| Tuberculosis (of respiratory, nervous system, other organs) | Syphilis (congenital, late, other) |
| Human immunodeficiency virus (HIV) | Gonococcal infection |
| Granuloma inguinale | Trichomoniasis |
| Herpes simplex | Other predominantly STD; not elsewhere classified |
| Chlamydial lymphogranuloma (venereum) | Unspecified STD |
| Other sexually transmitted chlamydial diseases | |

Table 3. Cause of Death from Disease Type

This dataset was only available at a scale of Level 2. Cause of death from disease rates were calculated by dividing the total number of cause of death from disease by the total number of cause of death per each EA unit (province). The output would be a spatial distribution of the reported cause of death rates

from disease per EA unit (province).

4. Spread of Crime

There is a commonly held belief that African non-nationals exacerbate crime rates as they travel through areas of the country. The spread of crime grievance was calculated using reported death rates from assault and reported rates of individuals being sexually assaulted, beaten up, harassed, or burglarized by someone outside of the household in 2007. All datasets used to map this grievance were obtained from a scale of Level 2 (province). In order to map this grievance, the following datasets were obtained from CS 2007:

a. Cause of Death from Assault

Data was obtained from CS 2007's "Mortality and causes of death from death notification 2007" survey. Death from assault numbers included any of the following listed cause of death from assault categories (Table 4):

| Handgun discharge | Larger firearm discharge | Firearm discharge (other) | Hit/struck by another person |
|--|--|---|------------------------------|
| Striking against/bumped into by another person | Assault (hanging, drowning, handgun, explosive material, chemicals, sharp/blunt object, other) | Poisoning (drugs, alcohol, gases, pesticides, herbal) | Witch doctor enema |

Table 4. Cause of Death by Assault Category

The data was collected and then normalized against the total reported number of cause of death per province in order to produce cause of death by assault rates across the study area. Three additional crime-related categories were created from which data was available from CS 2007. Each of these categories, as well as cause of death from assault, were spatially represented in order to effectively map the alleged grievance that African non-nationals are responsible for a general feeling of vulnerability felt by many South African nationals.

b. Been beaten up by someone outside the household

Data was obtained from the GHS. Respondents from each province answered one of either YES, NO or Unspecified. To spatially represent the rates of persons that had been beaten up by someone outside the household (b) in 2007, the following equation was used:

$$b = \left(\frac{YES}{TOTAL} \right) \times 100$$

c. Been harassed by someone outside the household

Data was obtained from the GHS. Respondents from each province answered one of either YES, NO or Unspecified. To spatially represent the rates of persons harassed by someone outside the household (h) in 2007, the following equation was used:

$$h = \left(\frac{YES}{TOTAL} \right) \times 100$$

d. Been sexually assaulted by someone outside the household

Data was obtained from the GHS. Respondents from each province answered one of either YES, NO or Unspecified. To spatially represent the rates of persons sexually assaulted by someone outside the household (s) in 2007, the following equation was used:

$$s = \left(\frac{YES}{TOTAL} \right) \times 100$$

e. Had something stolen by someone outside the household

Data was obtained from the GHS. Respondents from each province answered one of either YES, NO or Unspecified. To spatially represent the rates of theft (t) in 2007, the following equation was used:

$$t = \left(\frac{YES}{TOTAL} \right) \times 100$$

Each of these five datasets were represented as a series of choropleth maps.

5. Poor Service Delivery (from government)

The final grievance used in this study was one that is voiced by the majority of the country; the ineffective service provisions made by the government for all people living in South Africa. The poor service delivery grievance was calculated using three datasets: percentages of individuals without access to piped water within the household, percentages of individuals without access to land, and percentages of individuals without an electricity mains supply within the household during 2007. The datasets were

obtained from the GHS and were only available at a scale of Level 2 (province). In order to map this grievance the following datasets were selected from the GHS to represent this grievance.

a. Access to piped water within the household

This question was asked to determine the accessibility of a basic resource that should be provided by the government, water; water for drinking, cleaning, and washing. To spatially represent the distribution of persons without access to piped water (w) in 2007, the following equation was used:

$$w = \left(\frac{NO}{TOTAL} \right) x 100$$

b. Access to land

Competition over land has been a major source of contention between South African nationals and immigrating communities of African non-nationals. Determining the spatial distribution of the accessibility of land would prove beneficial in determining the extent of this grievance. To spatially represent the distribution of persons without access to land (l) in 2007, the following equation was used:

$$l = \left(\frac{NO}{TOTAL} \right) x 100$$

c. Main electricity supply at household

It has been documented that one underlying trigger to the mass violence of 2008 was frequency of electricity blackouts, an indicator of poor service delivery (Everatt, 2010). To spatially represent the distribution of persons without a main electricity supply (e) in 2007, the following equation was used:

$$e = \left(\frac{NO}{TOTAL} \right) x 100$$

A series of choropleth maps were created to represent this grievance.

The Grievance Maps geospatially represent motives for conflict and they are driven by how one group perceives another. These maps attempt to show that motives for conflict in South Africa are driven by the relative deprivation of one group, Black South African nationals.

Opportunity Maps

In addition to the presence of group grievances, there must also exist an opportunity for violence. Grievances alone rarely lead to the type of violence that occurred in South Africa between May and July of 2008. The Opportunity Maps answer the question of identifying what structural conditions exist that

provides opportunities for South African nationals to respond to the presence of non-nationals through violent means. Because the opportunity-oriented tradition towards conflict has its roots in economic theory, datasets were selected from CS 2007 and the GHS to represent measurable economic factors that could influence the opportunity of conflict in South Africa.

1. Youth Bulge

Data representing the labour force was obtained from the LFS at scales of Level 2 (province) and Level 3 (municipality). This database only covers people of working age (15-65 years of age), whether economically active or not. Data representing youth bulges (15-24 years of age) was obtained from CS 2007. A youth bulge is determined by the total number of youth aged 15-24 (y) divided by the total adult population (A). To spatially represent the distribution of youth bulges (Y) in 2007, the following equation was used:

$$Y = \left(\frac{y}{A}\right) \times 100$$

A series of choropleth maps were created to represent this grievance.

2. Poverty

Four socioeconomic factors were chosen from the GHS to represent this opportunity. The first three datasets covered a scale of Level 2 (province) only. Data was not available for these datasets at a scale of Level 3 (municipality). The last dataset, *monthly income* category was available at a scale of Level 2 (province) and Level 3 (municipality). The following datasets were selected to represent this opportunity:

- a. Children living on the streets

Children living on streets indicate that there is a fundamental breakdown in government provisions for its people. To spatially represent the distribution of the number of children living on streets (c) in 2007, the following equation was used:

$$c = \left(\frac{YES}{TOTAL}\right) \times 100$$

- b. Have a car

Car ownership was selected to represent an indicator of relative wealth. To spatially represent the distribution of car ownership (o) in 2007, the following equation was used:

$$o = \left(\frac{YES}{TOTAL} \right) \times 100$$

c. Can't afford water

To spatially represent the distribution of individuals who cannot afford water (*W*) in 2007, the following equation was used:

$$W = \left(\frac{YES}{TOTAL} \right) \times 100$$

d. Monthly Income Category (*MIC*)

This dataset was used to determine the income category that best describes the gross monthly income before deductions and includes all sources of income. Due to the availability of the data at scale, *MIC* data was represented at both Level 2 (province) and Level 3 (municipality) scales. Table 5 represents the different classifications of this dataset:

| |
|-------------------|
| No Income |
| R1 - R400 |
| R401 – R800 |
| R801 – R1600 |
| R1601 – R3200 |
| R3201 – R6400 |
| R6401 – R12800 |
| R12801 – R25600 |
| R25601 – R51200 |
| R51201 – R102400 |
| R102401 – R204800 |
| R204801 or more |

Table 5. Monthly Income Categories

Prior research has shown that the food poverty line across South Africa was found to be R211 per capita per month (in 2000 prices) (Woolard & Leibbrandt, 2006). Directly from this research, STATSSA derived

a “lower bound” poverty line of R322 per capita per month and an “upper bound” poverty line of R593 per capita per month (in 2000 prices). The STATSSA “upper bound” was calculated by observing the total consumption spending of households that spend R211 per capita on food. STATSSA found that households that spent approximately R211 per capita per month on food had an average per capita expenditure level of R593 (R211 on food and R382 on non-food items). This is the “traditional” cost of basic needs approach to determining the non-food component of the poverty line (Woolard & Leibbrandt, 2006). For the purposes of this study, the “upper bound” poverty line was raised to include the categories of “no income”, “R1-R400”, and “R401-R800” due to the availability of the census data at this category. A Modified Poverty Rate (*MPR*) can then be calculated by dividing the combination of respondents representing the “no income” and “R1-R800” by the total number of respondents (*TOTAL*). The following equation represents the calculation:

$$MPR = \left(\frac{no\ income + R1 - R800}{TOTAL} \right) \times 100$$

A series of choropleth maps were created to spatially represent this opportunity.

Spatial Autocorrelation in GIS

Once the grievances and opportunities were mapped, spatial statistical analyses were carried out to determine if the spatial distribution of values per grievance and opportunity (high or low) were statistically significant across the study area and therefore worth further investigation. To identify hot spots or clustering of data values per grievance, the ESRI Hot Spot Analysis (Getis-Ord G_i^*) statistical tool (Figure 14) was used.

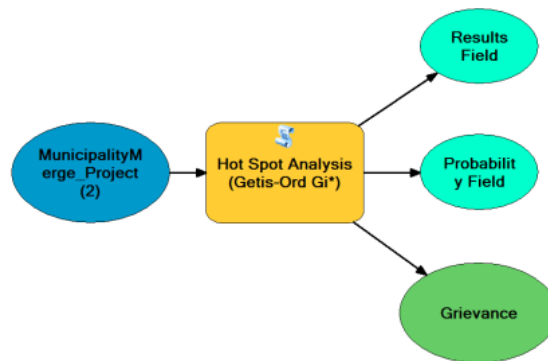


Figure 14. ESRI Hot Spot Analysis (Getis-Ord G_i^*) Model.

In each case, the tool tested to see if there were hot or cold spots of a grievance or opportunity surrounded by hot or cold spots of the same grievance or opportunity. Prior to running the analysis, the appropriate conceptualization of spatial relationships was determined. Choosing the correct conceptualization of spatial relationships was vital in testing the interaction between features and any shared commonality amongst neighboring features. The zone of indifference conceptualization of spatial relationships was chosen so that features that fell outside of a critical distance would be weighted appropriately and included in the analysis. The final necessary step taken before running the analysis was to select an appropriate distance band. The distance needed to match the scale of the field of study and needed to result in every feature having at least several neighbors (ArcGIS Resource Center). Selecting a distance band that is too small would result in the features not having enough neighbors, therefore resulting in unwanted results. To select the appropriate distance band, the Spatial Autocorrelation (Morans I) tool (Figure 15) was used.

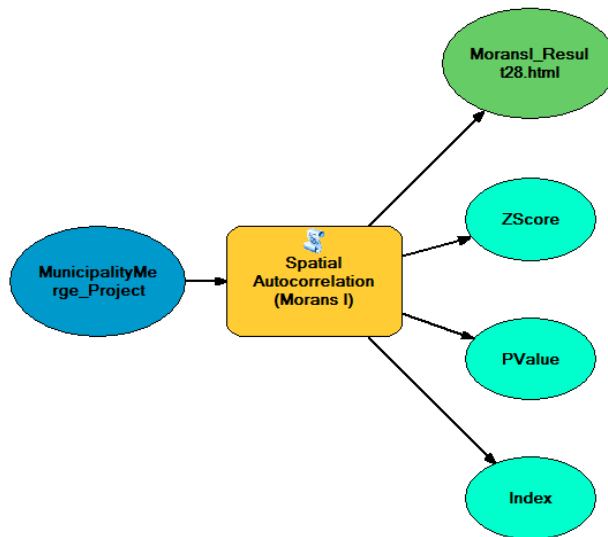


Figure 15. ESRI Spatial Autocorrelation (Morans I) Model.

Once run, this tool provides as an output a Z-score for the entire study area at that specific distance band (ESRI Resources). The inputs and conceptualization of spatial relationships are the same as the Hot Spot Analysis tool for each grievance and opportunity. The smallest distance that is at a scale consistent with the study area was determined to be 15,000m (15km). The Z score created as an output is a

measure of how clustered the values are (Figure 16). To determine the most appropriate distance band to use for this study area, the tool was run 31 times at 15,000m intervals until reaching a distance band of 450,000m (450km). The value of 450,000m was selected because any distance greater would result in the loss of subtle differences between districts. Each distance and Z-score value was added to a table, and then imported into ArcMap. The Z-scores were then graphed (Figure 17), showing the global Z-score values for the 31 distance bands. Due to the large spatial extent of the study area, a distance band of 250,000m (250km) was selected. This method allows the data to determine the most appropriate distance band to use in the analysis.

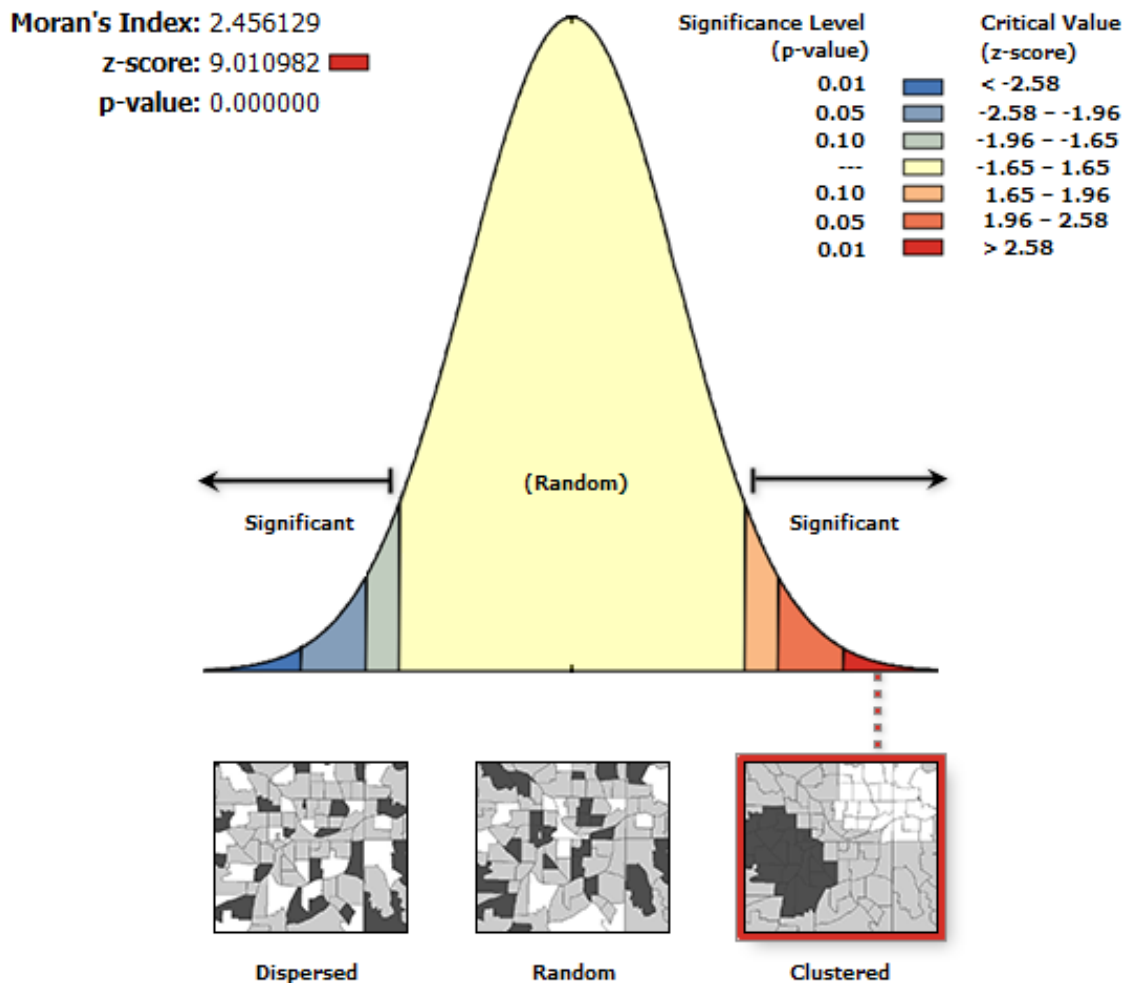


Figure 16. Spatial Autocorrelation Report.

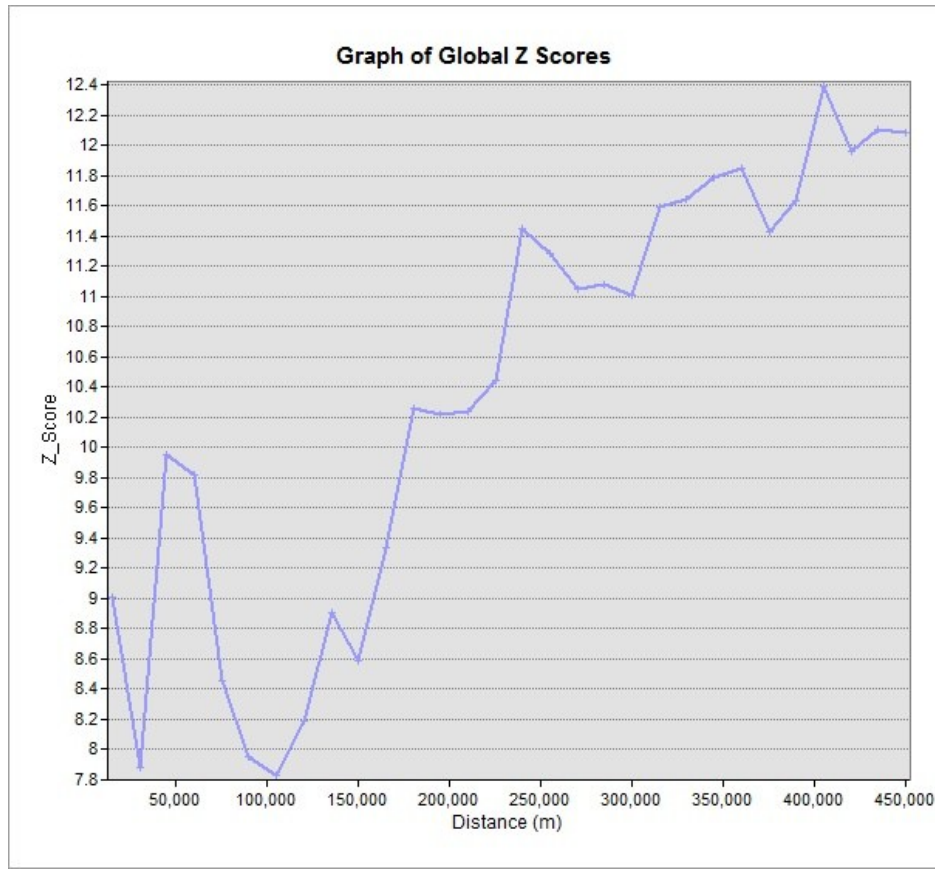


Figure 17. Selecting an Appropriate Distance Band.

Once the distance band was selected, hot spot analyses were conducted for the following grievances at a scale of Level 3: 1) stealing jobs, 2) stealing women, and for the following opportunities: 1) youth bulge, 2) poverty.

Predictive Modeling using Regression Analysis

Mapping clusters of high and low data values identifies where statistically significant spatial relationships occur across the study area. To determine how these relationships influence xenophobic violence requires modeling the spatial relationships. The Ordinary Least Squares (*OLS*) tool was used to answer this question (Figure 18). The *OLS* tool served as a predictive model to illustrate the degree of influence that grievances and opportunities have over the xenophobic violence of 2008.

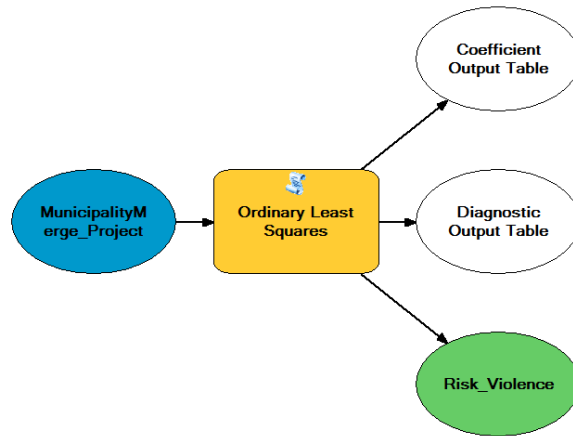


Figure 18. ESRI Ordinary Least Squares (OLS) Model.

The greatest challenge in OLS modeling is finding the appropriate set of explanatory variables that help to best support the dependent variable. Exploratory Regression Analysis, an effective method in determining accurate explanatory variables, was used to identify which grievances and opportunities are most likely to support the OLS model (Figure 29).

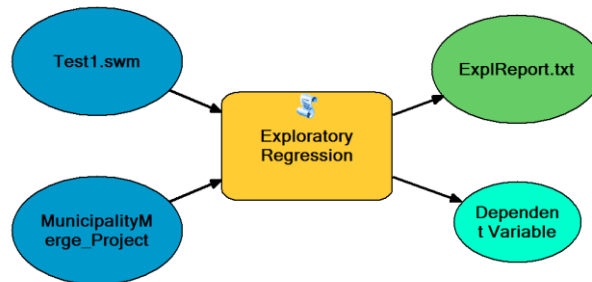


Figure 19. Exploratory Regression Model (ERM)

In order to better understand the relationships between the grievances and opportunities with the locations of the 2008 xenophobic violence, an OLS regression equation is used to serve as a global model of the variable that is being predicted (ESRI Resources). The following OLS regression equation was used:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n + \varepsilon,$$

where Y = Dependent Variable, β = Coefficients, X = Explanatory Variables and ε = Random Error

Term/Residuals

Exploratory regression models every possible combination of variables, in an attempt to create a regression model that best supports the assumptions of the *OLS* equation. Previous research indicates that grievances and opportunities (unemployment rates, modified poverty rates, distribution of black women, singleness, distribution of foreigners, and youth bulge) are substantial candidates for this model. The dependent variable in this case represents the 74 event locations of xenophobic violence that occurred across the country from May – July of 2008. The event locations are a function of the explanatory variables. The explanatory variables are represented by the grievances and opportunities. Coefficients represent the degree to which each explanatory variable influences the dependent variable (directly or indirectly).

The 2008 violence event locations were aggregated from their point data source into a feature class that contained the grievance and opportunity data, resulting in both dependent and independent variables stored together in the same dataset. After selecting the appropriate independent variables, the *OLS* tool was run producing a thematic map of the study area that represented the predictive strength of the model to relate the independent variables (grievances and opportunities) with the dependent variable (locations of 2008 violence). In order to ensure the reliability of the *OLS* model, the residuals produced from running the *OLS* diagnostic were checked for correlation using the ESRI Spatial Autocorrelation (Morans I) tool. Running this tool at the end of the analysis process would reveal the degree of correlation amongst residuals, and most importantly indicate the degree of randomness of the residuals.

V. RESULTS & ANALYSIS

Grievance Maps

1. Competition for Jobs

The distribution of unemployment rates in 2007 was represented at two spatial scales, Level 2 (province) and Level 3 (municipality). Unemployment rates at Level 2 (province) contained five classifications, ranging from a low of 19.15% to a high of 24.74% (Figure 20).

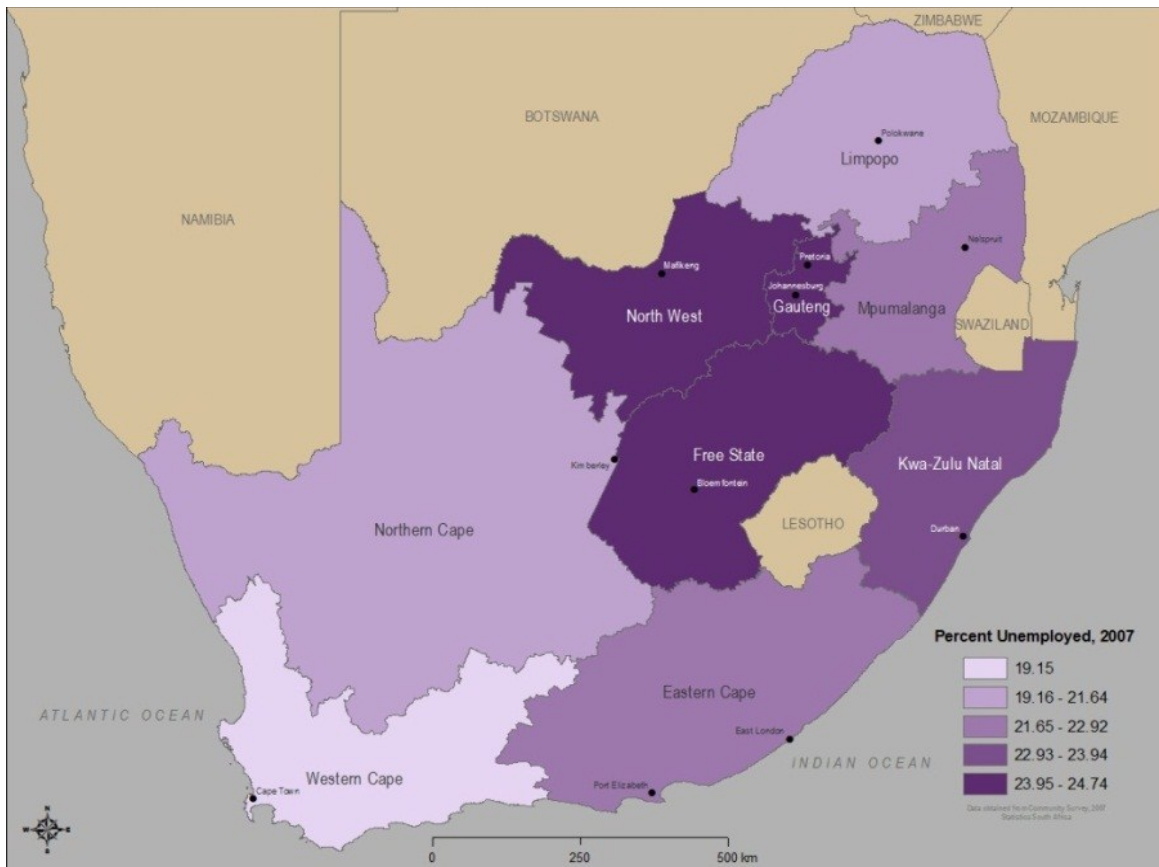


Figure 20. Spatial Distribution of Unemployment Rates by Province, 2007.

The analysis indicates that the nation's highest unemployment rates are concentrated in the central to north central and eastern parts of the country. The North West, Free State and Gauteng experienced the highest unemployment rates (23.95% – 24.74%). KwaZulu-Natal had an unemployment rate of 22.93% - 23.94%. The Eastern Cape and Mpumalanga contained unemployment rates of 21.65% - 22.92%). The Northern Cape and Limpopo contained unemployment rates of 19.16% - 21.64%) and the Western Cape

had the lowest unemployment rates of 19.15%. The Western Cape contains three municipalities representing the lowest unemployment rates (15.18% - 17.37%), two municipalities with rates of 17.38% - 20.76%), and one municipality with rates of 20.77% - 22.90%. The Northern Cape contains one municipality representing the lowest unemployment rates (15.18% - 17.37%), two municipalities with rates of 17.38% - 20.76%, one municipality with rates of 20.77% - 22.90%, and one municipality with rates of 22.91% - 26.16%. The Free State contains two municipalities with rates of 20.77% - 22.90%, two municipalities with rates of 22.91% - 26.16%, and one municipality with rates of 26.17 - 30.34%. The North West province contains one municipality with rates of 17.38% - 20.76%, one municipality with rates of 20.77% - 22.90%, one municipality with rates of 22.91% - 26.16%, and one municipality with rates of 26.17% - 30.34%.

Gauteng province contains three municipalities with rates of 20.77% - 22.90%, two municipalities with rates of 22.91% - 26.16%, and one municipality with rates of 26.17% - 30.34%. Limpopo province contains one municipality with rates of 17.38% - 20.76%, three municipalities with rates of 20.77% - 22.90%, and one municipality with rates of 22.91% - 26.16%. Mpumalanga contains two municipalities with rates of 20.77% - 22.90% and one municipality with rates of 22.91% - 26.16%. KwaZulu-Natal contains one municipality with rates of 15.18% - 17.37%, two municipalities with rates of 17.38% - 20.76%, one municipality with rates of 20.77% - 22.90%, five municipalities with rates of 22.91% - 26.16%, and two municipalities with rates of 26.17% - 30.34%. The Eastern Cape contains one municipality with rate of 15.18% - 17.37%, one municipality with rates of 17.38% - 20.76%, one municipality with rates of 20.77% - 22.90%, two municipalities with rates of 22.91% - 26.16%, and two municipalities with rates of 26.17% - 30.34% (Figure 22).

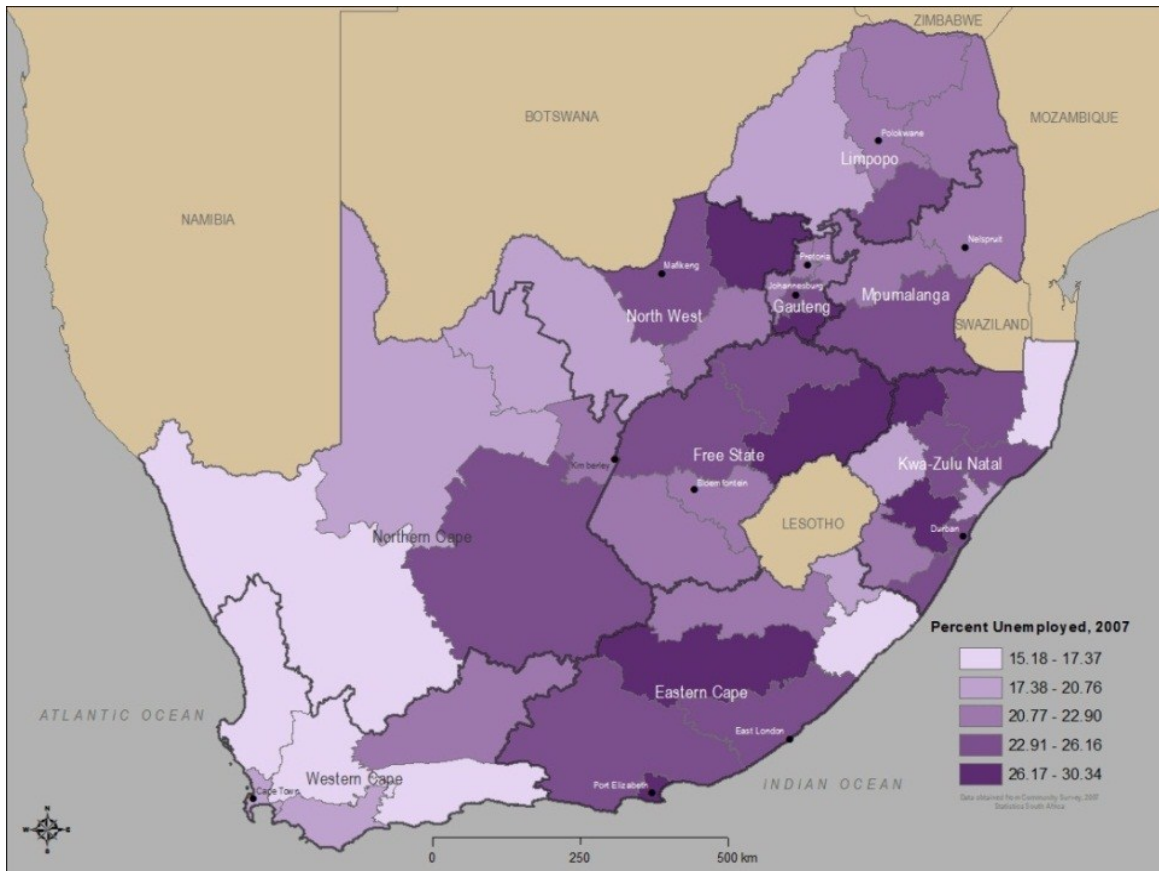


Figure 21. Spatial Distribution of Unemployment Rates by Municipality, 2007

Results from running the Hot Spot Analysis tool on unemployment rates at a scale of Level 3 produces a feature class that is symbolized to reveal hot spots and cold spots across the dataset. A hot spot (red) symbolizes a statistically significant cluster of high values and a cold spot (blue) symbolizes a statistically significant cluster of low values. Figure 22 represents the hot spot analysis for unemployment rates at a scale of Level 3, indicating that significant clustering of high unemployment rates occurs in an easily discernible band stretching from the eastern half of the North West province heading in a southeasterly direction, through Gauteng, western Mpumalanga, eastern Free State and finally finishing in central KwaZulu-Natal. There is also significant clustering of high values in western Eastern Cape. Conversely, significant clustering of low values occurs in the far west of the country, specifically in the westernmost extents of the Northern and Western Cape.

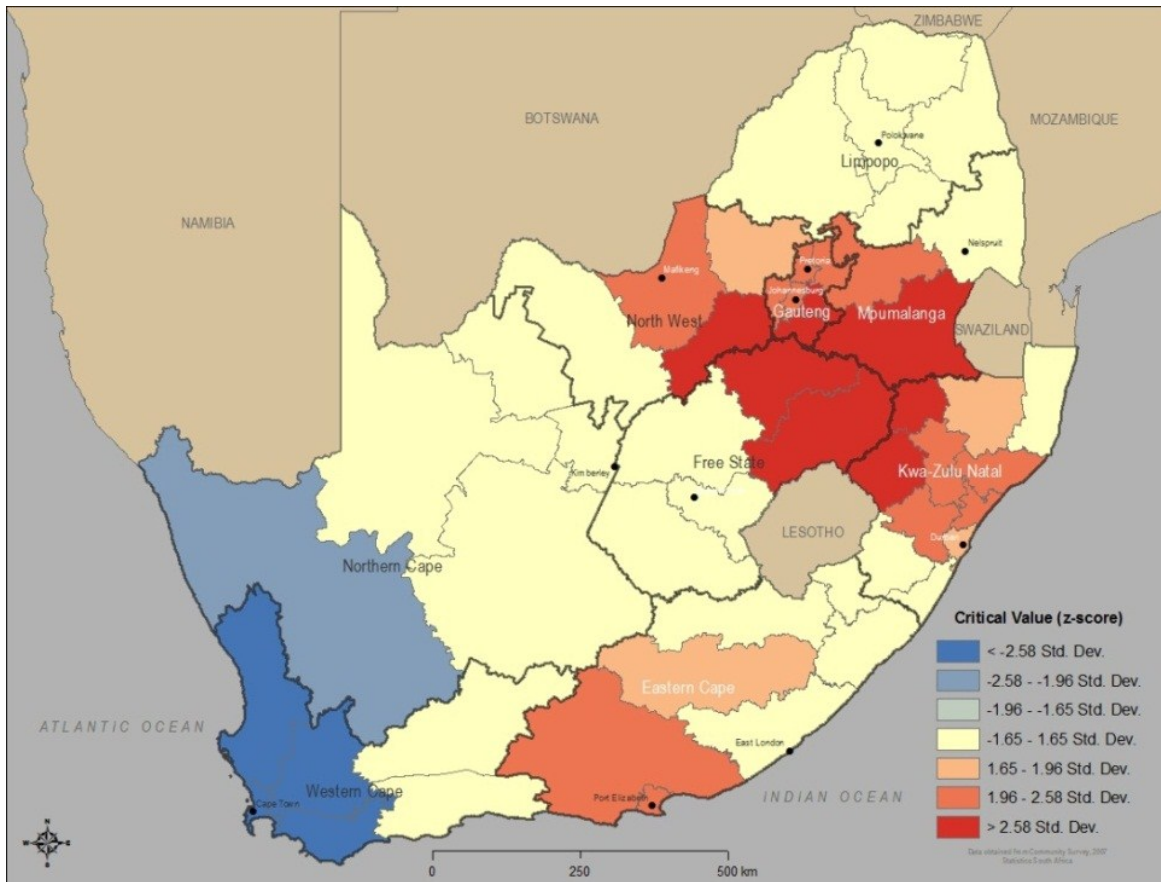


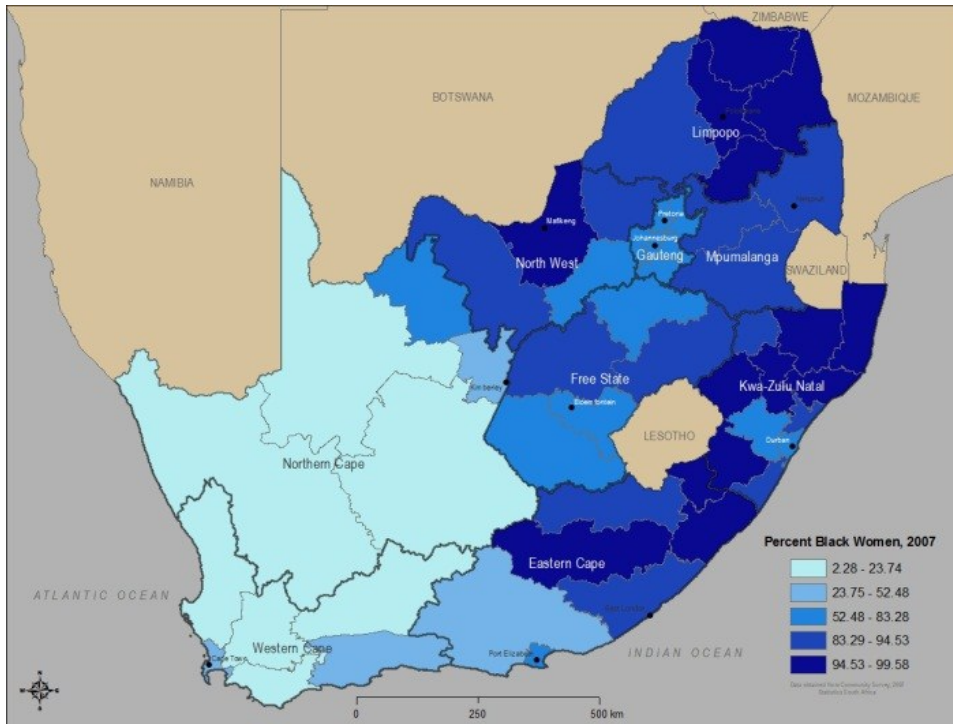
Figure 22. Hot Spot Analysis of Unemployment Rates, 2007.

2. Competition for Women

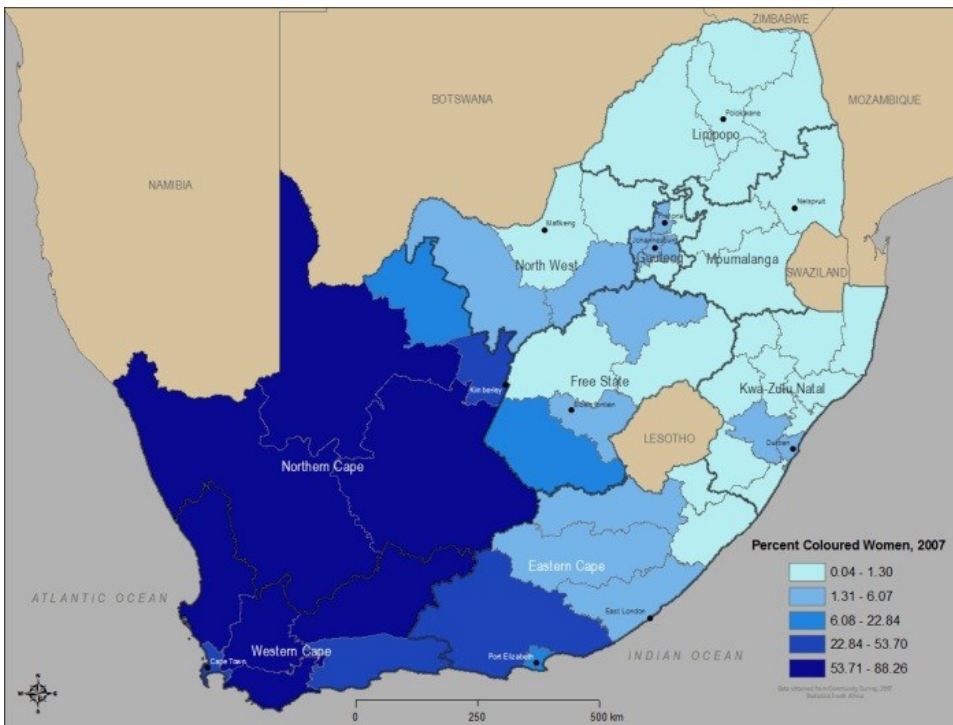
A series of quantitative thematic maps was produced to identify the spatial distribution of women by population group across the country per municipality, particularly the spatial distribution of black women (Figure 23.a). Figure 24 represents the spatial distribution of women by population group at a scale of Level 2 (province). Figures 25 and 26 complete the grievance by representing the spatial distribution of singleness and immigrants respectively at both spatial scales. Both figures 23 and 24 reveal that the spatial distribution of black women are concentrated in the eastern and northeastern parts of the country. Conversely, the concentration of coloured women are concentrated in the south and southwestern parts of the country. The concentration of Indian/Asian women are mostly found in KwaZulu-Natal, with some significant numbers located in the country's metropolitan regions of Johannesburg in Gauteng province and Cape Town in the Western Cape (Figure 23). Finally, the concentration of white women are more

evenly distributed across the country with significant concentrations associated with the large urban areas of Cape Town (Western Cape), Port Elizabeth (Eastern Cape), Johannesburg and Pretoria (Gauteng), Durban (KwaZulu-Natal), Bloemfontein (Free State), and Kimberley (Northern Cape).

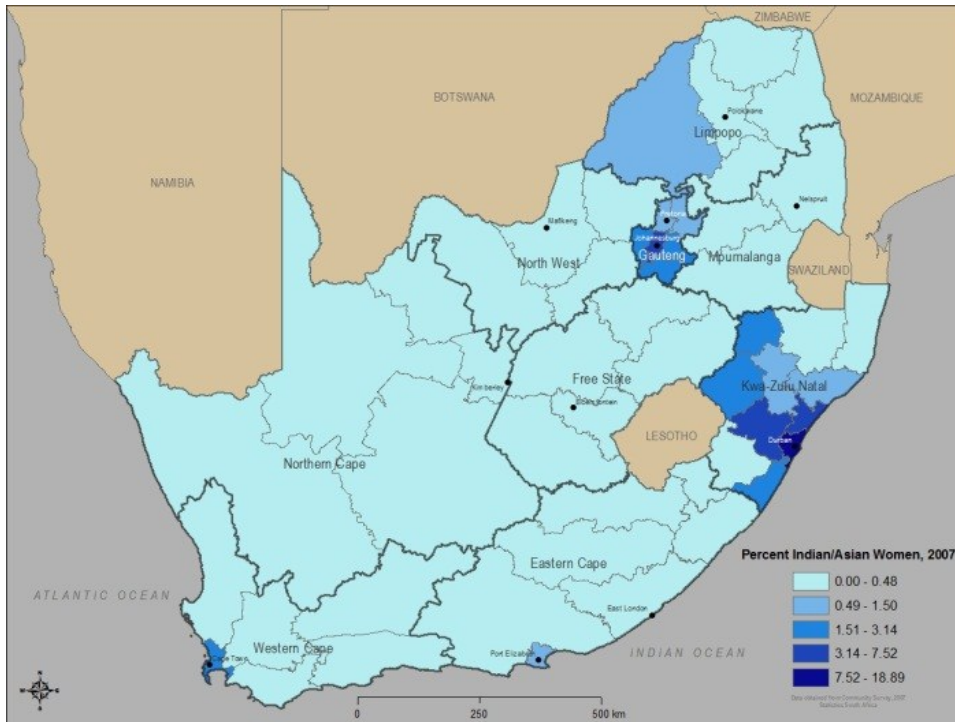
Figure 25 indicates that the higher rates of individuals who are not traditionally married are located in the northeastern and easternmost regions of the country. Conversely, the central and southwesternmost regions of the country represent the lowest rates of singleness in 2007.



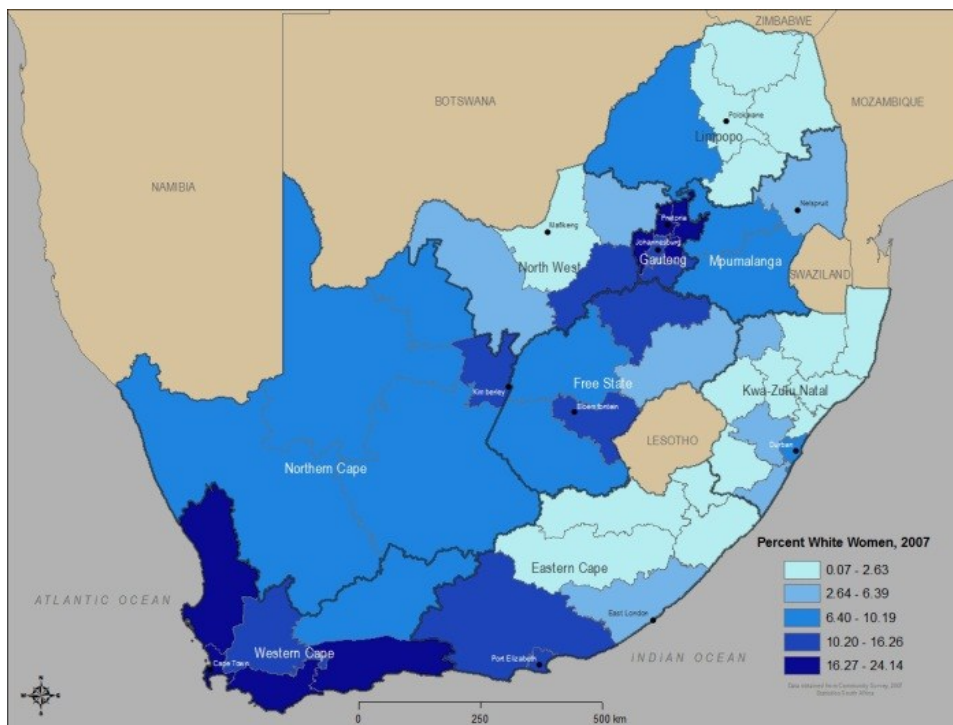
a) Black



b) Coloured

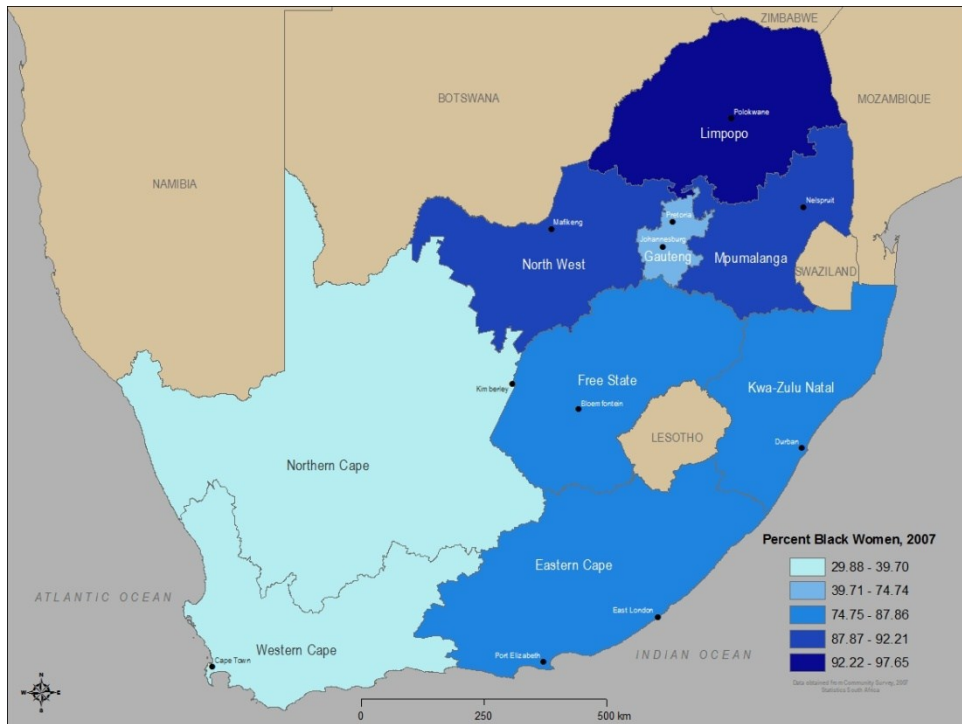


c) Indian/Asian

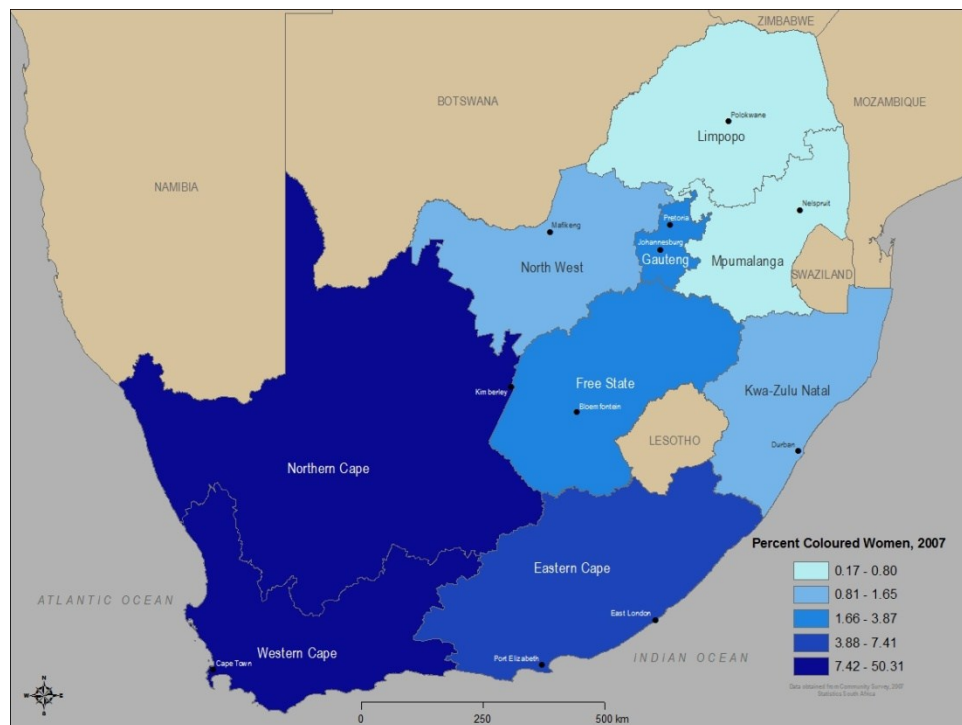


d) White

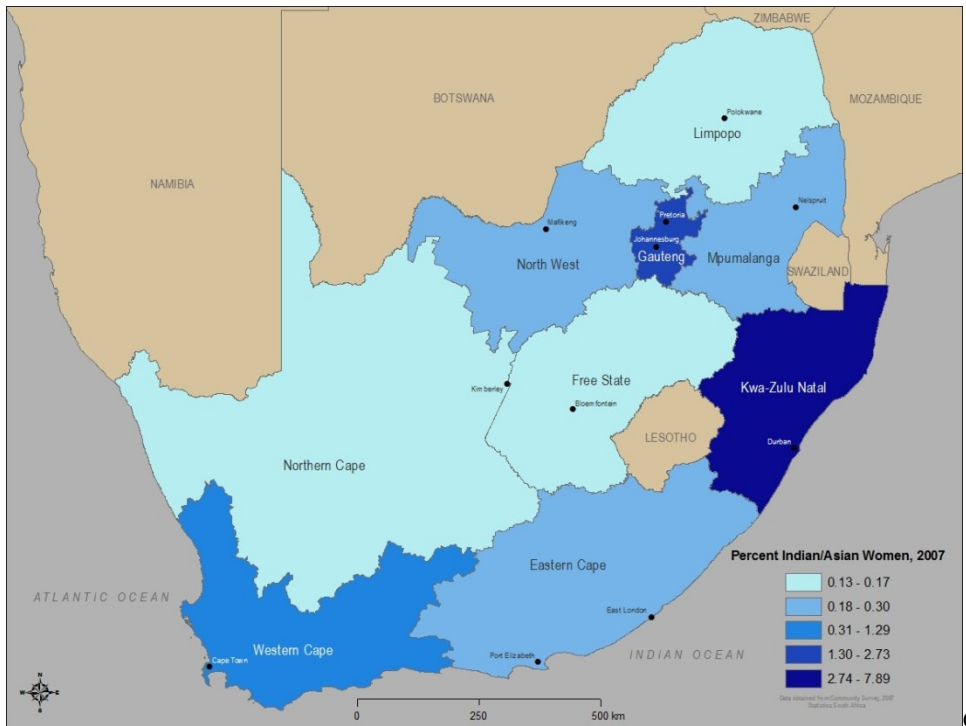
Figure 23. Spatial Distribution of Women by Population Group per Municipality, 2007.



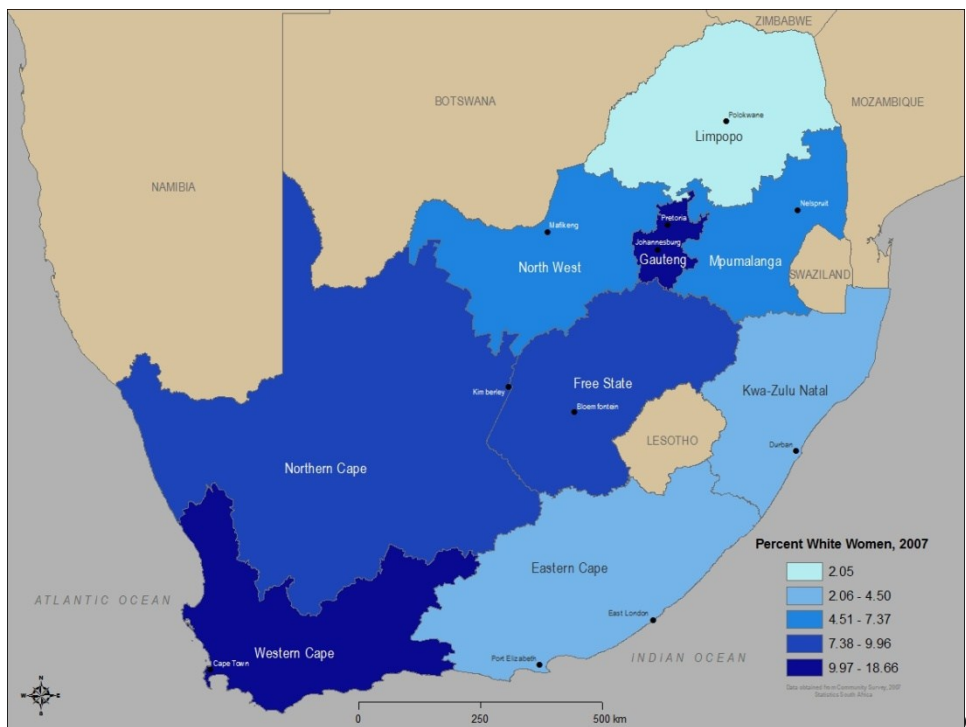
a) Black



b) Coloured



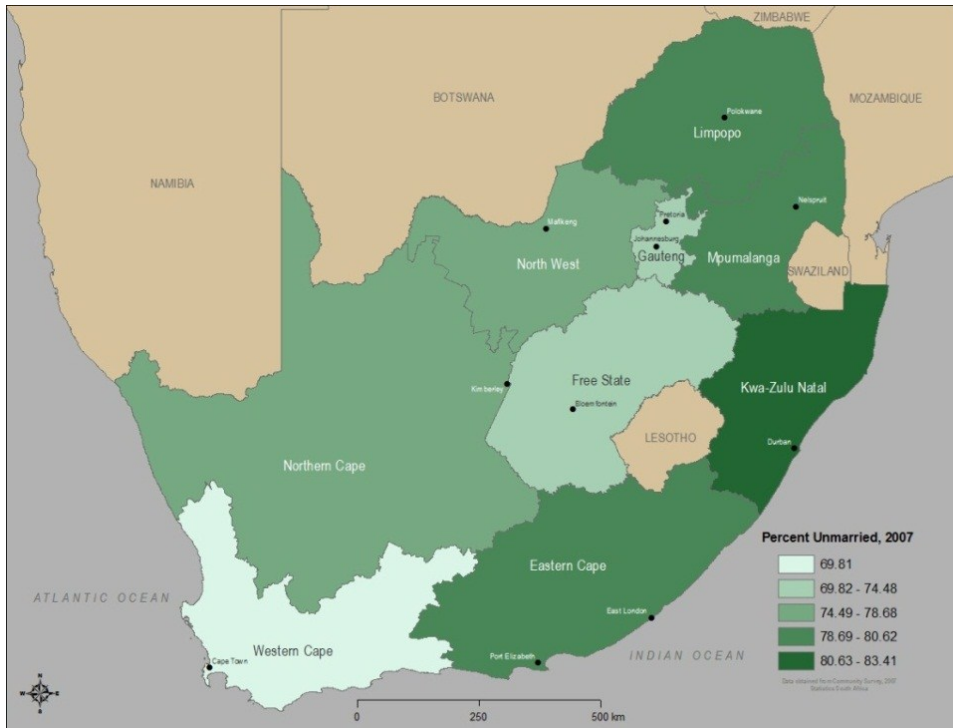
c) Indian/Asian



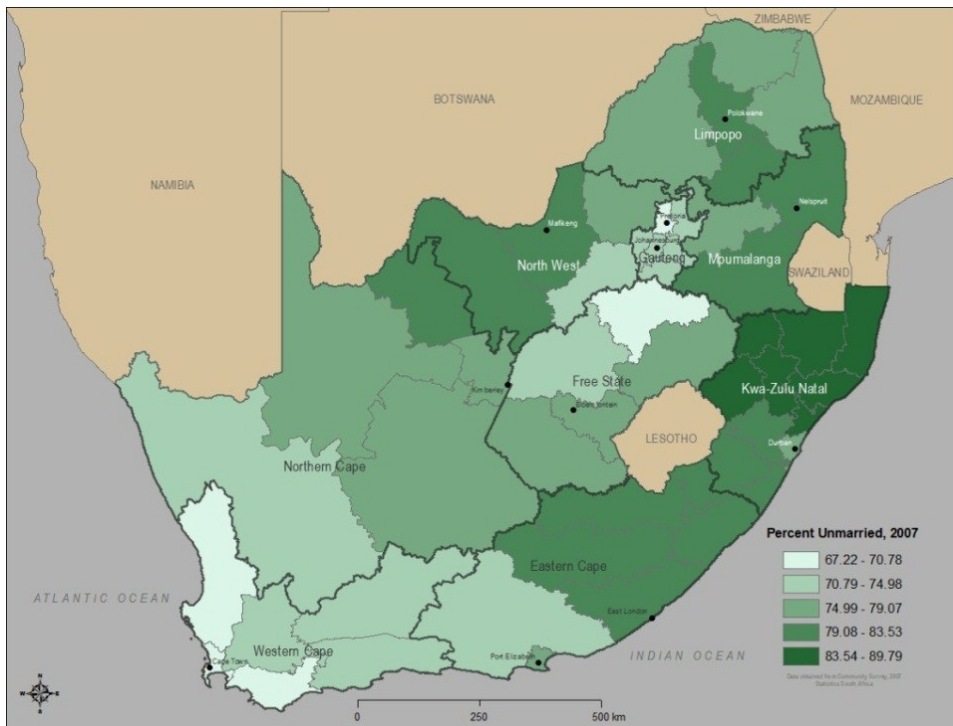
d) White

Figure 24. Spatial Distribution of Women by Population Group per Province, 2007

Figure 26 indicates that the provinces with the highest number of immigrants are Limpopo, Free State, and the Western Cape. Limpopo is a border province with the countries of Botswana, Zimbabwe and Mozambique, and as such it should not be surprising to contain large numbers of immigrants there. Similarly, the Western Cape is a sought after destination for many migrants from sub-Saharan Africa and beyond. Results from running the Hot Spot Analysis tool on the distribution of black women, marital status, and distribution of immigrants at municipality-level (spatial scale 3) are represented in Figure 27.

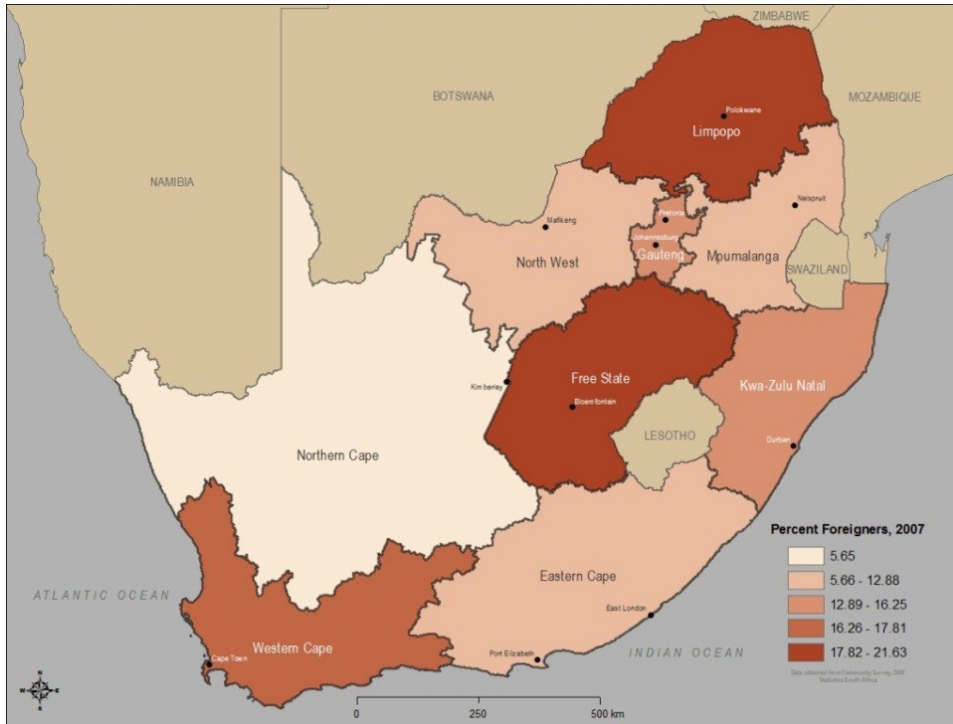


a) Province

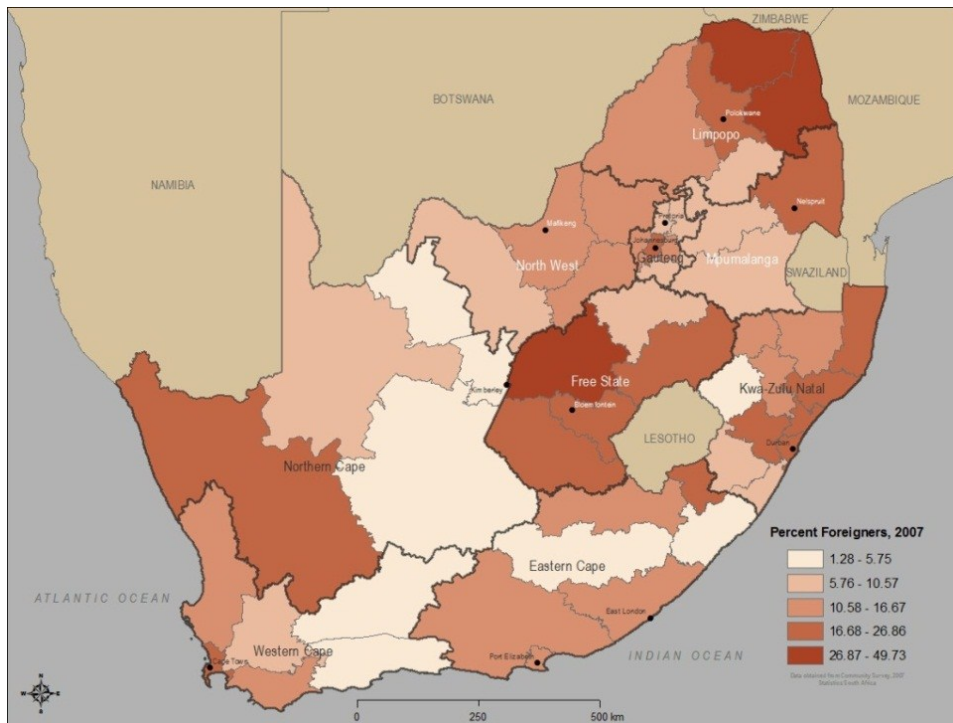


b) Municipality

Figure 25. Spatial Distribution of Singleness in South Africa, 2007.

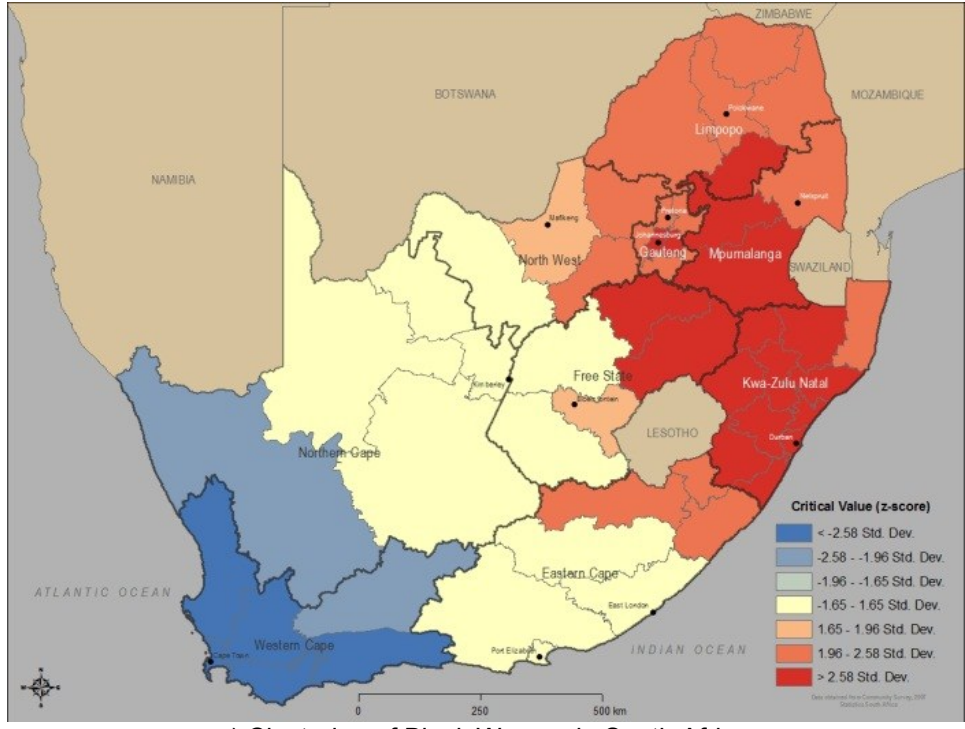


a) Province

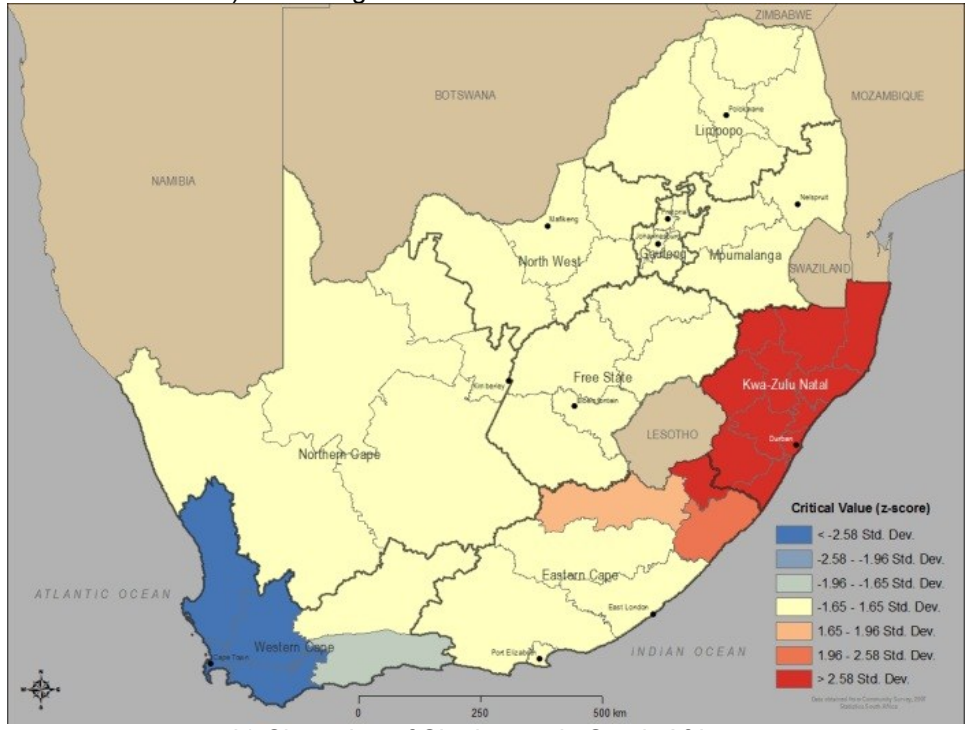


b) Municipality

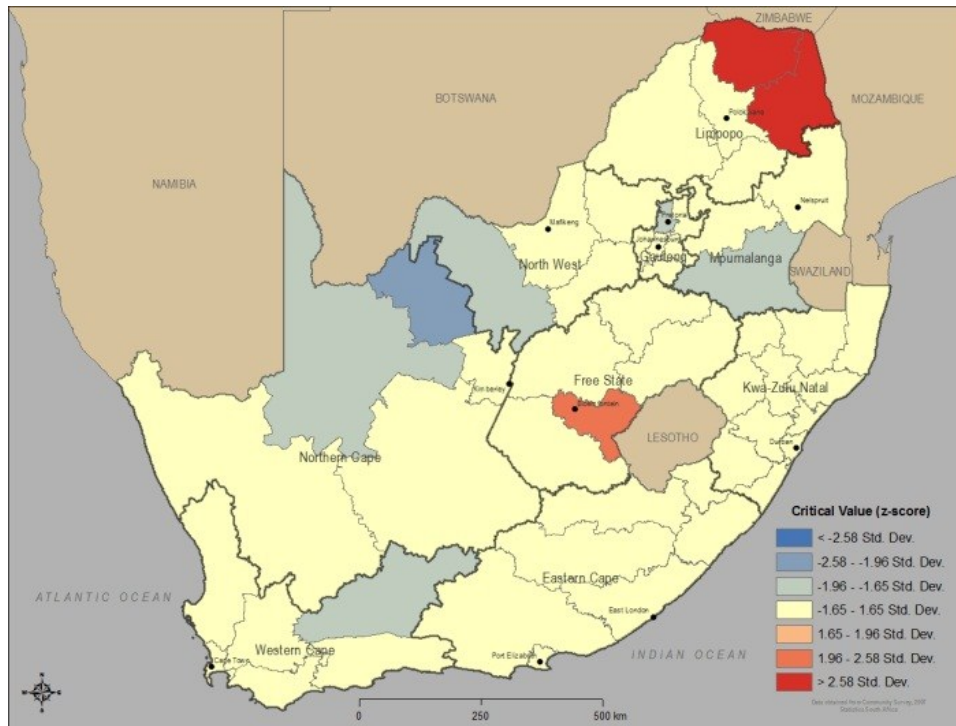
Figure 26. Spatial Distribution of Immigrants Living in South Africa, 2007.



a) Clustering of Black Women in South Africa



b) Clustering of Singleness in South Africa



c) Clustering of Immigrants in South Africa

Figure 27. Hot Spot Analysis for Stealing Women Grievance per District Municipality , 2007

There is significant clustering of high positive values (red) of black women in much of KwaZulu-Natal, Mpumalanga, Limpopo, and Gauteng provinces (Figure 27.a). The eastern half of the Free State and North West, as well as the northeastern part of the Eastern Cape also contain significant clustering of high positive values. There is significant clustering of high negative values (blue) in most of the Western Cape and the western half of the Northern Cape provinces. There is no significant clustering (yellow) of black women represented in a band beginning in the eastern Northern Cape and western North West province, extending southeastward through the western Free State and finishing in the western Eastern Cape province.

There is significant clustering of high positive values (red) for singleness in KwaZulu-Natal as well as the northeastern part of the Eastern Cape (Figure 27.b). Significant clustering of high negative values (blue) again occurs in most of the Western Cape. There is no significant clustering (yellow) of singleness across the rest of the country.

Significant clustering of high positive values (red) for the number of immigrants occurs in the northeastern most region of the Limpopo province (Figure 27.c). There is also a significant clustering of high positive values around the city of Bloemfontein, in the Free State. Significant high negative values (blue) occur in sporadic patches in the eastern Western Cape, northern Northern Cape, western North West province, southern Mpumalanga, and northwest Gauteng. There is no significant clustering (yellow) for the presence of immigrants across the rest of the country.

3. Spreading Disease

The spreading disease grievance indicates that the highest reported rates of death due to disease occur in the easternmost half of the country (Figure 28). Of the reported total causes of death in 2007, 27.49% - 36.16% of the deaths were caused by disease in KwaZulu-Natal and Mpumalanga. The Free State and Eastern Cape contained rates of 25.19% - 27.48%, whereas the Northern Cape and North West contained 18.94% - 25.18%. Gauteng and the Western Cape contained rates of 18.19% - 18.93% whereas Limpopo province contained the smallest rates of 18.18%.

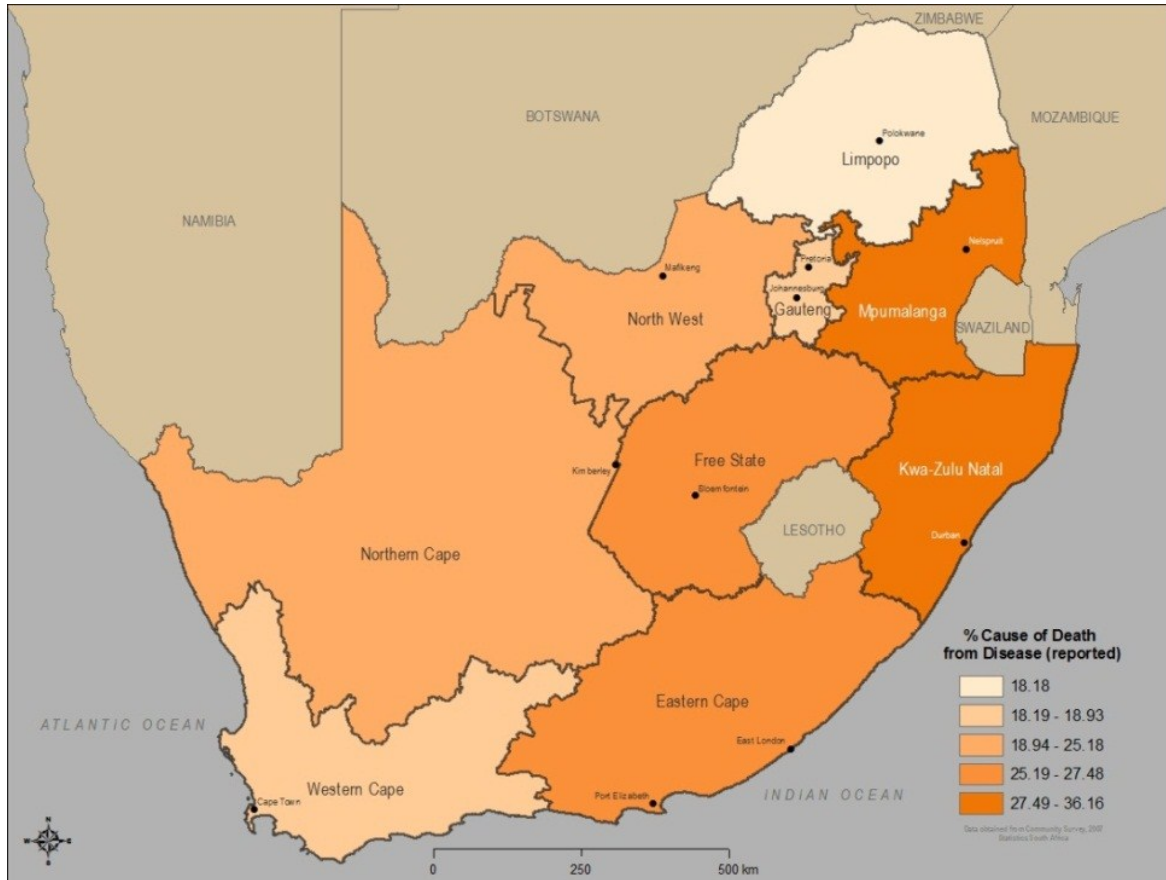


Figure 28. Spatial Distribution of Spread of Disease Grievance by Province, 2007.

4. Spread of Crime

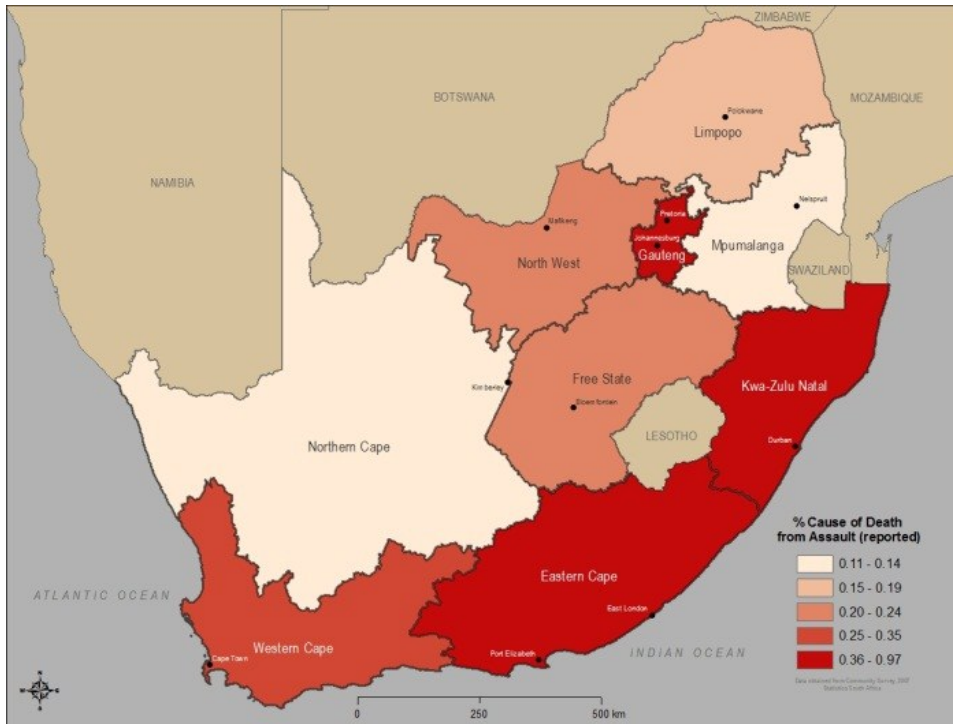
The spread of crime grievance was divided into five categories (Figure 29 a-e). The total reported causes of death by assault (Figure 29.a) reveals that the Eastern Cape, KwaZulu-Natal, and Gauteng contained the highest reported rates (0.36% - 0.97%). From highest to lowest, the crime by assault death was as follows: Western Cape (0.25% - 0.35%), Free State and North West (0.20% - 0.24%), Limpopo (0.15% - 0.19%), and the Northern Cape and Mpumalanga (0.11% - 0.14%).

2.32% - 2.65% of individuals polled in the Western Cape, Free State, and Mpumalanga had been beaten up outside the home (Figure 29.b). From highest to lowest, distribution of individuals polled who were beaten up outside the home was as follows: Gauteng (2.16% - 2.31%), Northern Cape and KwaZulu-Natal (1.70% - 2.15%), North West and Eastern Cape (0.97% - 1.69%), and Limpopo (0.96%).

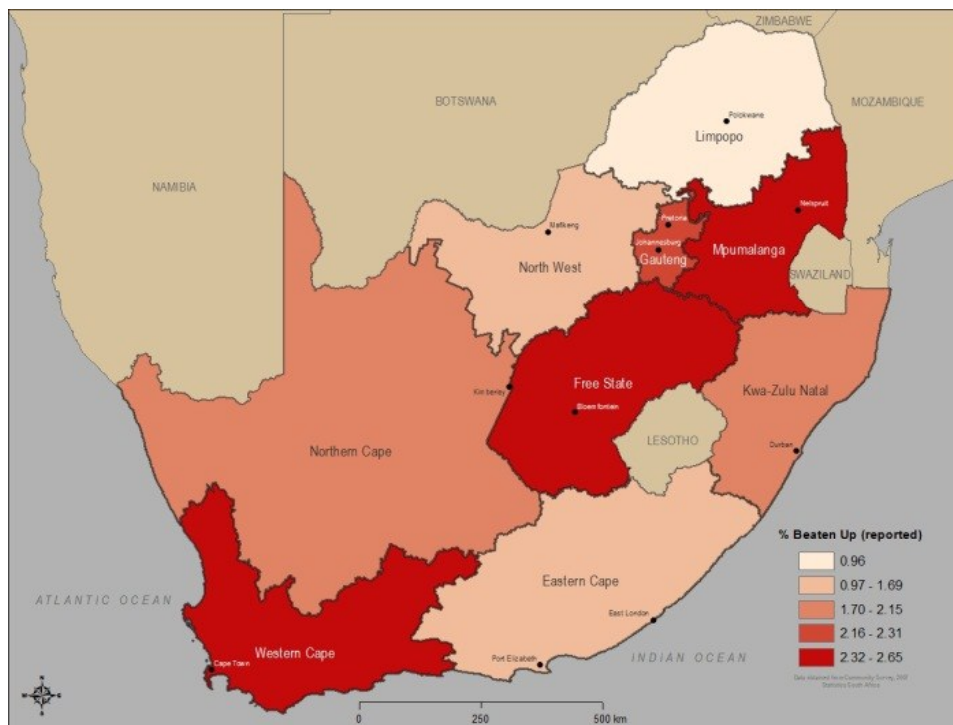
11.85% - 15.59% of individuals polled in the Western Cape reported to have had possessions stolen in 2007 (Figure 29.c). From highest to lowest, distribution of individuals polled who had things stolen was as follows: Gauteng, North West, KwaZulu-Natal, Eastern Cape (8.83% - 11.84%), Free State and Mpumalanga (6.79% - 8.82%), Northern Cape (5.87% - 6.78%), and Limpopo (5.86%).

4.68% - 5.08% of individuals polled in the Western Cape and Free State reported to have been harassed outside the household in 2007 (Figure 29.d). From highest to lowest, the distribution of individuals polled who had been harassed outside the household was as follows: Northern Cape and Gauteng (3.91% - 4.67%), Eastern Cape and KwaZulu-Natal (3.34% - 3.90%), North West and Mpumalanga (2.12% - 3.33%), and Limpopo (2.11%).

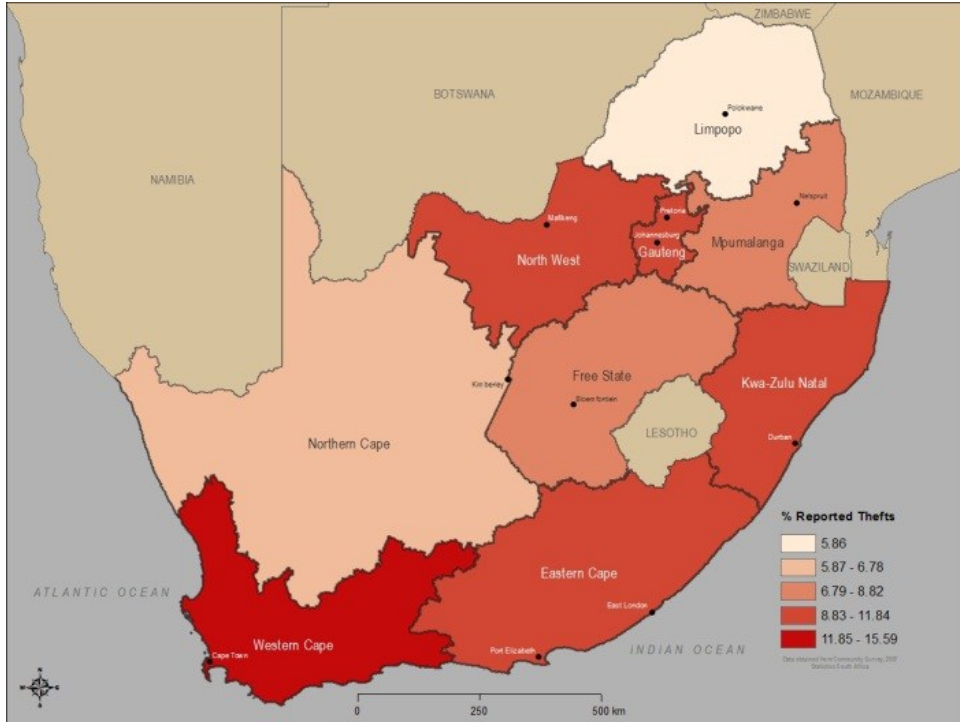
0.78% - 0.96% of individuals polled in the North West province reported to have been sexually assaulted outside the household in 2007 (29.e). From highest to lowest, the distribution of individuals polled who had been sexually assaulted outside the household was as follows: Gauteng and the Eastern Cape (0.54% - 0.77%), the Free State, Mpumalanga, and KwaZulu-Natal (0.23% - 0.53%), the Western Cape (0.21% - 0.22%), and the Northern Cape and Limpopo (0.17% - 0.20%).



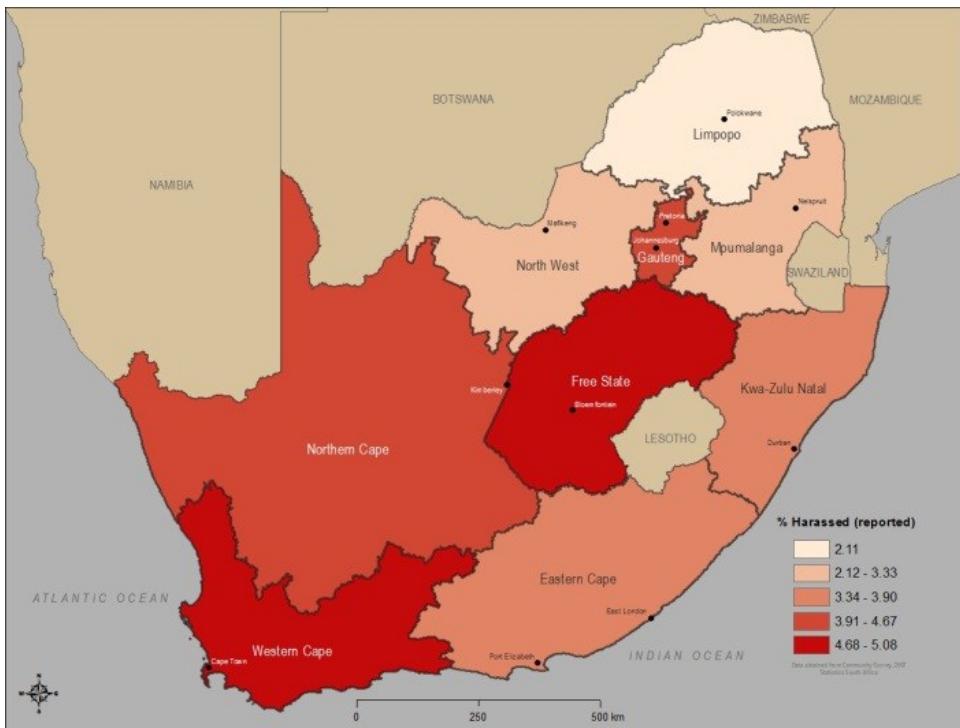
a) Assault



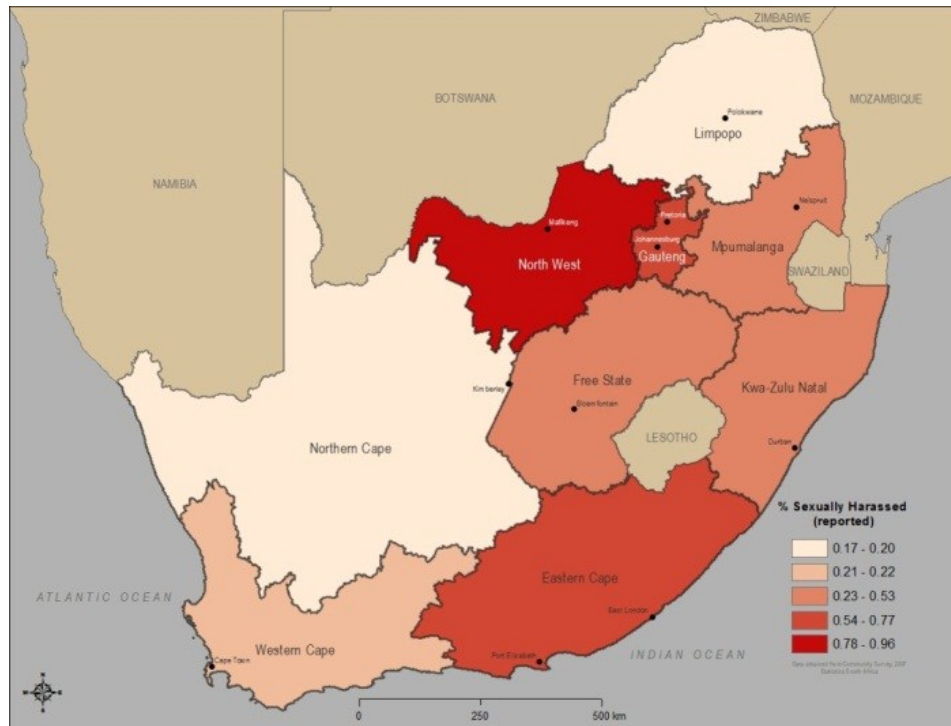
b) Beaten



c) Theft



d) Harassed



e) Sexually Assaulted

Figure 29. Spatial Distribution of Spread of Crime Grievance by Province, 2007.

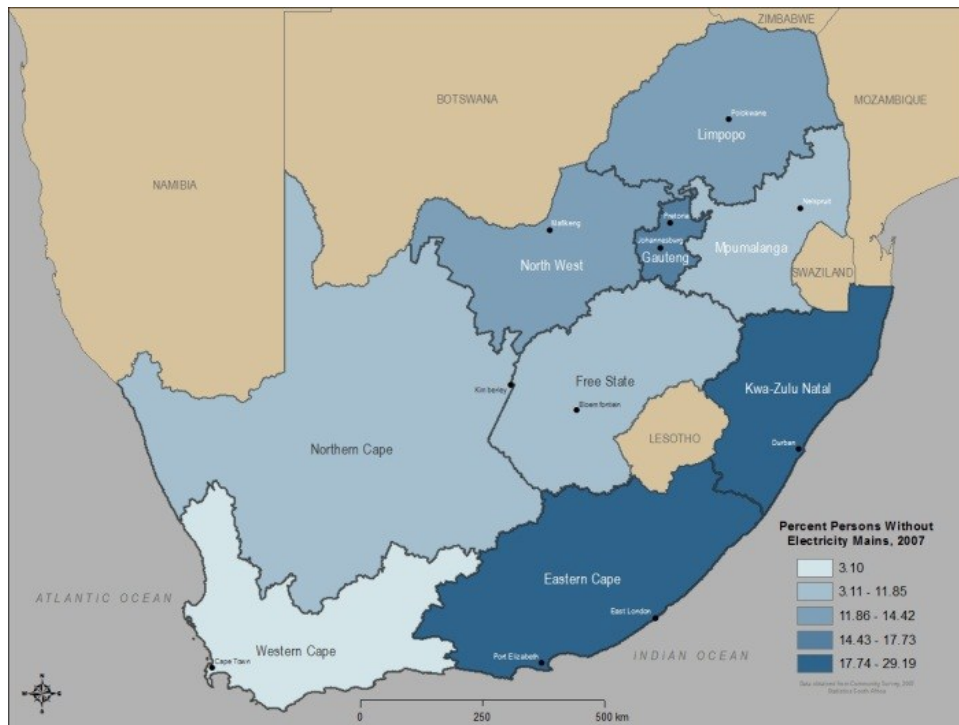
5. Poor Service Delivery

The poor service delivery grievance was represented by three categories (Figure 30.a-c). 17.74% - 29.19% of individuals polled in the Eastern Cape and KwaZulu-Natal were without access to an electricity mains in the household (Figure 30.a). From highest to lowest, the distribution of individuals polled without access to an electricity mains was as follows: Gauteng (14.43% - 17.73%), the North West and Limpopo (11.86% - 14.42%), the Northern Cape, Free State, and Mpumalanga (3.11% - 11.85%), and the Western Cape (3.10%).

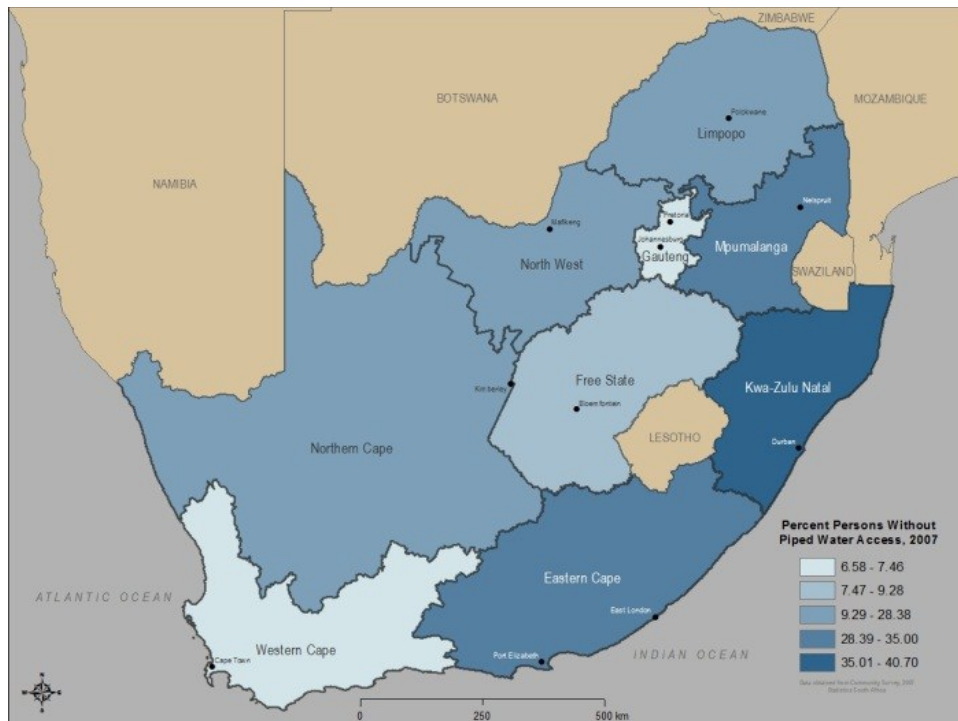
35.01% - 40.70% of individuals polled in KwaZulu-Natal were without access to piped water in 2007 (Figure 30.b). From highest to lowest, the distribution of individuals polled without access to piped water was as follows: the Eastern Cape and Mpumalanga (28.39% - 35.00%), the Northern Cape, North West, and Limpopo (9.29% - 28.38%), the Free State (7.47% - 9.28%), and the Western Cape (6.58% - 7.46%).

97.41% - 99.20% of individuals polled in Gauteng and the Western Cape were without access to land in 2007 (Figure 30.c). From highest to lowest, the distribution of individuals polled without access to land

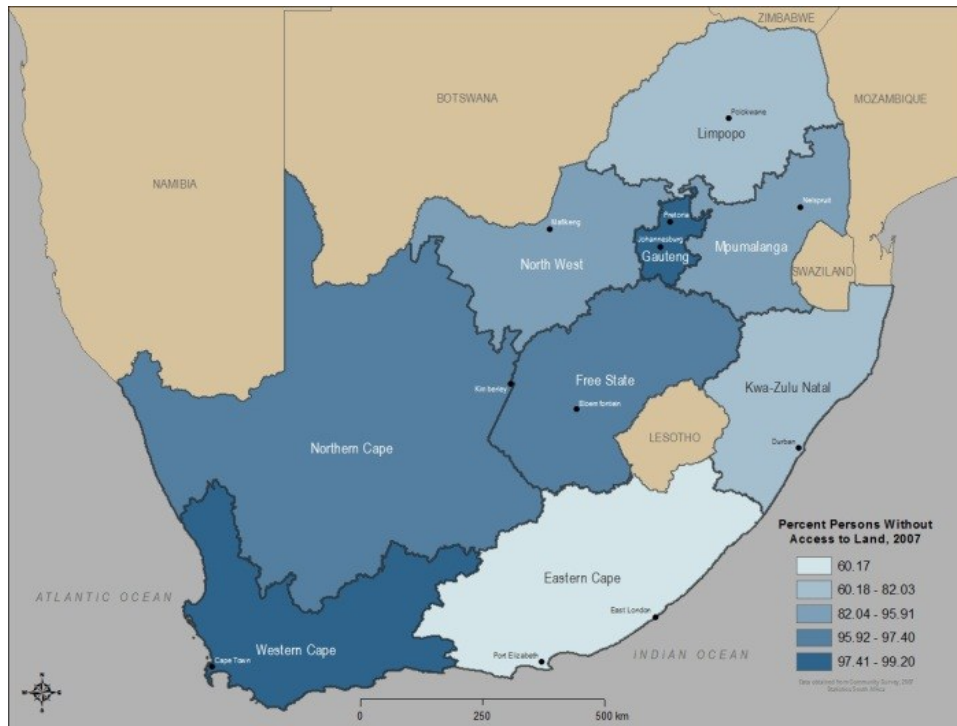
was as follows: the Northern Cape and Free State (95.92% - 97.40%), the North West and Mpumalanga (82.04% - 95.91%), Limpopo and KwaZulu-Natal (60.18% - 82.03%), and the Eastern Cape (60.17%).



a) No Electricity



b) No Water



c) No Land

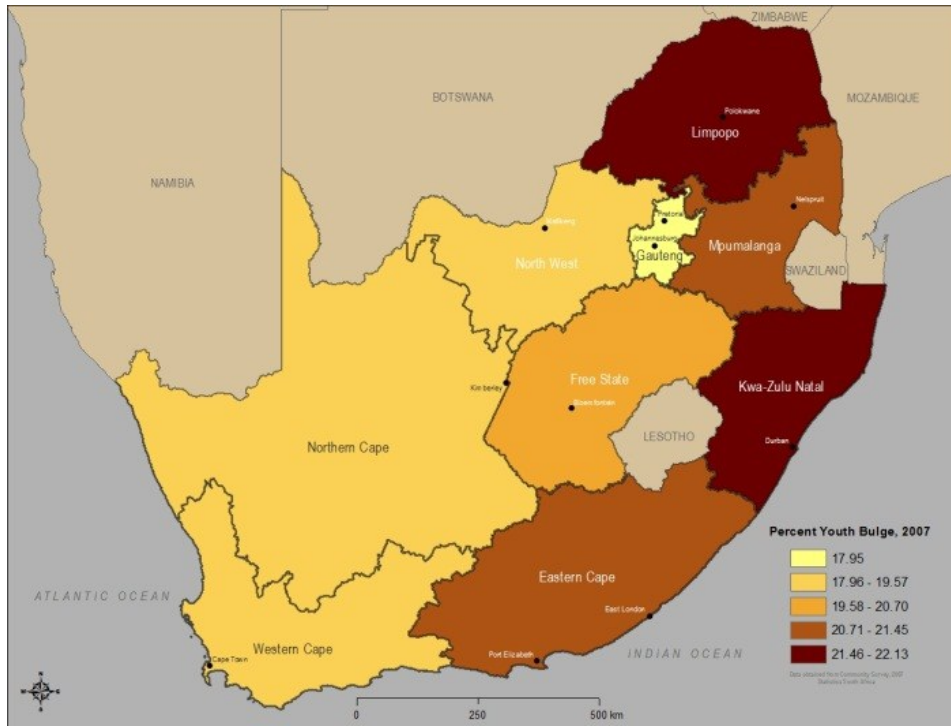
Figure 30. Spatial Distribution of Poor Delivery Grievance by Province, 2007.

Opportunity Maps

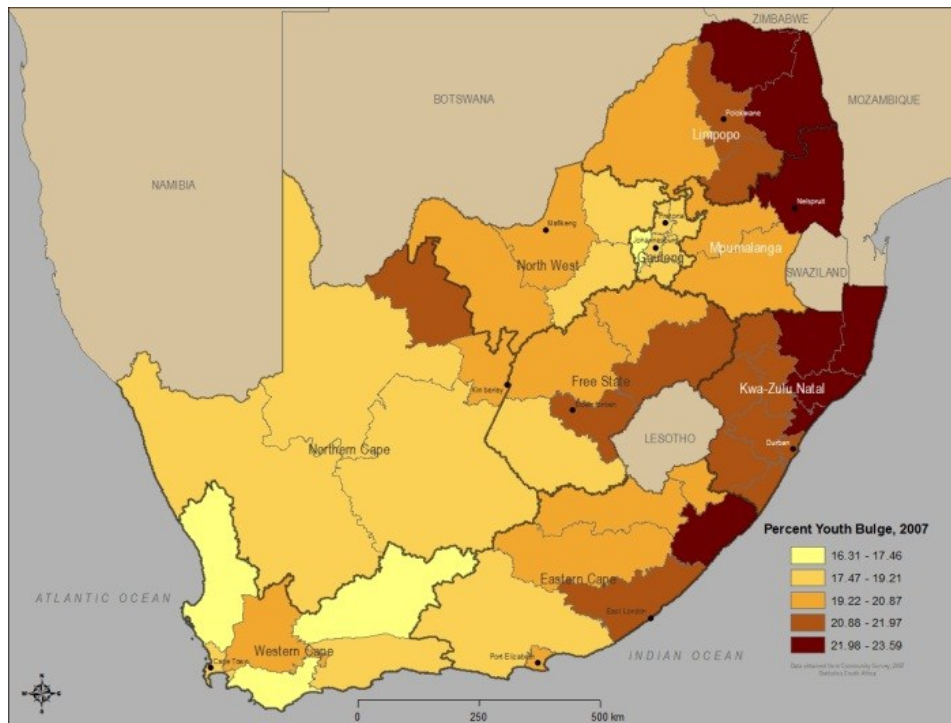
1. Youth Bulge

The distribution of youth bulges across the country was represented at both spatial scales (Figure 31.a-b). The larger youth bulges were concentrated to the eastern half of the country. KwaZulu-Natal and Limpopo provinces contained a youth bulge rate of 21.46% - 22.13% (Figure 31.a). From highest to lowest the distribution of youth bulges across the country were as follows: the Eastern Cape and Mpumalanga (20.71% - 21.45%), the Free State (19.58% - 20.70%), the Western Cape, Northern Cape, and North West (17.96% - 19.57%), and Gauteng (17.95%).

There is significant clustering of high positive values (red) of youth bulges in much of KwaZulu-Natal, northeastern Limpopo province, and northeastern Eastern Cape (Figure 32). There is significant clustering of high negative values (blue) in the western half of the Western Cape as well as in the central and northeastern parts of the North West province, most of Gauteng province, as well as the northeastern part of the Free State. The remainder of the country experienced no significant clustering (yellow) of youth bulges.



a) Province



b) Municipality

Figure 31. Spatial Distribution of Youth Bulge by Province and District Municipality, 2007.

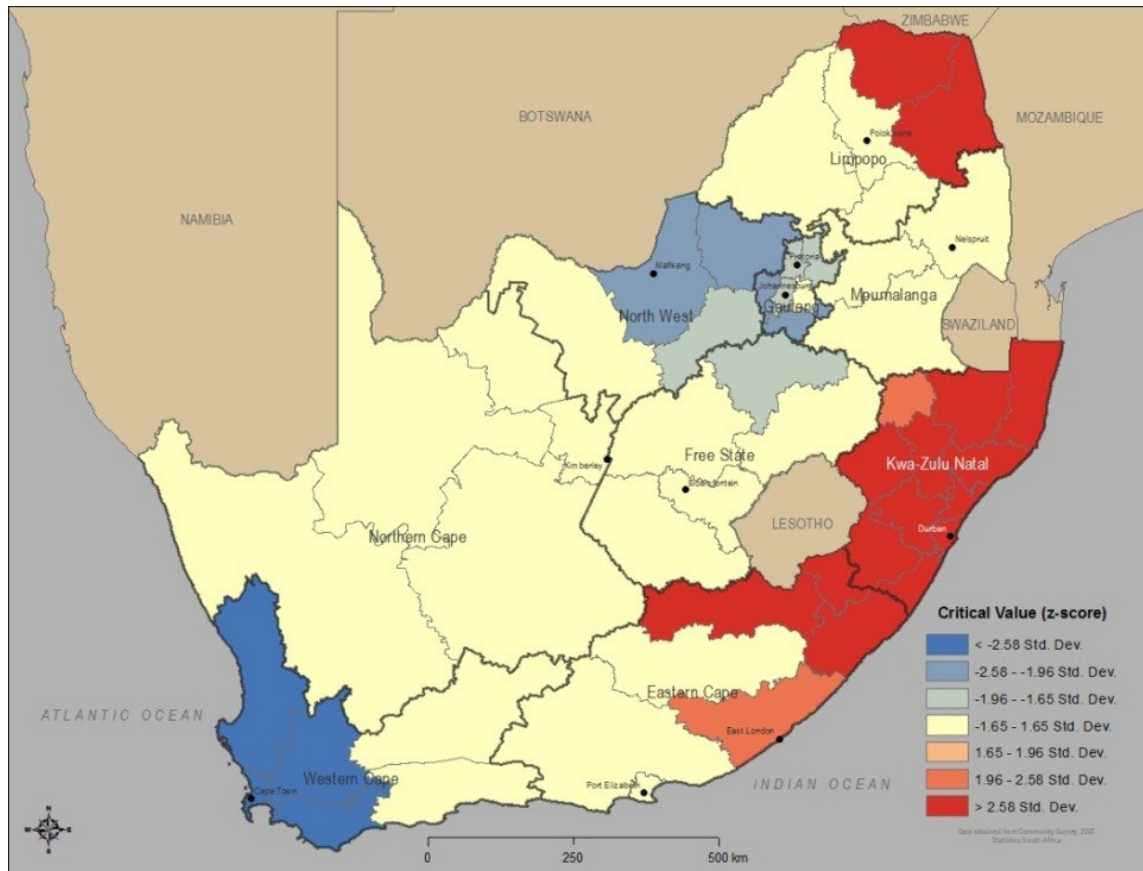


Figure 32. Hot Spot Analysis of Youth Bulge by District Municipality, 2007.

2. Poverty

The poverty opportunity was represented by three categories (Figure 33.a-c). 7.30% - 8.46% of individuals polled in Gauteng and Limpopo provinces indicated that they had children living on the streets (Figure 33.a). In descending order, the distribution of individuals polled who had children living on the streets was as follows: the Free State, Mpumalanga, and KwaZulu-Natal (5.07% - 7.29%), the Northern Cape (4.14% - 5.06%), the North West and the Eastern Cape (2.27% - 4.16%), and the Western Cape (2.26%).

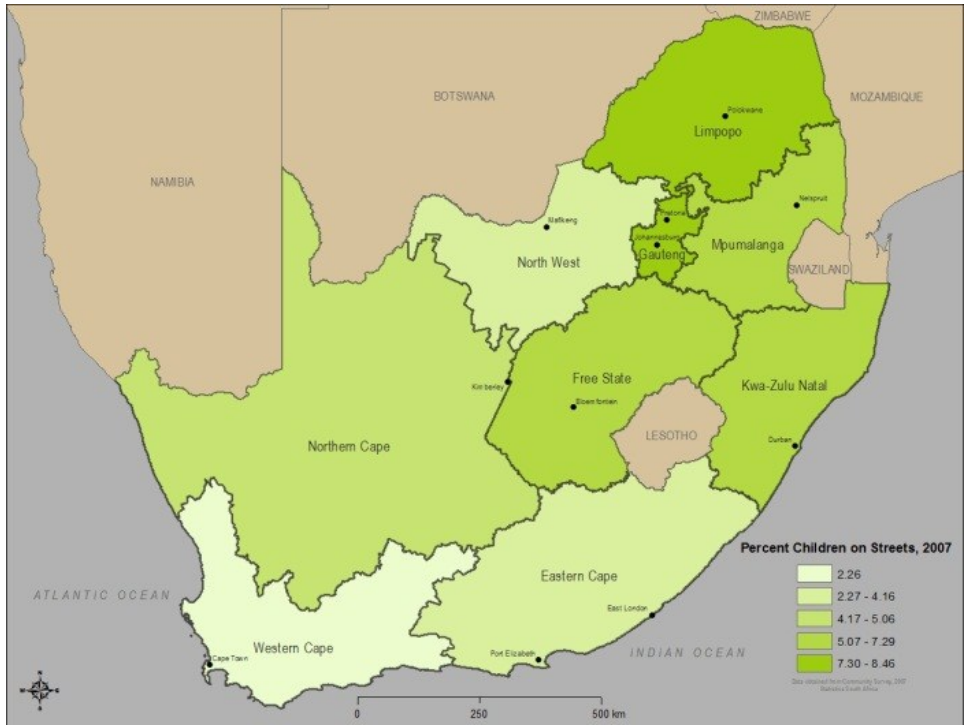
42.15% - 50.10% of individuals polled in the Free State could not afford water in 2007 (Figure 33.b). In descending order, the distribution of individuals polled who could not afford water was as follows: Mpumalanga and the Northern Cape (26.42% - 42.14%), Gauteng and the Western Cape (16.04% -

26.41%), Limpopo, the North West, and KwaZulu-Natal (12.44% - 16.03%), and the Eastern Cape (12.43%).

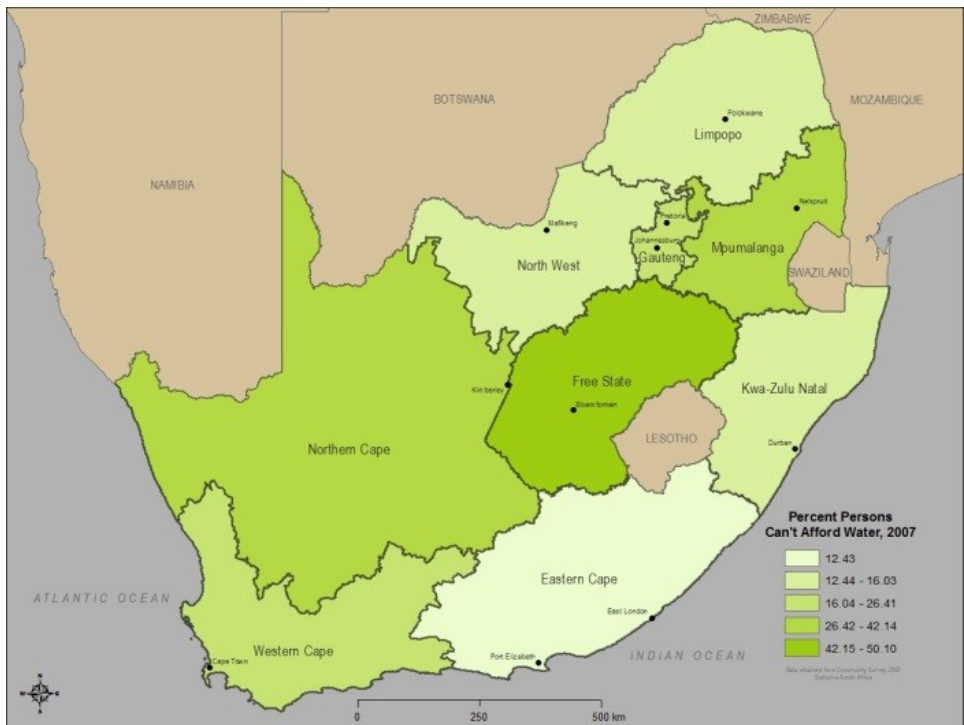
81.08% - 86.30% of individuals polled in Limpopo and the Eastern Cape were without access to a car in 2007 (Figure 33.c). In descending order, the distribution of individuals polled without a car was as follows: KwaZulu-Natal (77.61% - 81.07%), the Northern Cape, the North West, the Free State, and Mpumalanga (66.63% - 77.60%), Gauteng (64.05% - 66.62%), and the Western Cape (64.04%).

Modified Poverty Rate (*MPR*)

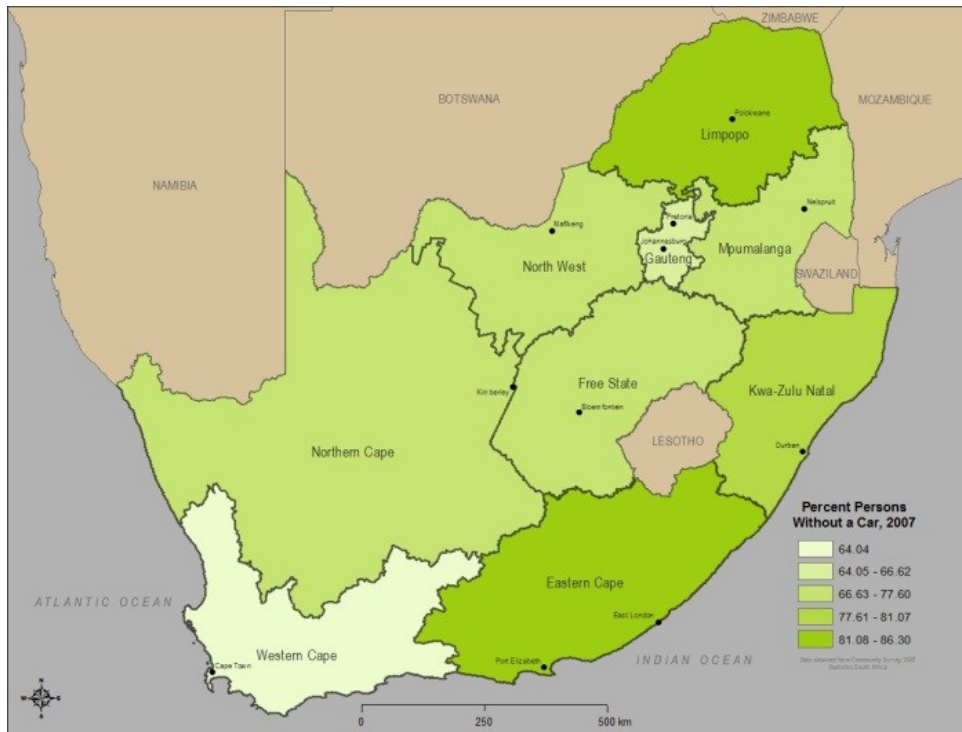
Poverty was further analyzed by geospatially representing *MPR* by province and district municipality (Figure 34). The Eastern Cape and Limpopo province contained the highest ratios of *MPR* across the study area. The ratios of individuals living under the *MPR* across the rest of the country are as follows: 68.81% - 75.82% of those living in the Eastern Cape and Limpopo province, 64.87% - 68.80% of those living in Mpumalanga and KwaZulu-Natal, 53.51% - 64.86% of those living in the Northern Cape, Free State, and North West, 49.36% - 53.50% of those living in Gauteng, and 49.35% of those living in the Western Cape. There is significant clustering of high positive values (red) of *MPR* in KwaZulu-Natal, northeastern Limpopo province, and northeastern Eastern Cape (Figure 35). There is significant clustering of high negative values (blue) in the western and southern halves of the Western Cape. The remainder of the country experiences no significant clustering (yellow) of *MPR*.



a) Street Children

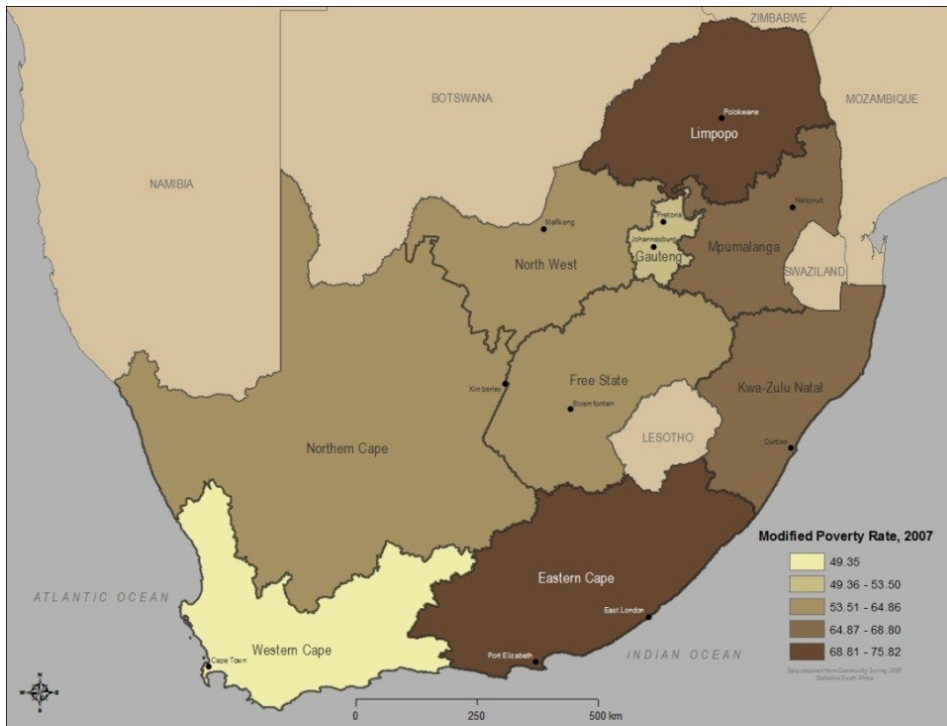


b) Can't Afford Water

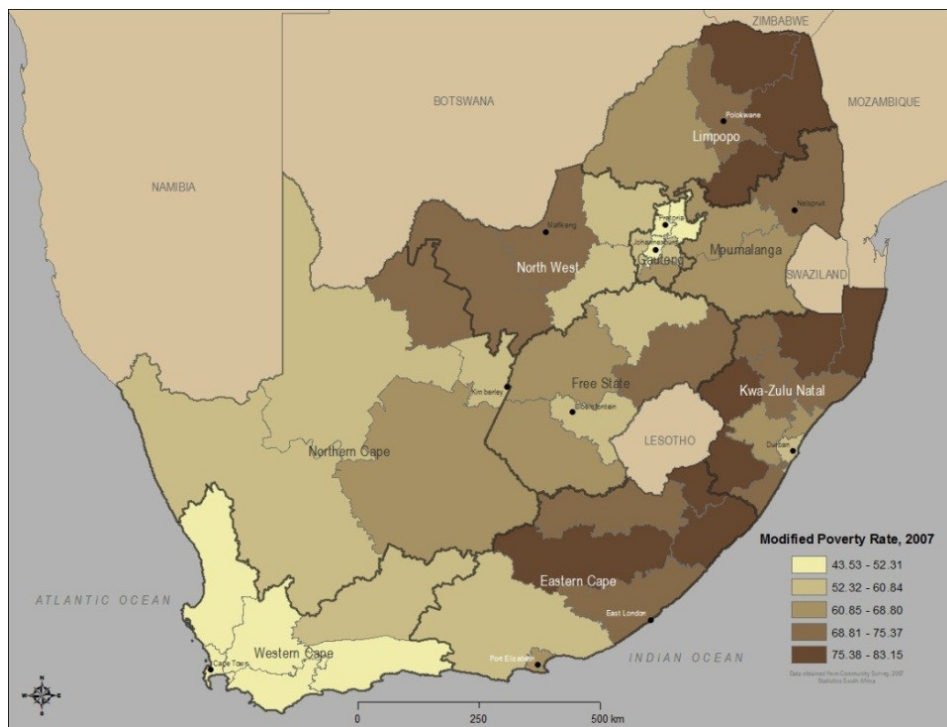


c) Without a Car

Figure 33. Spatial Distribution of Poverty per Province, 2007.



a) Province



b) District Municipality

Figure 34. Spatial Distribution of Modified Poverty Rate (MPR) Opportunity, 2007.

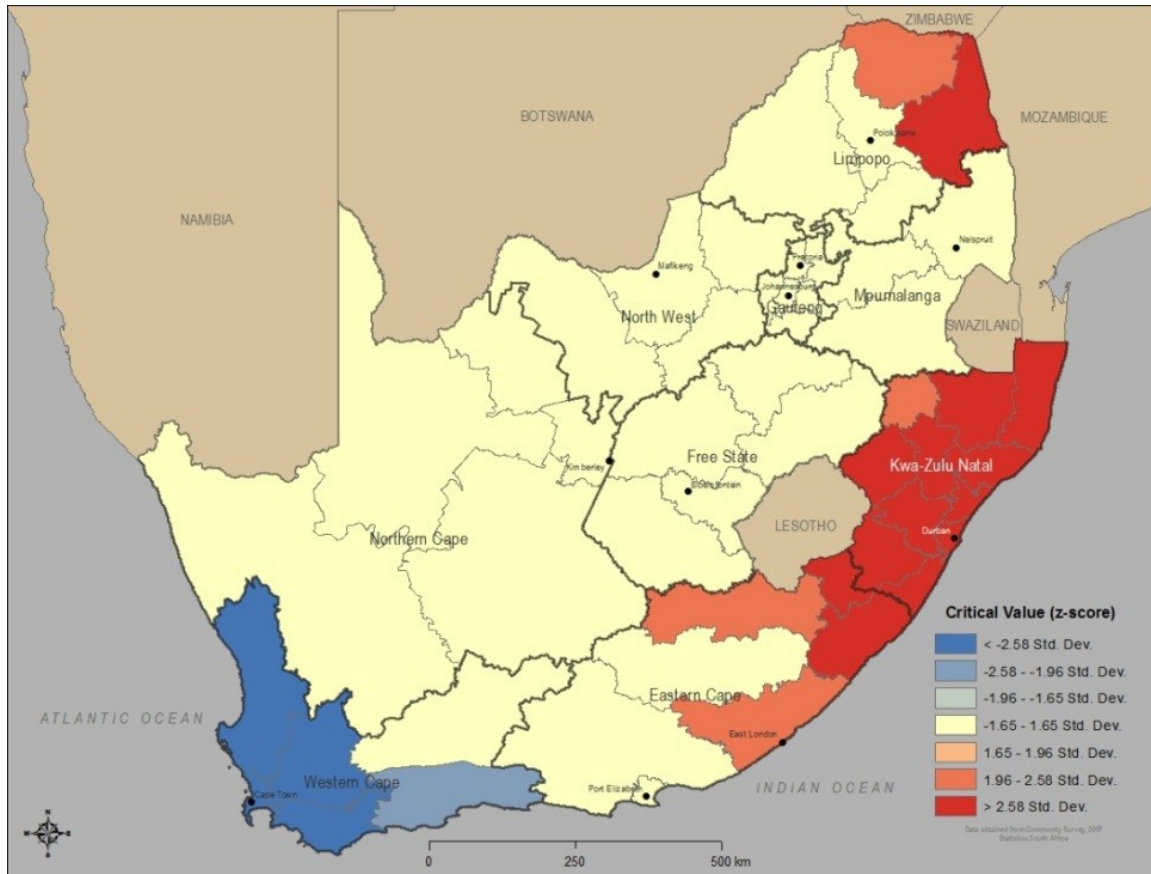


Figure 35. Hot Spot Analysis of *MPR* by District Municipality, 2007.

Modeling Spatial Relationships

Prior to running the *OLS* model, exploratory regression analysis was carried out on the explanatory variables (grievances and opportunities) in order to ensure that the most effective combination of variables was used to support the dependent variable in the *OLS* equation. Exploratory Regression Analysis was carried out on six explanatory variables; four grievances (unemployment rates, distribution of black women, singleness, and distribution of foreigners) and two opportunities (*MPR* and youth bulge). The results of running Exploratory Regression Analysis revealed the summary of variable significance (Appendix A), possible variable redundancies (Appendix B), and the highest adjusted R-Squared results (Appendix C).

The exploratory regression analysis indicates that unemployment rates (*OLSFINAL.UNEMPL*) are significant in explaining 93.55% of that variable towards the dependent variable. The number of black

women (OLSFINAL.B_WOMEN) was significant in explaining 38.71% of that variable towards the dependent variable. Singleness (OLSFINAL.SINGLENESS) was significant in explaining 54.84% of that variable towards the dependent variable. The number of foreigners (OLS.FOREIGNERS) was significant in explaining only 29.03% of that variable towards the dependent variable. Finally youth bulges (OLSFINAL.YOUTHBULGE) were significant in explaining 70.97% of that variable towards the dependent variable. *MPR* (OLSFINAL.MPR) was significant in explaining only 25.81% of that variable towards the dependent variable.

MPR was shown to cause the greatest variable redundancy with other covariates (93.75 with singleness, 93.75 with unemployment, 93.75 with youth bulge, 81.25 with distribution of black women, and 31.25 with distribution of foreigners). Due to the poor performance by this variable in the tests of variable significance and variable redundancy, *MPR* was removed from the *OLS* equation.

The statistic used to determine the effectiveness of the *OLS* tool is the adjusted R-Squared statistic. The highest adjusted R-Squared result from running the *ERM* was 0.68 (Appendix C). The adjusted R-Squared value is used to measure model performance and reflects model complexity (the number of variables) as it relates to the data, and consequently is a more accurate measure of model performance (cite). Possible values range from 0.0 to 1.0. The adjusted R-Squared value of 0.68 indicates that this predictive model explains approximately 68% of the variation in the dependent variable, or 68% of the 2008 xenophobic violence. The set of explanatory variables that were associated with producing this high adjusted R-Squared result, in comparison to other combinations of variables that produced much lower adjusted R-Squared results, were chosen to serve as the independent variables in the regression equation. Exploratory Regression Analysis eliminated the redundant variables, (*MPR*) and the distribution of black women, so that the *OLS* model could run as efficiently as possible. Results of the analysis also revealed that the strongest combination of explanatory variables to measure variable significance to the location of the 2008 violence were: unemployment rates (OLSFINAL.UNEMPL), singleness, (OLSFINAL.SINGLENESS), distribution of foreigners (OLSFINAL.FOREIGNERS), and youth bulge (OLSFINAL.YOUTHBULGE). The equation used to run the *OLS* model across the study area is as follows:

$$2008 \text{ Locations of Xenophobic Violence} = \beta_0 + \beta_1(\text{OLSFINAL.UNEMPL}) + \beta_2(\text{OLSFINAL.SINGLENESS}) + \beta_3(\text{OLSFINAL.FOREIGNERS}) + \beta_4(\text{OLSFINAL.YOUTH BULGE}) + \varepsilon$$

Figure 36 illustrates the distribution of residuals across the study area. Residuals are the unexplained portion of the dependent variable, represented in the regression equation as the random term error, ε (ArcGIS Resource Center).

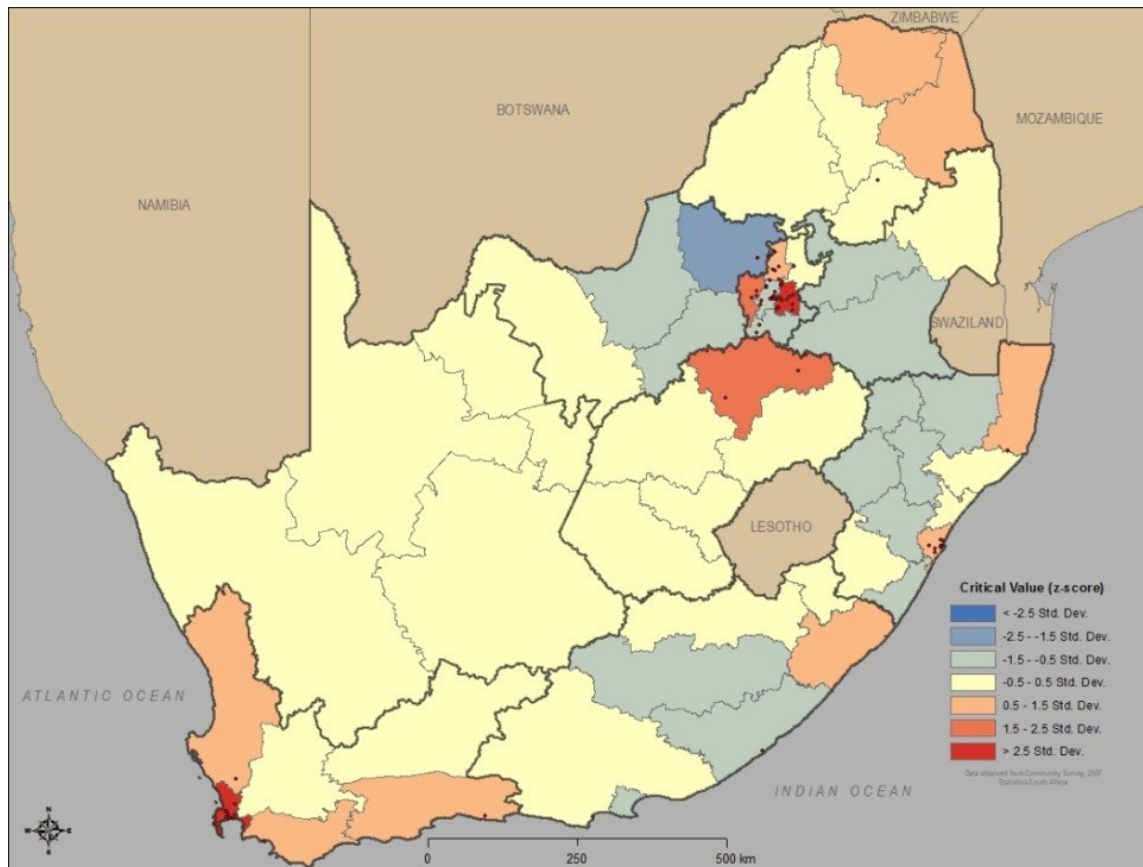


Figure 36. Map of OLS Residuals

Using known values for the dependent variable (Y) and known values for all of the explanatory variables (the X's), the regression tool constructs an equation that will predict those known Y values as well as possible. The difference between the observed Y values and the predicted Y values are known as the residuals. The magnitude of the residuals from a regression equation is one measure of model fit. Large residuals indicate a poor fit.

In order to ensure that the residuals displayed in Figure 36 are random, and therefore not statistically significant or spatially correlated, the Spatial Autocorrelation (Morans I) tool was run. The spatial autocorrelation report produced a z-score of 0.32, thereby indicating that the residuals produced from the OLS tool were indeed random and not statistically significant (Figure 37). So, although there are over/under predictions represented as high z-scores (red) and low z-scores (blue), clustering of these over/under predictions are random.

Appendix D and Appendix E reveal the results and diagnostics, respectively, of the OLS analysis. The coefficient for each explanatory variable reflects both the strength and type of relationship the explanatory variable has to the dependent variable. The coefficient reflects the expected change in the dependent variable for every 1 unit change in the associated explanatory variable, holding all other variables constant. The results are interpreted as follows: a 0.000035 increase in the number of xenophobic attacks is expected for each additional person unemployed (OLSFINAL.UNEMPL) across the study area, a 0.000021 increase in the number of xenophobic attacks is expected for each additional single person (OLSFINAL.SINGLENESS) across the study area, a 0.000169 decrease in the number of xenophobic attacks is expected for each additional foreigner (OLSFINAL.FOREIGNERS) across the study area, and a 0.000089 decrease in the number of xenophobic attacks is expected for each additional youth bulge increase (OLSFINAL.YOUTH BULGE) across the study area. The OLS diagnostics report reveals that the Koenker (BP) Statistic is statistically significant (0.000064*). Since this statistic is statistically significant, the robust probabilities are used to assess explanatory variable statistical significance. An explanatory variable associated with a statistically significant coefficient is important to the regression model if causal theory supports a valid relationship with the dependent variable, which is true in this case. The Joint Wald Statistic is a measure of overall model statistical significance. The null hypothesis for this test is that the explanatory variables in the model *are not effective*. For a 95% confidence level, a p-value (probability) smaller than 0.05 indicates a statistically significant model. The associated p-value for the Joint Wald Statistic (0.000000*) is smaller than 0.05, and as such, indicates a statistically significant model. This also reveals that the null hypothesis is incorrect, and that the explanatory variables in the model *are effective*.

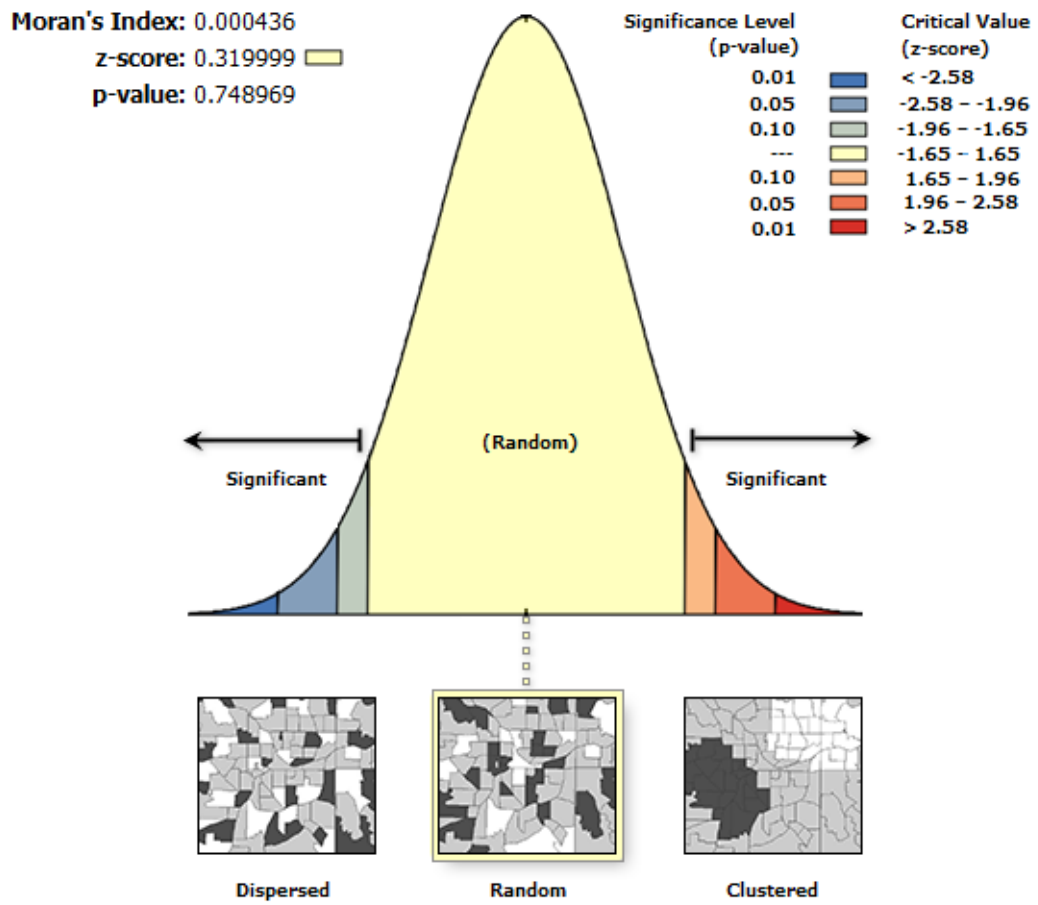


Figure 37. Spatial Autocorrelation Report of OLS Residuals.

Correlation Analysis of Explanatory Variables

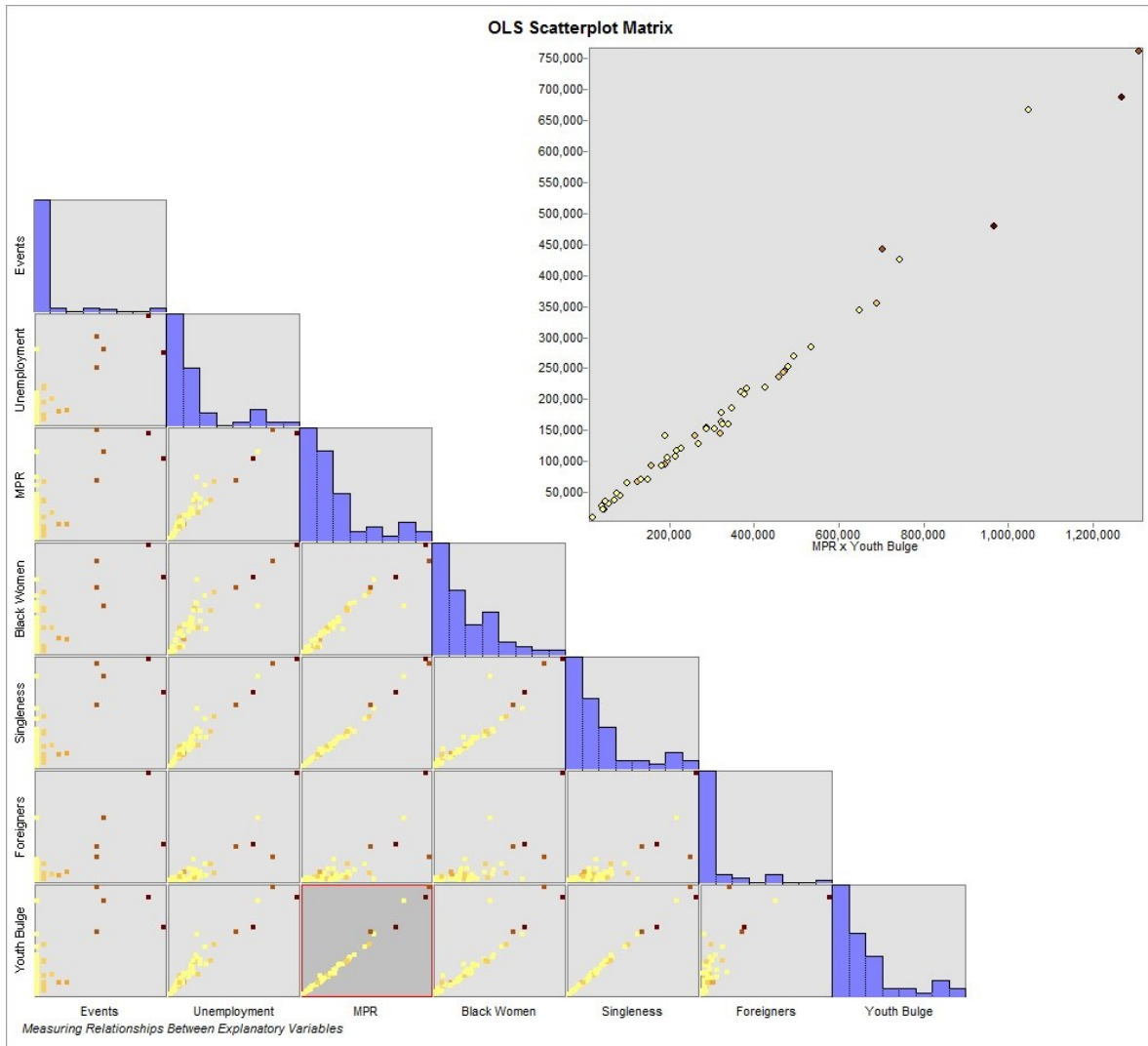


Figure 38. Explanatory Variables Scatterplot Matrix

Correlation analyses, and their associated graphics depicted in Figure 38 test the strength of the relationship between the explanatory variables. The highlighted set of explanatory variables in Figure 38 (Youth Bulge and MPR) indicates a very strong positive relationship between both variables. In this case, the more individuals living under the modified poverty line, the greater the youth bulge. It should be important to note that there is neither a positive or negative relationship between the 2008 xenophobic events (Events) and any of the six explanatory variables. Similarly, when Foreigners is used as part of a

correlation analysis, the resulting relationship is neither positive nor negative. All other variables, however, produce strong positive relationships when correlated.

VI. DISCUSSION

The data derived and discussed from the methodology and results sections of this study indicate that it is possible to geospatially represent grievances and opportunities which lead to xenophobic violence in South Africa. This study builds on previous research by targeting the importance of grievance and opportunity as contributory motives towards xenophobic violence. The following discussion section explains how the analytical processes carried out in this study are effective in measuring the propensity for xenophobic violence in South Africa.

By obtaining census data representative of group grievance and group opportunity, it was possible to identify the spatial distribution of each across the study area, represented in each case by quantitative thematic maps. The creation of the grievance and opportunity maps served as the first level of analysis of the geographic phenomenon that is xenophobic violence. This first level of analysis began to answer the question of “where” grievances and opportunities are distributed across the study area. Grievance and opportunity magnitude were also addressed through the analysis.

After each grievance and opportunity was cartographically represented, the second level of analysis could be carried out through assessing the degree of significant statistical relationship between EA units representing each grievance and opportunity. This level of analysis answered the question of “where” spatial patterns are distributed across the study area. The ESRI Hot Spot Analysis (Getis-Ord G_i^*) Model identified the geographic locations that contained the highest and lowest degree of clustering.

The first two levels of analysis identified the intensity of distribution of the grievances and opportunities as well as the distance relationships between the grievances and opportunities. These two levels of analysis addressed “where” the data was spatially located across the study area. The next logical question involves the “why”. Using regression analysis, the spatial relationships represented during the first two levels of analysis were modeled to create a regression equation revealing the degree to which the hypothesis of this study is correct. The utilization of regression analysis helped explain the inherent factors behind the observed spatial patterns identified during the first two levels of analysis. Modeling spatial relationships allows the regression analysis to be useful in model prediction.

Regression analysis was chosen as the final level of statistical analysis for two primary reasons. The first reason was the ability to model a geographic phenomenon (xenophobic violence), and to better understand it and possibly use that understanding to effect policy or make decisions about appropriate actions to take. The basic objective here was to measure the extent that changes in one or more variables jointly affect changes in another. The second reason was the ability regression analysis possesses in analyzing and exploring a hypothesis. Utilization of a regression equation in this case tested the strength of the explanatory variables to best predict the dependent variable modeled; the dependent variable being the locations of the xenophobic violence of 2008 and the explanatory variables being grievances and opportunities. The analysis revealed which explanatory variables were the strongest and weakest variables in explaining the 2008 xenophobic violence.

For an *OLS* model to perform successfully, an adjusted R-Squared result of at least 0.80 is expected (ArcGIS Resource Center). The overall adjusted R-Squared result of this *OLS* model was only 0.68. The *OLS* map indicated that there were clustering (high and low) of residuals across the study area. The variance inflation factor (VIF) measures redundancy among explanatory variables. Explanatory variables with VIF values larger than 7.5 indicate that two more of the variables are telling the same story and should be removed from the regression model (ArcGIS Resource Center). The VIF for three of the four variables used in the regression equation were much larger than 7.5 (Appendix C). Results of the *OLS* diagnostic (Appendix E) revealed a significant Jarque-Bera p-value statistic. This indicates that the *OLS* residuals were not normally distributed and a key variable is likely missing. In order to identify the cause of these statistical phenomena, a scatterplot matrix of the *OLS* residuals was created (Figure 38). The scatterplot matrix revealed that most of the variables shared a positive relationship with one another. However, the matrix also revealed that none of the variables held any type of correlation relationship (positive or negative) with the 2008 event locations (Events). Similarly, none of the variables held any type of correlation relationship (positive or negative) with the number of foreigners (Foreigners) explanatory variable. This indicates that individual explanatory variables alone are insufficient in explaining the 2008 event locations. There must be a combination of explanatory variables present.

Appendix D reveals the coefficient strengths of the explanatory variables used in the *OLS* model. Results of the *OLS* model indicate that a 0.000035 increase in the number of xenophobic attacks is expected for each additional person unemployed (OLSFINAL.UNEMPL) across the study area. The dependent variable represents one unit. Therefore, to determine the number of unemployed persons needed to represent an additional xenophobic event, the dependent variable can be divided by the coefficient. This calculation can be repeated for each of the other explanatory variables to determine the actual number of additional persons per each explanatory variable needed to positively or negatively influence the number of xenophobic events. For the distribution of unemployed persons (OLSFINAL.UNEMPL), the number of additional unemployed persons required to represent an additional xenophobic event are: $1/0.000035 = 28,571$. Similarly for the distribution of singleness (OLSFINAL.SINGLENESS), the number of additional single persons required to represent an additional xenophobic event are: $1/0.000021 = 47,619$. Conversely, an additional number of foreigners (OLSFINAL.FOREIGNERS) of $1/0.000169 = 5,917$, is required to decrease the number of xenophobic events by one across the study area whereas an additional number of youth representing youth bulges (OLSFINAL.YOUTHBULGE) of, $1/0.000089 = 11,235$, is required to decrease the number of xenophobic events by one across the study area.

VII. CONCLUSIONS & IMPLICATIONS

There will continue to be a need to constantly readdress high risk xenophobic violence monitoring across urban centers of the country due to the facts that the coalitions that were formed in response to the violence of 2008 have faltered and various organizations have since retreated back to working on their core business without reflecting on how to integrate the issues facing refugees and migrants into their programs and goals. Few, if any, non-refugee organizations have subsequently formally integrated xenophobia, migrants and refugees into their day-to-day work. (Parsley, 2010). Before summarizing the successes of this research, one must note specific data limitations within this study.

Data Limitations

There were limitations in the census datasets used to represent group grievances and opportunities. First of all, CS 2007 cannot act as a replacement for the Census. Attempts were made by STATSSA to adjust measurements to a best estimate, but these attempts resulted in some error. Most of the adjustments made by STATSSA could not produce usable estimates of counts in some municipalities (Community Survey Basic Results). The exception of better estimates was observed in densely populated municipalities like metro areas. Measurements in terms of proportion is much less susceptible to random error than counts (numbers), and as a consequence, CS 2007 gives useful information for estimating proportions, averages or ratios for smaller area domains (Community Survey Basic Results). Using CS 2007, reliance should be minimalized on using numbers for variables broken down at geographical hierarchy Level 3 (population, age, group, etc...). However, the aggregated total number per municipality provides more reliable estimates (Census 2007 Basic Results). In order to work around this data limitation, datasets used to produce the group grievances and opportunities maps were all normalized to produce percentages or rates, thus ensuring that proportions were used over counts at a scale of Level 3.

Reliable datasets on numbers representing internal migrants within South Africa are contentiously debatable. Therefore, one of the datasets constituting the “Stealing Women” grievance (number of foreigners living in the country in 2007), should be viewed as representing a very general distribution of the true numbers and clusters of foreigners residing in the country. Until more accurate and reliable

methodologies are developed to monitor the number of migrants dwelling within the country at any given time, this grievance will continue to prove difficult to fully represent.

Significance of Findings

Past research reveals that a positive relationship does exist between group grievances and opportunities with civil conflict. This research successfully demonstrates that census data is a viable source of data to represent group grievances and opportunities for conflict. Furthermore, this research reveals that it is possible to cartographically represent those grievances and opportunities, and that once mapped, the degree to which grievances and opportunities influence events of xenophobic violence can be analyzed. Once mapped and analyzed, comparison can then take place with known events.

The significance of this research rests in the ability to use grievances and opportunities as inputs in a predictive model to measure the coefficient strength of explanatory variables of a significant xenophobic event. This research proves that not only is it possible to map census data to represent group grievance and opportunity, but that it is a worthwhile foundation upon which conflict prediction models should be built. The overarching goal of this research was to geospatially represent the distribution of the causes of the 2008 xenophobic violence, and to identify the legitimacy of the grievances South African nationals have voiced in response to African non-nationals entering their country. This research was successful in acquiring datasets representative of group grievances and opportunities. Once the datasets were acquired, this study proved successful in answering where each grievance and opportunity was distributed across the study area. The study was successful in creating a predictive conflict model that identified two grievances with positive correlations with xenophobic events; unemployment and singleness.

This study contributes to the global research community in two ways. The first is to global conflict studies. Group grievances and opportunities are associated with conflict events. Applying geostatistical analyses to these factors allows researchers to understand where, how, and why group grievances and opportunities influence significant conflict events. The second is in part to the extensive research that has been carried out in analyzing the xenophobic violence of 2008 in South Africa, and in part to the continued research taking place within the country to continuously map and monitor the xenophobic

landscape across South Africa with the sole goal to predict where and when future xenophobic events might occur.

Future Research

From October 10 – 31 of 2011, the third major census in South Africa was carried out since the advent of democracy (cite). With the release of the census data to occur at the end of 2012, accurate, up-to-date census data will be available representing the various group grievances and opportunities highlighted in this study. It would be imperative to deploy the predictive model used in this study to identify the geospatial distribution of group grievances and opportunities in South Africa in order to gain an accurate picture of how the xenophobic landscape appears today.

This research exposed the need to redefine instances of xenophobic violence. Employing the predictive model used in this study with a deployment of a continuously monitoring crisis mapping system would allow for more thorough day-to-day monitoring of group grievances and opportunities. The conflict monitoring system could be delivered through an open/crowd source platform, such as Ushahidi, that would serve to continuously monitor high risk conflict zones across the country.

Researchers indicate that it's not a matter of "if" but "when" an event similar to the outburst of xenophobic violence of 2008 will reoccur. May a lack of preparedness not find itself on the list of grievances and opportunities that lead to human suffering.

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X. APPENDIX

| Variable | Summary of Variable Significance % Significant |
|---------------------|---|
| OLSFINAL.UNEMPL | 93.55 |
| OLSFINAL.MPR | 25.81 |
| OLSFINAL.B_WOMEN | 38.71 |
| OLSFINAL.SINGLENESS | 54.84 |
| OLSFINAL.FOREIGNERS | 29.03 |
| OLSFINAL.YOUTHBUGLE | 70.97 |

Appendix A. Summary of Variable Significance

| Variable | VIF | Violations | Covariates | Summary of Multicollinearity |
|---------------------|--------|------------|--|------------------------------|
| OLSFINAL.UNEMPL | 42.98 | 28 | OLSFINAL.SINGLENESS (93.75), OLSFINAL.MPR (93.75), OLSFINAL.YOUTHBUGLE (93.75), OLSFINAL.B_WOMEN (43.75), OLSFINAL.FOREIGNERS (31.25) | |
| OLSFINAL.MPR | 281.33 | 28 | OLSFINAL.SINGLENESS (93.75), OLSFINAL.UNEMPL (93.75), OLSFINAL.YOUTHBUGLE (93.75), OLSFINAL.B_WOMEN (81.25), OLSFINAL.FOREIGNERS (31.25) | |
| OLSFINAL.B_WOMEN | 18.32 | 15 | OLSFINAL.SINGLENESS (56.25), OLSFINAL.MPR (81.25), OLSFINAL.UNEMPL (43.75), OLSFINAL.YOUTHBUGLE (56.25), OLSFINAL.FOREIGNERS (25.00) | |
| OLSFINAL.SINGLENESS | 556.35 | 28 | OLSFINAL.MPR (93.75), OLSFINAL.UNEMPL (93.75), OLSFINAL.YOUTHBUGLE (93.75), OLSFINAL.B_WOMEN (56.25), OLSFINAL.FOREIGNERS (31.25) | |
| OLSFINAL.FOREIGNERS | 9.55 | 6 | OLSFINAL.SINGLENESS (31.25), OLSFINAL.MPR (31.25), OLSFINAL.UNEMPL (31.25), OLSFINAL.B_WOMEN (25.00), OLSFINAL.YOUTHBUGLE (25.00) | |
| OLSFINAL.YOUTHBUGLE | 395.15 | 28 | OLSFINAL.SINGLENESS (93.75), OLSFINAL.MPR (93.75), OLSFINAL.UNEMPL (93.75), OLSFINAL.B_WOMEN (56.25), OLSFINAL.FOREIGNERS (25.00) | |

Appendix B. Redundancy of Variables.

| Highest Adjusted R-Squared Results | | | | | | | | | | |
|------------------------------------|--------|------|------|--------|------|---------------------|------------------------|----------------------|-------------------------|--|
| R2 | AICC | JB | BP | VIF | MI | Model | | | | |
| 0.68 | 270.88 | 0.00 | 0.00 | 294.52 | 0.08 | +OLSFINAL.UNEMPL*** | +OLSFINAL.SINGLENESS** | -OLSFINAL.FOREIGNERS | -OLSFINAL.YOUTHBUGLE*** | |

Appendix C. Highest Adjusted R-Squared Results

| Variable | Coefficient | StdError | t-Statistic | Probability | Robust_SE | Robust_t | Robust_Pr | VIF [1] |
|---------------------|-------------|----------|-------------|-------------|-----------|-----------|-----------|------------|
| Intercept | -0.872966 | 0.367394 | -2.376101 | 0.020704* | 0.309403 | -2.821450 | 0.006473* | ----- |
| OLSFINAL.UNEMPL | 0.000035 | 0.000009 | 3.909578 | 0.000240* | 0.000011 | 3.287300 | 0.001696* | 36.277769 |
| OLSFINAL.SINGLENESS | 0.000021 | 0.000006 | 3.734610 | 0.000423* | 0.000008 | 2.588339 | 0.012079* | 294.524005 |
| OLSFINAL.FOREIGNERS | -0.000169 | 0.000093 | -1.813356 | 0.074782 | 0.000148 | -1.143490 | 0.257376 | 5.697518 |
| OLSFINAL.YOUTHBUGLE | -0.000089 | 0.000017 | -5.209006 | 0.000003* | 0.000029 | -3.110498 | 0.002859* | 207.816396 |

Appendix D. Summary of OLS Results

| | | | |
|-----------------------------|-----------|---|------------|
| Number of Observations: | 65 | Number of Variables: | 5 |
| Degrees of Freedom: | 60 | Akaike's Information Criterion (AIC) [2]: | 267.433328 |
| Multiple R-Squared [2]: | 0.704417 | Adjusted R-Squared [2]: | 0.684712 |
| Joint F-Statistic [3]: | 35.747184 | Prob(>F), (4,60) degrees of freedom: | 0.000000* |
| Joint Wald Statistic [4]: | 70.131821 | Prob(>chi-squared), (4) degrees of freedom: | 0.000000* |
| Koenker (BP) Statistic [5]: | 24.469983 | Prob(>chi-squared), (4) degrees of freedom: | 0.000064* |
| Jarque-Bera Statistic [6]: | 18.572188 | Prob(>chi-squared), (2) degrees of freedom: | 0.000093* |

Appendix E. Summary of OLS Diagnostics