

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Race and the post-Fordist spatial order in Cape Town



Nancy Graham
(M.Sc Dissertation)

Supervisors:
Prof Owen Crankshaw
Shirley Butcher

Race and the post-Fordist spatial order in Cape Town

Dissertation for M.Sc in Environmental and Geographical Science

Nancy Graham (GRHNAN001)

Supervisors:

Prof Owen Crankshaw (main)

Shirley Butcher

Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and to pretend that it is one's own.
2. I have used the required convention for citation and referencing. Each significant contribution to, and quotation in this research project from the work of other people has been attributed, and has been cited and referenced.
3. This research project is my own work.
4. I have not allowed and will not allow anyone to copy my work with the intention of passing it off as his or her work.

Signature:

Date:

ABSTRACT

The post-Fordist shift from manufacturing to service sector economies, which began in the 1970s, has occurred worldwide and has changed occupation and income structures. This global force has a spatial manifestation at the urban level. In order to conceptualise the post-Fordist spatial order in Cape Town, this thesis engages examples of post-Fordist spatial forms in cities worldwide, particularly Johannesburg. A Geographic Information System is used to look at the location of the middle class in Cape Town and the spatial patterns of post-apartheid desegregation by mapping the Census 2001 class and race data. This is to determine the extent to which the decentralisation of office parks and shopping centres is reinforcing the spatial divide, established under apartheid, between the white and black races.

This thesis shows that, in middle-class, former whites-only areas, decentralised employment nodes have developed. These middle-class residents are still largely white. However, other former white Group Areas nearby, which have experienced significant desegregation, are located along the railway lines in both the northern and south-western suburbs. The profile of these new residents are coloured, rather than black African, and they are employed in clerical, sales, service worker and middle-class occupations. Therefore these coloured residents are able to access decentralised service sector employment, thereby reducing the apartheid spatial divide between the white and black middle class.

While white-coloured racial spatial segregation has decreased, the south-east sector of the city has become an 'excluded ghetto' of the coloured and black African underclass, who make up a large percentage of residents in Cape Town. Therefore the extent of class-based desegregation near market-driven, decentralised, service-sector employment has not yet significantly eroded the apartheid racial spatial divisions upon which the post-Fordist class divisions are superimposed.

ACKNOWLEDGEMENTS

Thank you to Tracy Daniels of Statistics South Africa for assisting me in extracting data from the Census 2001 Unit Record Database.

Thank you to Ian Black¹ of Properties Service at the City of Cape Town for providing me with noting sheets containing Group Area classifications for much of Cape Town.

Thank you to Jonathon Penfold² of the Western Cape Surveyor General's Office for assisting me in obtaining Group Area boundary data.

Thank you to Shirley Butcher for her technical and methodological input and assistance, which was invaluable, as always.

Thank you to Owen Crankshaw for being a wonderfully thorough and encouraging supervisor. Thank you for all your hours of input and guidance.

¹ Phone: 021 400 2161

² Phone: 021 465 4711

CONTENTS

| | |
|-----------------------------|------|
| Abstract | i |
| Acknowledgements | ii |
| Contents | iii |
| List of Abbreviations | v |
| List of Figures | vi |
| List of Tables | viii |

| | |
|-------------------------------------|----------|
| CHAPTER 1: INTRODUCTION..... | 1 |
|-------------------------------------|----------|

CHAPTER 2: LITERATURE REVIEW

| | |
|---|-----------|
| 2.1 Post-Fordist Urban Inequality Theories..... | 3 |
| 2.2 Post-Fordist Spatial Pattern in Urban Areas | 6 |
| 2.3 South Africa..... | 11 |
| 2.3.1 South African Economy..... | 12 |
| 2.3.2 Post-Fordist Spatial Patterns in South African cities..... | 13 |
| 2.3.3 Post-apartheid context..... | 18 |
| 2.3.4 Residential desegregation in South African cities..... | 19 |
| 2.4. Cape Town..... | 21 |
| 2.4.1 Cape Town's Economy | 21 |
| 2.4.2 Post-Fordist Spatial Patterns in Cape Town | 22 |
| Retail spatial patterns | 23 |
| Office spatial patterns | 24 |
| Industrial spatial patterns | 24 |
| Residential spatial patterns..... | 25 |
| The Cape Flats or south-east sector | 26 |
| Transport connections..... | 26 |
| 2.4.3 Residential Desegregation in Cape Town | 27 |
| 2.5 Concluding remarks | 29 |

CHAPTER 3: METHODOLOGY

| | |
|--|-----------|
| 3.1 Census 2001 data..... | 31 |
| 3.1.1 Unit of analysis: residential sub-place..... | 31 |
| 3.2 Group Areas classification | 35 |
| 3.3 The post-Fordist spatial order | 39 |
| 3.3.1 Location of commercial and industrial land..... | 40 |
| 3.4 Spatial patterns of occupational class | 41 |
| 3.4.1 Occupational class spatial distribution | 42 |
| <i>Racial composition of the middle class</i> | <i>43</i> |
| 3.4.2 Higher education spatial distribution | 43 |
| 3.4.3 Multivariate analysis of occupational class spatial distribution..... | 44 |
| 3.4.4 Univariate vs. multivariate occupation analysis..... | 49 |
| 3.5 Post-apartheid racial geography..... | 50 |
| 3.5.1 Group Area Classification..... | 50 |
| 3.5.2 Desegregation | 51 |

| | |
|--|-----|
| <i>Live-in domestic workers and gardeners</i> | 51 |
| Desegregation of former white Group Areas..... | 54 |
| Desegregation of former coloured Group Areas..... | 54 |
| Multivariate racial composition | 55 |
| Triangular diagrams | 55 |
| <i>Former white Group Areas</i> | 56 |
| <i>Former coloured Group Areas</i> | 57 |
| <i>Post-1991 developed sub-places</i> | 57 |
| <i>All residential sub-places</i> | 57 |
| <i>Univariate vs. multivariate racial analysis</i> | 57 |
| 3.6 The relationship between occupational spatial patterns and post-apartheid racial patterns | 58 |
| 3.7 Major transport routes | 59 |
| 3.8 Concluding remarks | 62 |
| | |
| CHAPTER 4: RESULTS AND DISCUSSION | |
| 4.1 The post-Fordist spatial order in Cape Town | 63 |
| 4.1.1 Location of commercial and industrial land | 72 |
| 4.1.2 Decentralisation and various employment nodes | 76 |
| 4.2 The Spatial Patterns of Occupational Classes | 89 |
| 4.2.1 Group Area classifications | 89 |
| 4.2.2 Spatial distribution of Occupational Classes | 91 |
| <i>Racial composition of the middle class</i> | 94 |
| 4.2.3 Higher education spatial distribution | 98 |
| 4.2.4 Multivariate analysis of occupational class spatial distribution | 102 |
| <i>Occupational spatial patterns</i> | 108 |
| <i>Univariate vs. multivariate occupational analysis</i> | 109 |
| 4.3 Post-apartheid racial spatial patterns | 112 |
| 4.3.1 Group Area classification of residential sub-places | 112 |
| 4.3.2 Desegregation | 112 |
| <i>Desegregation of former white Group Areas: Coloured race</i> | 112 |
| <i>Desegregation of former white Group Areas: black African race</i> | 120 |
| <i>Desegregation of former coloured Group Area: black African race</i> | 126 |
| 4.3.3 Multivariate analysis of racial desegregation | 129 |
| <i>Former white Group Areas</i> | 131 |
| <i>Former coloured Group Areas</i> | 134 |
| <i>Post-1991 developed sub-places</i> | 136 |
| <i>Racial mixing in all residential sub-places</i> | 140 |
| Spatial patterns of desegregation | 141 |
| Racial composition group description..... | 144 |
| 4.4 The relationship between the occupational spatial patterns and post-apartheid racial patterns | 149 |
| | |
| CHAPTER 5: CONCLUSION | 151 |
| REFERENCES | 157 |

LIST OF ABBREVIATIONS

| | |
|---------|--|
| CBD | Central Business District |
| EA | Enumerator Area |
| FIRE | Finance, Insurance and Real Estate and Business Services |
| GIS | Geographical Information Systems |
| GAA | Group Areas Act |
| GEAR | Growth, Employment and Redistribution |
| HAC | Hierarchical Ascending Classification (Cluster analysis) |
| FSA | Free Settlement Area |
| LED | Local Economic Development |
| MSDF | Metropolitan Spatial Development Framework |
| RDP | Reconstruction and Development Programme |
| StatsSA | Statistics South Africa |
| US | United States (of America) |

University of Cape Town

LIST OF FIGURES

| | |
|--|-----|
| <i>Figure 3.1: Cape Town informal settlement</i> | 32 |
| <i>Figure 3.2: Census 2001 residential sub-places used in this analysis</i> | 34 |
| <i>Figure 3.3: Sub-places covered in Group Area noting sheets provided by City of Cape Town</i> | 36 |
| <i>Figure 3.4: Group profiles from initial exploratory HAC cluster analysis of occupation categories</i> | 45 |
| <i>Figure 3.5: Geometric partitioning of triangle</i> | 56 |
| <i>Figure 3.6: The location of major railway lines</i> | 60 |
| <i>Figure 3.7: The location of major roads</i> | 60 |
| <i>Figure 3.7: The location of major roads</i> | 61 |
| <i>Figure 4.1: Unemployment rate by sub-place</i> | 69 |
| <i>Figure 4.2: Percentage population with monthly income less than R1600</i> | 71 |
| <i>Figure 4.3: Commercial land use and retail centres in Cape Town, 2002</i> | 73 |
| <i>Figure 4.4: Industrial land use in Cape Town, 2002</i> | 75 |
| <i>Figure 4.5: Oblique aerial view of Tygervalley/Bellville, 1995</i> | 81 |
| <i>Figure 4.6: Tyger Waterfront and Tygervalley Centre in background, 2006</i> | 82 |
| <i>Figure 4.7: Tygervalley Centre and Willowbridge Lifestyle Centre in foreground, 2006</i> ... | 82 |
| <i>Figure 4.8: Group Area classification of residential sub-places</i> | 90 |
| <i>Figure 4.9: Spatial distribution of the middle class</i> | 92 |
| <i>Figure 4.10: Percentage employed residents with a tertiary education</i> | 99 |
| <i>Figure 4.11: Dendogram of HAC analysis</i> | 102 |
| <i>Figure 4.12: Average profiles of four groups</i> | 103 |
| <i>Figure 4.13: Occupational spatial patterns</i> | 107 |
| <i>Figure 4.14: Percentage coloured residents in former white Group Areas</i> | 114 |
| <i>Figure 4.15: Percentage black African population in former white Group Areas</i> | 121 |

| | |
|--|------------|
| <i>Figure 4.16: Percentage black African population in former coloured Group Areas.....</i> | <i>127</i> |
| <i>Figure 4.17: Racial mixing of former white Group Areas</i> | <i>131</i> |
| <i>Figure 4.18: Triangular diagram of races for former white Group Areas</i> | <i>132</i> |
| <i>Figure 4.19: Racial mixing of former coloured Group Areas.....</i> | <i>134</i> |
| <i>Figure 4.20: Triangular diagram of races for former coloured Group Areas.....</i> | <i>135</i> |
| <i>Figure 4.21: Racial mixing of suburbs developed after 1991</i> | <i>136</i> |
| <i>Figure 4.22: Triangular diagram of races for suburbs developed after 1991</i> | <i>137</i> |
| <i>Figure 4.23: Racial mixing of all residential sub-places</i> | <i>140</i> |
| <i>Figure 4.24: Triangular diagram of racial composition for all residential sub-places.....</i> | <i>141</i> |
| <i>Figure 4.25: Box and whisker plots of the number of each race in each class.....</i> | <i>146</i> |

University of Cape Town

LIST OF TABLES

| | |
|---|------------|
| <i>Table 3.1: HAC cluster comparisons.....</i> | <i>47</i> |
| <i>Table 3.2: ArcView group differences between two race datasets for all sub-places.....</i> | <i>52</i> |
| <i>Table 3.3: ArcView group differences between two race datasets for former white Group Areas.....</i> | <i>53</i> |
| <i>Table 4.1: Middle-class occupations by race, 2001.....</i> | <i>95</i> |
| <i>Table 4.2: Middle-class occupations by race: 1980, 1991 and 2001.....</i> | <i>97</i> |
| <i>Table 4.3: Percentage tertiary education vs. middle-class occupations.....</i> | <i>100</i> |
| <i>Table 4.4: Percentage distribution by occupation class (row percentages).....</i> | <i>104</i> |
| <i>Table 4.5: Percentage occupation class composition per group (column percentages).....</i> | <i>105</i> |
| <i>Table 4.6: Distribution of sub-places and people in the occupational class groups.....</i> | <i>106</i> |
| <i>Table 4.7: Comparison of ArcView and Philcarto occupational class analyses.....</i> | <i>110</i> |
| <i>Table 4.8: Distribution of former white Group Areas: % coloured residents groups....</i> | <i>115</i> |
| <i>Table 4.9: Percentage middle-class group vs. Percentage coloured residents group ...</i> | <i>118</i> |
| <i>Table 4.10: HAC occupations group vs. Percentage coloured residents group.....</i> | <i>119</i> |
| <i>Table 4.11: Distribution of former white Group Areas: % black African residents groups.....</i> | <i>122</i> |
| <i>Table 4.12: Percentage middle-class group vs. Percentage black African residents group.....</i> | <i>124</i> |
| <i>Table 4.13: HAC occupations group vs. Percentage black African residents group.....</i> | <i>125</i> |
| <i>Table 4.14: Distribution of former coloured Group Areas: % black African residents groups.....</i> | <i>128</i> |
| <i>Table 4.15: Sub-place and population distribution across racial composition groups .</i> | <i>145</i> |
| <i>Table 4.16: Group Area classifications vs. racial composition group.....</i> | <i>148</i> |
| <i>Table 4.17: Cross tabulation of multivariate occupational class and race results.....</i> | <i>150</i> |

CHAPTER 1: INTRODUCTION

1.1 Introduction

The post-Fordist production era began in the 1970s and was marked by a shift from manufacturing to service sector economies, and the decentralisation of work globally, regionally and within cities. In urban areas, manufacturing employment has declined and service sector businesses have increasingly left the central city and followed middle class residential suburbanisation, which had begun after the Second World War.

In cities worldwide, the decentralisation of work to middle class areas often also has a racial or ethnic character. In United States cities, for instance, this decentralisation of both the middle class and jobs has left an African American underclass in the excluded ghetto of the inner city. In the post-Fordist era, this class is disadvantaged by both a skills and spatial mismatch. The post-Fordist spatial order differs in European cities because these countries are more welfare-oriented and they do not have the same history of racial discrimination. The market-driven segregation of classes within cities is nothing new, however, the walling of areas and totalising of everyday activities within them is a post-Fordist spatial feature of class segregation (Marcuse & van Kempen, 2000). This is clearly seen in Sao Paulo, Brazil and Johannesburg, both of which contain many fortified enclaves separating the middle and upper classes from the underclass (Murray, 2004). Crankshaw (2005) describes how Johannesburg has clearly been divided into the middle class, walled and totalised northern suburbs of Sandton, where much service sector and manufacturing employment is located; and the excluded ghetto of Soweto in the south. The location of post-Fordist employment opportunities is important in South African cities due to the legacy of apartheid racial geography. The post-Fordist spatial divisions in Johannesburg occur along apartheid racial lines and, although there has been some movement of the growing black³ professional class into the northern suburbs, which indicates a shift from racial to class based polarisation; the majority black, semi- and unskilled population still reside in the excluded ghetto.

³ The races discussed in this thesis are taken from the Census 2001 classifications: white, coloured, black African and Indian/Asian. The term 'black' refers to all races, excluding white. The 'coloured' group is mainly a mixed-race descended from sexual relations between the indigenous Khoi and San, black African and white populations. Coloured also includes the non-mixed indigenous Khoi and San and Cape Malays (Wilkinson, 2000; Martin, 1998).

In light of the spatial patterns of other cities worldwide and within South Africa, this thesis looks at the extent and character of the post-Fordist spatial order in Cape Town. In particular, how the location of employment in middle class, majority white areas and the concentration of the black, poor in the south-east⁴ has affected class and racial spatial divisions in post-apartheid Cape Town. Turok (2001) and Turok & Watson (2001) have described the spatial polarisation of development in Cape Town in recent years and this thesis attempts to quantify and map various factors in order to determine what effect the post-Fordist spatial order has had on racial inequality. I have used Census 2001 data to look at both the geography of occupation, as a measure of class; and that of race, in terms of the desegregation of middle class areas.

1.2 Assumption

Unless otherwise specified, it is assumed that during apartheid residents of each suburb were 100% of the particular race to which the land was allocated under the Group Areas Act of 1950.

⁴ Turok (2001) uses the term 'south-east sector' to describe the region typically called the Cape Flats.

CHAPTER 2: LITERATURE REVIEW

2.1 Post-Fordist Urban Inequality Theories

The post-Fordist era marks a shift in production, which began in the 1970s and has led to a change in the structure of both occupations and incomes worldwide. This economic restructuring has a common spatial manifestation known as the post-Fordist spatial order, which is characterised by growing social polarisation in cities worldwide. This review aims to tackle various urban theorists' theses on the social polarisation seen in cities and to look at how these global processes are manifested in South Africa, and in particular, Cape Town.

Due to the post-Fordist shift, global, national and local economies have undergone extensive restructuring since the 1970s. The move from Fordist to Post-Fordist production has been characterized by the movement from fixed, mass production to flexible, small batch production. Labour has become more flexible in terms of subcontracting and casual labour has increased; economies have been deregulated, which has increased labour, capital and goods flow; trade barriers have been removed, and decentralisation has occurred within cities and countries, and to cheaper labour locations worldwide (Harrison, 1995; Badcock, 1997). Advanced countries have moved from industrial to informational societies and there is an increasing concentration of control in world cities, such as London, New York and Tokyo (van Kempen & Marcuse, 1997). Such cities have declining manufacturing, but growing service sector economies. New industries that characterize this period and are concentrated in these cities are: high technology manufacturing, finance, tourism, and producer services such as communications, banking, security, business services, holding companies, legal services and advertising (Harrison, 1995; O'Loughlin & Friedrichs, 1996).

Friedmann & Wolff (1982) introduced the world city concept and described how such cities have undergone economic, social and physical restructuring. Friedmann & Wolff described six economic clusters, the first three are prominent in advanced countries and the latter three characterize developing countries' economies. The first cluster is high level producer services; the second cluster, services for the primary cluster, such as real estate, hotels, restaurants, domestic and security services, and the third cluster is international tourism.

The fourth is manufacturing, which has been shrinking since the 1970s, the fifth is government service, which is a large employer in developing countries and has low productivity, and the sixth is the informal economy, in which a large proportion of developing countries' citizens participate. Owing to this restructuring, which resulted in structural unemployment for many who had been employed in manufacturing, cities have experienced growing social polarisation due to increasing occupational class polarisation. Therefore the city is divided into the transnational elite, which is dominant, and the underclass, which is usually racially or ethnically different to the former class. This social polarisation is manifested physically in a dual city of the citadel of the rich and the ghetto of the poor (Friedmann & Wolff, 1982).

Sassen's global city thesis draws on Friedmann & Wolff and states that the occupation and income structure in the service sector is more polarised than in manufacturing and, as cities move towards service sector-dominated economies, social polarisation increases (Sassen, 1994; Gordon & Sassen, 1992). The decline in skilled and semi-skilled manual manufacturing jobs has meant middle-income workers are increasingly unemployed and therefore this group is shrinking as they are forced to find employment in lower-paying unskilled jobs. Service sector growth is concentrated in high-paying producer service jobs for professionals and low-paying personal service jobs for the low-skilled labour force. This income polarisation results in gentrification of some areas while the low-paid service workers are concentrated in the less desirable parts of the city. This spatial segregation is usually along racial and ethnic lines (Hamnett, 1994).

A criticism of Sassen's thesis is that it is only based on the experiences of New York and Los Angeles which both have high immigrant populations which provide cheap labour and, therefore, could explain the growth in the low-paid service sector. Hamnett argues that in most Western capitalist countries semi-skilled, unskilled employment has instead been shrinking over the last 20 to 30 years, and professionalisation, rather than polarisation, is occurring in these cities (Hamnett, 1994). Hamnett uses London and various cities in the Netherlands to illustrate this process. In London and South-East England there is a growing professionalisation, but not polarisation, even though the semi-skilled, manual workforce

has contracted. Low-paid service work has not grown at the same pace as high-paid service work and, therefore, while there has been relative polarisation it is not absolute. However, although occupational polarisation has not occurred in London, income distribution has become more unequal. The same professionalisation process has also been dominant in the Netherlands (Hamnett, 1991).

The final urban inequality thesis is offered by Wilson who identifies spatial mismatch as being the reason for the formation of the unemployed underclass trapped in the United States (US) ghetto (Burgers & Musterd, 2002). After the Civil Rights movement in the 1960s, race-specific 'affirmative action' programmes helped higher income, educated blacks but they did little for low-income blacks. Therefore there was growing intra-racial inequality which was worsened by the decline of manufacturing in northern cities in the 1970s (Wilson, 1987). Wilson states that there is a skills mismatch in the inner city, where the uneducated poor live. The labour market is continuously upgrading in terms of educational requirements, therefore, these residents cannot access these jobs, and in addition the demand for unskilled industrial labourers in the US has decreased. These unemployed are victims of spatial mismatch as the suburbs are the location of entry level, low-educational requirement jobs and the remnant industrial work. Therefore the unemployed in the ghetto can neither access inner city, professional jobs nor suburban low-skilled jobs (Burgers & Musterd, 2002; Wilson, 1987). The fact that the victims of this mismatch are concentrated in inner city neighbourhoods where the majority of residents are unemployed means they are socially isolated and therefore unable to access job networks which could lift them out of the ghetto (Wilson, 1987).

Waldinger's criticism of both Sassen and Wilson's theories is that they both focus on the demand side of labour rather than the supply side. They neglect the networks and cultures of immigrant groups which affect their position in the labour market. For instance, Wilson does not account for ethnic differentiation and the fact that certain immigrant groups are employed in particular market niches, and that newly arrived migrants are employed at the bottom of the vacancy chain, which allows older migrants upward mobility in the occupational structure. Also, in New York African-Americans were never highly

represented in manufacturing and Waldinger therefore disputes Sassen and Wilson's arguments about the effect of deindustrialisation on the ghettoisation of this population group. He also argues that they both neglect the role of national institutions because different welfare systems result in different labour market structures, which will mean different social consequences to economic restructuring in each country (Waldinger cited in Burgers & Musterd, 2002: 405).

2.2 Post-Fordist Spatial Pattern in Urban Areas

These theories of post-Fordist urban inequality expounded here all manifest spatially because the inequality in occupation and income structures impacts the housing market, thereby resulting in spatial segregation. Although changes in the labour and housing market are not causally linked, they are closely related and work together to create a spatially polarized city (Hamnett, 1991). Marcuse (1991:124) states that "the nature of the labour process...and the negotiations that take place in the labour market shapes the provision of housing" and this creates a quartered city of the upper class, professional or managerial class, working class and the very poor (under) class.

Marcuse has identified the spatial forms of the ghetto, enclave and citadel, which had existed before post-Fordism, but are new in terms of their prevalence and prominence. Ghettoisation and suburbanisation are not new and post-Fordist patterns build upon these. The two post-Fordist characteristics of these forms are the physical or symbolic walling of them and the totalizing of these areas so that they internalise all the necessities of life such as residence, employment, recreation and shopping (Marcuse, 1997a; Marcuse & van Kempen, 2000).

The ghetto, which is located in the inner city, has existed in different forms in history. The "ghetto is a spatially concentrated area used to separate and to limit a particular involuntary defined population group (usually by race) held to be, and treated as, inferior by the dominant society" (Marcuse, 1997a: 230). Pre-modern ghettos were socially separate but residents were economically integrated. However, the current, outcast ghetto has a different character. Residents are both spatially, socially and economically excluded. This change

occurred with the out-migration of middle class African Americans in the 1970s due to the 1968 Fair Housing Act allowing their suburbanisation. Suburbanisation is not class neutral and as the wealthier classes moved out of the inner city, so did the jobs for which the lower-skilled qualify, which leaves the unemployed underclass behind. The dominant class see the ghetto underclass as unproductive and as a drain on public resources, and therefore, their economy is separate from the mainstream economy (Marcuse, 1997a; 2002). The flight of non-poor African Americans from the ghetto also removes a social buffer to the full impact of joblessness as, without the support of the non-poor in the ghetto, institutions such as schools cannot remain viable (Wilson, 1987). The post-Fordist, outcast ghetto is an 'ethclass' ghetto, a spatially concentrated area with residents who are both a subordinate ethnicity and a subordinate class (Marcuse, 2002). Spatial exclusion always overlaps with racial or ethnic status and therefore pre-existing racial spatial patterns are reinforced (van Kempen & Marcuse, 1997). This is clearly seen in all South African cities and in Cape Town this ghetto is in the south-east sector.

An enclave is seen in a more positive light. There are ethnic or immigrant enclaves, which are a concentration of a particular population group, they are seen as voluntary, the site of mutual support, and residents are more integrated with the mainstream economy. Enclaves and ghettos are spatially separate but the form of separation depends on economic and social characteristics. Exclusionary or fortified enclaves are gated communities of the rich which tend to be decentralised. On the other hand, the citadel of the transnational elites are spatially separated from the ghetto and enclave and these, high-tech, high-rise fortified residences are in the inner city (Marcuse & van Kempen, 2000; Marcuse, 1997a).

Another spatial feature of post-Fordism is the decentralisation or regionalisation of residence and work. The major part of these new regions are edge cities, or totalised suburbs, the term preferred by Marcuse and van Kempen (2002), since this term illustrates the suburban origin of these places. These suburbs were initially solely residential with some retail, but today they contain residential enclaves, business activities, social and cultural facilities. The population of totalising suburbs do not include the very rich and the

poor, unemployed underclass but rather the middle to upper classes and in the US they are largely white (Marcuse, 1997b; Marcuse & van Kempen, 2000).

Beside the physical descriptions given for these various post-Fordist spatial forms, what distinguishes between the totalising suburbs, citadel and excluded ghetto is their economic, political and social relation to power and wealth (Marcuse, 1997b).

Other spatial aspects of the post-Fordist city are 'soft locations', where changes in the built environment have lagged behind social and economic changes. These locations are derelict areas where manufacturing once was. Some are reclaimed for waterfronts, gentrification, building highways or redeveloping industries but, on the whole, abandoned manufacturing areas abound. Ports were victims of the restructuring of shipping, deindustrialisation, as well as the decentralisation of industry and therefore, since the 1980s, they have been revitalised as waterfronts with housing, shops, offices and marinas. Waterfronts benefit the new gentry, who are in service sector employment locations, and these make the CBDs more attractive, as can be seen by the fact that Cape Town's CBD has not suffered as much as other South African CBDs. Another post-Fordist spatial feature is the growth of edge cities, decentralised concentrations of shops, offices, and apartments which compete with the central business district (CBD). These new developments make the post-Fordist city multi-modal rather than monocentric and they reinforce racial and class segregation (Beauregard & Haila, 1997; Marcuse & van Kempen, 2000).

The post-Fordist city model described above is generally based on the United States experience; however, each city worldwide has a specific spatial manifestation of the post-Fordist economic restructuring. In the United States itself, underclass communities were only formed where increased poverty, due to economic restructuring, coincided with an already high degree of segregation i.e. the older cities of the northeast and Midwest (Massey & Denton, 1993). Factors which affect the spatial form include: the pre-existing built environment; the physical setting, the legacy of urban planning, management and housing practices; stage of development of the country; level of integration with the global economy, level of inequality, type of state and the balance between political and economic forces.

“The spatial form of the city has not, and will never, correspond perfectly to the processes that constitute the city” because capital is fixed in structures and therefore inhibits rapid, large scale transformation, and the actors who control the built environment are autonomous from the market (Beauregard & Haila, 1997: 334; Marcuse & van Kempen, 2000). The growth in inequality in cities also depends on the country’s sectoral composition in the 1970s as well as the degree of welfare cutbacks. The highest inequality increases have been where governments have been ruthless in reducing income support and removing institutions that protect workers, while not developing labour market programmes for the structurally unemployed. Despite, the declining role of the state in this global age, it still has a role to play in mediating the impact of global economic forces on the distribution of income and housing in cities (Badcock, 1997).

Burgers & Musterd (2002) have identified three factors which mediate between global forces and the local. Firstly, subcultural differences between ethnic groups in cities. One group may be affected by polarisation while another may be a victim of spatial mismatch. Secondly, national institutional differences results in different local consequences as mentioned by Badcock (1997). Finally, the social and economic history of each city results in a different experience of restructuring. Cities with highly differentiated economies or pre-industrial cities have less social upheaval than cities which emerged as a result of the industrial revolution and now have large derelict areas (Burgers & Musterd, 2002). There are two models of European cities, those with the poor concentrated in the inner city and the wealthy in the suburbs, and ones with the opposite arrangement. The reasons for the spatial differences between cities is related to the time at which the city became industrialised and underwent the associated rapid urbanisation; the different welfare systems; the regional economic context in which the city lies, and the size of the city (Kesteloot, 2003).

Hamnett (1991) illustrates London’s polarisation with, on the one hand, the gentrification of the inner city, which is where the privately owned residences and employment of professionals are located, and on the other hand, lower-paid work has decentralised and these workers rent council housing in the inner city. London is not like the United States city, with its inner city ghetto and prosperous suburbs. Changes in the labour market

structure interact with the changing tenure structure to produce a spatially segregated London with abandoned, derelict and gentrified areas occurring in separate parts of the city.

O'Loughlin & Friedrichs (1996) state that US and European cities' spatial polarisation cannot be compared because ethnic minorities in Europe fare much better than minorities in the US as the former do not have the history of discrimination that African Americans have; and European planning and welfare provisions have also prevented the spread of derelict areas. However, according to Goldsmith (1997), European cities are becoming more affected by the US city spatial model through the global economy because US politicians and business leaders, who have great influence, encourage free market operations. Therefore in Europe, the US-dominated multilateral institutions are encouraging welfare cutbacks and increasing the social inequalities between immigrants and natives. Therefore what was a class struggle in European cities is increasingly becoming racial and ethnic in nature.

The literature above on post-Fordist cities is generally restricted to developed countries, despite the fact that, according to O'Loughlin & Friedrichs (1996), except in the US, social and spatial polarisation is greater in peripheral cities of the world than those in the core. According to Murray (2004) there is a gap in the literature between the grand theories of the post-Fordist spatial order and the empirical studies of developing world cities. These cities may not be global but it is necessary to study them to see how the global economic forces trickle down to marginalised areas. Although the post-Fordist spatial dynamics may originate in global cities the disturbing features thereof are found in regionally significant cities.

It is interesting to compare the literature on Latin American cities with Johannesburg and the spatial patterns of Cape Town which are discussed in this thesis. The patterns of inequality in Johannesburg are likened to those in Sao Paulo, Brazil, which Caldeira terms a 'city of walls'. Between 1940 and 1980 Sao Paulo's layout was one of a centre-periphery model with the middle and upper-classes in the central city and the poor on the periphery who had to auto-construct their houses and rely on public transport. Since the 1980s, post-

Fordist economic changes, together with an increase in violent crime and subsequent fear, have led to decentralisation and walling of areas. Both businesses and upper and middle-class residents have moved to the southwest periphery where land for high-rise, closed condominiums containing all types of amenities is available amidst the informal settlements of the poor. The squatter camps adjacent to the wealthy apartments provide domestic servants; however, the enclosed service-sector office buildings do not provide employment for the surrounding poor who had been blue-collar workers in industry on the periphery. Therefore social classes have physically moved closer but they are separated by walls and security. Sao Paulo in the 1990s has seen homicide and abduction increase significantly and in response to this car armouring and private helicopters have abounded (Caldeira, 1996; 2000; Murray, 2004).

This has also occurred in Santiago, Chile where enclave residents live adjacent to poorer neighbourhoods. However, most middle and upper class areas are in the north east, the result of both market forces and the forced removal of the poor during the military regime, which sounds similar to the experience of post-apartheid cities (Salcedo & Torres, 2004).

On the other hand, in the western and north-western municipalities outside Sao Paulo, decentralisation to purely middle and upper-class areas has occurred. This is the site of Sao Paulo's edge city which began in the late 1970s. The fortified condominiums, offices and shopping centres here are horizontal compared to the vertical blocks in the south west of the city (Caldeira, 2000). This spatial form is more similar to the South African case than that of fortified enclaves amongst informal settlements.

2.3 South Africa

Developed and developing world cities have been discussed in terms of their spatial manifestation of post-Fordist processes. South Africa, like the United States, has a history of racial discrimination, and therefore this thesis looks at the relationship between post-Fordism's impact and post-apartheid racial spatial patterns. Therefore it is necessary to first look at the how the global economic changes in the 1970s have impacted the South African economy, and thereafter, how this has manifested spatially.

2.3.1 South African Economy

The South African government began introducing neo-liberal economic measures from the end of the 1970s. These included removing trade protection, which led to a recession in the 1980s, and relaxing controls on capital flow to encourage export-led growth and foreign investment. However, these measures had the opposite effect, as due to the recession and political pressure, foreign investors took their money out of the country (Beall, Crankshaw & Parnell, 2002). Since 1970 manufacturing has had a substantial, long-term decline as production became high-tech and capital-intensive, rather than labour-intensive and foreign investment moved to Asia and Latin America where labour is cheaper (South African Cities Network, 2004; Wilkinson, 2000). Foreign investment in South Africa has also been discouraged by the underdevelopment of skills in the labour force and the relative insignificance of the domestic market. Gauteng has suffered the most from deindustrialisation as it is the industrial centre of South Africa. Since 1970, Johannesburg, Port Elizabeth and Ekurhuleni have experienced the greatest decline in industrial employment, while Pretoria, Durban and Cape Town saw growth between 1970 and 1996. However, both Durban and Cape Town had industrial job losses between 1996 and 2001, in contrast to the initial three cities' industrial growth (South African Cities Network, 2004). However, South African's deindustrialisation has been different to the rest of Africa in that it has not been a straight process: industrial output has instead expanded slowly since the 1970s while employment has declined (Carmody, 2002). On the other hand, as has occurred worldwide, between 1970 and 2001 employment growth has occurred in the service sector, in particular the financial and business sector, which grew by 1600%, and the low-paying informal sector. Employment growth also took place among clerks and service workers in the wholesale and retail sector (South African Cities Network, 2004).

The government, as has been said, is one of the factors that mediate between global processes and local consequences. Therefore in light of current economic trends in South Africa it is necessary to examine the post-apartheid government's policies which could have reinforced or lessened the negative impacts of post-Fordism. The government initially followed the social democratic Reconstruction and Development Programme (RDP) between 1994 and 1996 to uplift the victims of apartheid. Thereafter, it introduced neo-

liberal economic reforms in the form of the Growth, Employment and Redistribution (GEAR) Programme which led to half a million jobs being lost (Carmody, 2002). The government also kept interest rates high to attract investment; however, this suppressed domestic demand for manufactured and imported goods instead, which meant further job losses (Beall, Crankshaw & Parnell, 2002). There has also been a push for Local Economic Development (LED) within townships in South Africa to create employment. A similar programme was initiated in the US with empowerment zone legislation giving tax benefits for jobs created in the inner city ghettos. However, this reinforced the residents' social separation from mainstream society and LED programmes in South Africa run the risk of doing the same (Marcuse, 1997a; Lohnert, Oldfield & Parnell, 1998).

2.3.2 Post-Fordist Spatial Patterns in South African cities

This global shift to post-Fordist production, which saw South Africa's economy moving away from manufacturing and toward service sector employment, has impacts at the city level which are spatially grounded and therefore have a specific pattern on the urban landscape.

Fordist South African cities were characterised by suburbanisation and sprawl, while some post-Fordist cities have inner-city decline and totalised suburbs or edge cities; however continuities from the Fordist period exist in the form of the decentralisation and deconcentration of economic activities (Beall, Crankshaw & Parnell, 2002). In general, South African cities now have many features of post-Fordist cities, namely, vast shopping malls, convention centres and waterfront developments. Factories have been replaced by park-like industrial estates and demand for high-rise offices in the CBD has declined in favour of decentralised, low-density, mixed-use complexes (Harrison, 1995; South African Cities Network, 2004). These offices are attractive due to declining demand for older buildings; high amenity, security, campus-style developments, open-plan offices, easy freeway access, cheap parking, and they are equipped with high communication technologies (Beall, Crankshaw & Parnell, 2002; Watson, 2000).

Regional shopping and convenience centres are the most successful retail developments and they are found within or near the wealthy suburbs (South African Cities Network, 2004). Retail began moving out from the inner city in favour of large suburban shopping malls from the 1970s. This was mainly due to security concerns, the global decentralisation trend and the white consumer market having fled the inner city for the suburbs. In 1970 there were only 12 planned shopping centres in South Africa but in 1999 there were 230 such centres, the majority located in the suburbs. Therefore retailing in the inner city has become largely informal, smaller shops sell low-order goods and cater to the African working class (Beall, Crankshaw & Parnell, 2002; Horn, 2002).

Offices and commercial activity have also decentralised countrywide and this has led to totalised suburbs forming where there is a concentration of high-value commercial development and activities (South African Cities Network, 2004). These sites are generally near the wealthy residential suburbs as seen in the development of Sandton in Johannesburg. According to Garreau there are different types of edge city locations: agricultural or trading towns; cities at the intersection of freeways on the periphery, and greenfield sites which are developed because of the attractive environment and the need for space in a growing metropolis (Michel & Scott, 2005). The rapid increase in residential and commercial development occurring in Bellville/Durbanville in Cape Town could see this area becoming a totalising suburb.

In the late 1990s there was a strong suburbanisation of headquarters. The most developed decentralisation has occurred in Johannesburg while Cape Town CBD has not suffered the same fate as other cities and space is still in demand. According to Rode's 2000 report on new office developments in the CBD and decentralised areas, Cape Town is the only one of the four major cities to have had new CBD office development in every year from 1995 to 2000 (Donaldson *et. al.*, 2003). Most CBDs in South Africa have suffered from white flight, the spatial effects of global economic restructuring and the dysfunctionality of the CBD. Therefore in Bloemfontein in the late 1990s a new, service sector-oriented centre developed to the west; in Pretoria decentralisation has occurred with new office and retail developments at the Menlyn node and some government offices moved out the CBD which

knocked investor confidence. In Durban, commercial developments have followed the residential and retail movement to La Lucia-Umhlanga Ridge. The Gateway Mall, which was expected to generate 6 000 jobs, moved to the wealthy residential and tourist area and this resulted in offices decentralising and an increased demand for housing. The development of La Lucia-Umhlanga Ridge is a public-private partnership between Tongaat Hullett, who owns the former agricultural land, and the Durban council and was planned due to the deterioration of the CBD. La Lucia Ridge is the site of office estates while a new, mixed-use, low-rise town centre is being developed on the Umhlanga Ridge. The area is surrounded by former black African townships and the plan was to create a mixed class residential area with provision of jobs and housing for the poor; however, it has instead become the site of wealthy professionals (Michel & Scott, 2005; Kitchin, 2002).

Johannesburg is, without a doubt, the most decentralised city in South Africa. Fifty-two percent of the top 169 commercial and industrial head offices are located in the northern suburbs rather than the CBD (Horn, 2002). The CBD was the main location for all manufacturing and service businesses in the 1950s and 1960s; however, with post-Fordist deindustrialisation, almost half the factories in the CBD closed between 1989 and 1999; manufacturing employment in the northern suburbs doubled in this period, with some relocations plus 200 new establishments (Beall, Crankshaw & Parnell, 2002). In 2001, 71% of employment was in the tertiary sector while only 14% was in manufacturing and, since the northern suburbs are the major site of the tertiary sector, the majority of employment opportunities are concentrated there. This sector in Johannesburg is dominated by community, personal and social services; commercial and financial services, real estate, insurance and business services. In 2000 office and retail space in the northern suburbs was about double that of the CBD (Beavon, 2004).

These suburbs were developed during the Fordist period as residential areas, accommodating the expanding white professional and managerial class which was increasingly in service sector employment. They were exclusively white due to apartheid policies, as will be discussed later. On the other hand, the black working class suburbs were south of the CBD near to mining and manufacturing employment at the time. Due to the

shift to service work and consequent shift in skills requirements, as well as industrial work moving to the northern suburbs, the black population, confined by apartheid to the southern townships (Soweto), was unable to find employment due to their skills and spatial mismatch (Cranshaw, 2005). During apartheid Soweto housed a multi-class black population, and it was suggested in 1986 that middle class housing should be constructed for blacks in the townships to produce a multi-class racial ghetto. However, the government refused to invest more money in those areas so when apartheid began to fall apart the black middle class left the townships and an outcast ghetto of the underclass was formed (Marcuse, 1997a).

According to Pearce-Oroz (2005:111), urban spatial segregation is “unequal access to either public networks of services or private networks of the marketplace”. In the post-apartheid state, services have been upgraded in townships but the underclass residents remain spatially segregated as they cannot access the labour market. Soweto residents cannot access the only jobs for which they qualify because these are located in the northern suburbs and travelling using public transport to that region is cost-prohibitive and time consuming. Soweto has therefore become a ghetto of economic, spatial and social exclusion and the northern suburbs form a totalised suburb with their restricted access neighbourhoods. While this spatial divide is one of class, as will be discussed later, the racial character of apartheid is reinforced in this spatial pattern. In South African cities, including Cape Town, outcast ghettos have a different character to the US model as they occur on the periphery and house the majority, rather than minority, population (Crankshaw, 2005).

This concentration of growing unemployment on the periphery of the city due to manufacturing decline is observed in all South African cities. These areas all become ghettos of exclusion because of high travel costs to locations of employment opportunities and this separation between the underclass residence and employment is reinforced by the post-apartheid government’s public housing and transport policies (South African Cities Network, 2004). The neo-liberal GEAR programme has meant state intervention in town planning has lessened and market forces have prevailed, as in Sao Paulo, Brazil, which also has high levels of inequality and social separation. Therefore despite current local planning

paradigms centring on compacting the city, global market forces are, in this case, more determinant and sprawl continues (Christopher, 2005; Harrison, 1995; Caldeira, 2000).

However, according to Oldfield (2002:36), “although both globalisation and apartheid legacies impinge on the capacity of the state, the state is not a victim in either of these processes”. The majority of public investment has been in social facilities and low-income housing located on the periphery, adjacent to former black African townships, which have few employment opportunities except for the informal sector. On the other hand, the upgrading of infrastructural services and transport has been focussed on the middle-income suburbs and commercial areas. Therefore the black townships have grown and had their services, but not their transport links to employment upgraded, which reinforces the apartheid geography of racial segregation and creates ghettos of exclusion (Jenkins & Wilkinson, 2002; City of Cape Town, 2003).

University of Cape Town

2.3.3 Post-apartheid context

As was stated previously, factors such as the stage of development of a country, level of integration with the global economy, past urban management and housing practices, national institutional differences and state traditions, result in the global processes, such as the change to post-Fordist production, affecting each country and city differently (van Kempen & Marcuse, 1997; Burgers & Musterd, 2002). This is of utmost importance in South Africa where global economic processes and the location of resultant market-driven developments interacts with the apartheid urban spatial legacy, to reinforce racial inequalities through the differentiation of classes (Marks & Bezzoli, 2001). Therefore the economic changes discussed above have a particular impact which not only differentiates between South Africa and other developing countries but also between cities within South Africa, which had different apartheid experiences.

During apartheid, South African cities were divided by the 1950 Group Areas Act into areas of residence reserved for particular race groups, separated by buffer zones. In Johannesburg the general Group Area pattern was that of whites in the suburbs north of the CBD and black Africans in the southern townships. Durban and Cape Town differed because they had a large Indian and Coloured population, respectively, which needed to be accommodated. The spatial layout of Cape Town is also different because of the shape of the peninsula and constraints of the mountain. Therefore unlike other South African cities which were roughly divided into a single region of white Group Areas and a black Group Areas region, Cape Town, has white Group Areas forming an arc within which the coloured and black African Group Areas lie. White Group Areas were generally in the Helderberg region, south-western and northern suburbs, separated by the railway lines from the majority coloured population and smaller black African population in the Cape Flats and south-eastern sector. This general apartheid spatial pattern still exists in South African cities today due to global forces spatially polarising the city by income and occupation, which generally mirrors racial distinctions.

2.3.4 Residential desegregation in South African cities

In order to understand the decentralisation of work and the resulting social polarisation in post-apartheid cities it is necessary to examine the extent of desegregation in the former whites-only areas, where employment is increasingly located. According to Lemon & Clifford (2005) the extent of desegregation depends on the class of residents moving, the type of accommodation and tenure available and the nature of the local labour market. Most desegregation occurs in the former white inner city areas, which have many flats for rental. Desegregation in the suburbs is occurring at a slower rate due to the differences in tenure, lower turnover of properties on the market and constraints to bond finance which many blacks encounter (Christopher, 2001).

In Johannesburg, from the late 1970s middle class black Africans moved out of the southern townships due to a shortage of housing in Soweto and a surplus in the inner city. During apartheid, they tended to move into the inner city suburbs and once apartheid ended some moved into the northern suburbs. In 2001, 17% of residents living in the northern suburbs (excluding domestic workers) were black African and 12% were Indian and coloured (Crankshaw, 2005). Indians were the main group to move into the former whites-only, middle-class northern suburbs in the 1990s while black African middle class families moved into these areas in the late 1990s (Morris, 1998). Fifty-four percent of black Africans in these former white areas own their house or apartment (Crankshaw, 2005). Property purchases by black Africans in former white areas in Tshwane (Pretoria) and Johannesburg increased in the 1997-2000 period compared to 1993-96; however, those buying in these cities differ by occupation. In Johannesburg the black Africans buying property are black professionals while in Tshwane they are the new government's black bureaucratic class (Horn & Buyisiwe Ngcobo, 2003; Donaldson, Jurgens & Bahr, 2003).

Tshwane's desegregation process had a delayed start and has been slow in peripheral and low-income areas. Areas of preference for black Africans have been those close to, or in the same region as, the former black townships, the main area being Akasia, which consists of 8 differing socio-economic areas. Flats, particularly in the lower-income central flatland areas, are popular with the desegregating black African population, while between 1991 and

1996, coloureds dispersed into lower and middle-income areas and whites moved out of the high density areas (Horn, 2002; Horn & Buyisiwe Ngcobo, 2003).

Horn & Buyisiwe Ngcobo (2003) identify 4 stages of desegregation: 'early invasion' where between 0 and 15% of the population are different to the Group Area population; 'late invasion' is 15-50%, 'domination', 50-85%, and 'succession' to a race different to the Group Area classification occurs when 85-100% of the population is from that particular group. In Tshwane suburban desegregation is led by higher income black professionals who are moving into middle to upper middle class newly-developed areas near the black townships. This movement is spontaneous and not centrally organised and these black Africans retain their social and spatial links with the regional black community. White flight has not occurred in Akasia, as occurred in the United States when the minority population moving in reaches 15% (Horn & Buyisiwe Ngcobo, 2003).

Desegregation in a smaller city, Pietersburg occurred in middle-income areas between the CBD and high-income suburbs. In contrast, in the similar sized Bloemfontein, blacks moved into lower-income areas between the CBD and townships. Desegregation in Bloemfontein also started later and has occurred more slowly and less extensively than in Pietersburg. This is due to both the conservative nature of Bloemfontein and the fact that the black township is close to the CBD and therefore black Africans are not forced to move to access jobs and save on transport. Whites are still concentrated in the northern, wealthier part of the CBD and city while the black Africans are in the south. The CBD is a transitional area of residence for blacks moving from the townships who wish to live in the northern suburbs. Unlike in Tshwane where desegregated blacks still have strong ties with the regional black society, in Bloemfontein there is high social segregation between blacks in the CBD and those in the townships (Jurgens *et. al.*, 2003).

Each city in South Africa has a different apartheid segregation and, thus desegregation, experience. With this in mind, we turn our attention to Cape Town, which is often the exception in discussions of the apartheid and post-apartheid experience of South African cities.

2.4. Cape Town

2.4.1 Cape Town's Economy

The growth rate of formal employment in Cape Town declined significantly in the late 1990s (Jenkins & Wilkinson, 2002). This could be due to the trimming of the civil service and teachers, as well as job losses in industry between 1996 and 2001 (Lohnert, Oldfield & Parnell, 1998; South African Cities Network, 2004). As was stated previously, Cape Town did have growth in industrial employment between 1970 and 1996; however, this changed thereafter (South African Cities Network, 2004). According to the Rode Report on industrial rentals and vacancies, "real rentals have been trending down since the early 1980s, which is a clear reflection of a contracting demand for industrial space, in turn the result of structural changes in the SA economy" (Rode, 2004a: 63). Industrial decline is due to declining international terms of trade, neo-liberal economic policies such as removal of tariff barriers, which has increased the exposure to Asian and Latin American competition, and the switch to an export-led economy. The major industries to be affected in Cape Town were textiles, clothing and food processing. In fact this downturn began in the 1980s and has meant that semi-skilled residents, in particular coloured women, have become increasingly unemployed and forced into the informal sector (Watson, 2000; Lohnert, Oldfield & Parnell, 1998).

On the other hand, there has been an increase in the finance, trade, leisure and tourism and film sectors (Watson, 2000; City of Cape Town, 2003). Other high growth-potential sectors in the city are biotechnology, information technology and high-value product manufacturing and Cape Town is increasingly attracting call centres and conferences. The largest formal employers in Cape Town are financial services and local government (Jenkins & Wilkinson, 2002). On the other hand, 90% of firms in Cape Town are small, very small or micro-enterprises (including the informal sector) and this has specific spatial implications as these businesses can be run from home or cheap, decentralised locations (City of Cape Town, 2003). Private investors are also attracted to decentralised, middle-class areas because they have good infrastructure, freeway access, amenity, security and a nearby professional labour force (Watson, 2000).

In general, this post-Fordist shift to the service sector has meant a shift in demand for more skilled labour (City of Cape Town, 2003).

2.4.2 Post-Fordist Spatial Patterns in Cape Town

The pertinent question is whether these post-Fordist economic changes have resulted in as great spatial polarisation in Cape Town, as was described in Johannesburg. Borel-Saladin (2006) states that since 1980 the census occupational evidence for Cape Town, supports Hamnett's (1994) theory of professionalisation of the labour market, rather than Sassen's (1994) occupation polarisation theory. This professionalisation of occupation and income structures has a spatial impact because the location of the middle class becomes increasingly important in the location of service sector businesses. Therefore this professionalisation increases the spatial divide between middle-class areas and the excluded ghetto in the south-east. The location of the middle class will be analysed in chapter 4.

However, while decentralisation of work to middle-class areas has increased in Cape Town, the CBD has not been rendered largely obsolete as it has in other South African cities (Wilkinson, 2000). In fact, due to the introduction of the Central City Improvement District and the conversion of offices to residential apartments, the CBD as had an upswing in its market rental rates and a decline in vacancies since 2004 (Smith, 2006). Therefore perhaps the degree of spatial polarisation in Cape Town is not as great as in Johannesburg. It could also be less decentralised because of the more complex spatial form of its physical geography, as described previously.

According to Turok (2001:2350), "the three most important structural elements of cities are employment, housing and the transport connections between them", therefore, the locations of these factors in Cape Town will be discussed here.

Despite the relatively strong position of Cape Town's CBD, the city is experiencing accelerating decentralisation in office and retail activities, and some industrial development. However, the location of decentralised business and accompanying formal employment is reinforcing apartheid geography by being concentrated in the areas with high amenity,

freeway access and security, which are the middle to high-income, historically white areas of Tygerberg, Blaauwberg, south-western suburbs and the Helderberg basin (Watson, 2000). The CBD, together with the southern and northern suburbs, only houses 37% of the population, mainly the wealthy, but it has 80% of all jobs in the city (Turok, 2001).

Decentralisation is not a new process. Bellville and Claremont grew firstly as retail nodes in response to post-war residential suburbanisation; then offices moved down Main and Voortrekker Roads, and large shopping malls in the suburbs grew in response to increasing suburbanisation of the 1970s. Today, suburbs are mixed-use, rather than solely residential, and new nodes are emerging; however, none of these are in the poorer areas. The current trend of mega-projects with mixed-use functions, such as Century City, require large tracts of land, and local authorities have not prevented their decentralised development (City of Cape Town, 2003; Watson, 2000).

Retail spatial patterns

In Cape Town retail is more decentralised than offices or industry because it was the first economic activity to move out when it followed its upper and middle-income clients moving to the suburbs (Turok, 2001). The trend of economic activity moving to the northern suburbs is also seen in shopping centre developments in recent years. Since 2002, centres that have been built or are under construction are: four in Milnerton and Tableview, the large CapeGate Mall in Kraaifontein and two 'Lifestyle' shopping centres in Tygervalley (Rode, 2004b; Koblitz, 2006a).

Other strong decentralised retail nodes are Claremont, Somerset West and the Strand. However, because of the Waterfront and the demand for high order goods by the new gentry in the inner city suburbs, the CBD has not lost all its retail functions. In terms of retail in the low-income Cape Flats and south-east, there are minor clusters in the mainly coloured areas of Athlone, Gatesville, Mitchell's Plain Town Centre, Lansdowne and Ottery Roads (City of Cape Town, 2003). Khayelitsha has mainly informal retail outlets and there are a few formal centres; yet residents often shop at Mitchell's Plain Town Centre or near their employment, which tends to be either in the city centre or the former whites-only areas of Bellville and Wynberg/Claremont (Barnes, 1998).

Office spatial patterns

Decentralised office modes contain highly skilled service sectors such as finance, real estate, IT consulting, accounting and business services. They cluster in the CBD and within residential areas in the southern, northern and Helderberg suburbs. Salt River and the CBD is the location for 44% of commercial⁵ employment; Bellville/Durbanville is the next largest cluster. In fact, due to the demand for offices in new developments, areas of high demand are the Waterfront, Claremont Century City and Tygervalley/Durbanville. The areas with greatest office growth are Blaauwberg and Tygerberg/Durbanville, and to a lesser extent Claremont and the Helderberg Basin. All these office nodes are in middle-class, former whites-only areas. In fact, most formal investment in commercial and residential activity has not been at nodes, but along the Blaauwberg, Platteklouf and Durban Roads. In the post-Fordist period there has also been an increasing work-from-home phenomenon worldwide and in Cape Town this occurs in the wealthy suburbs (City of Cape Town, 2003).

Industrial spatial patterns

In the middle of the 20th century industry was located in Salt River, Woodstock, Maitland, Paarden Eiland and Epping. Brackenfell, Blackheath, Somerset West and the coloured industrial town of Atlantis were developed in the 1970s. New light industry areas that have developed since then, and have grown significantly, are Montague Gardens and Killarney Gardens in the northern area of Blaauwberg. These growing industrial⁶ areas provide more skilled manufacturing jobs, which means those who had previously done semi-skilled, blue-collar industrial work are forced to work in low-skill service jobs. Industrial employment is still concentrated in central areas such as Salt River, Maitland and Epping, and, together with the northern suburbs, these areas account for 78% of industrial employment. In the former black African townships industrial activities are small and informal, and Philippi Industria, the only formal industry site, lacks growth. Small industrial developments have occurred in the south-east at the Mitchell's Plain Town Centre and Airport Industria. There has definitely been a shift towards the northern areas of Blaauwberg where there is new

⁵ 'Commercial' includes retail, restaurants, finance, insurance, business services and community, social and personal services (largely the public sector).

⁶ 'Industrial' is mainly manufacturing activities but also includes some wholesale retail and vehicle repair activities (City of Cape Town, 2003).

growth in high-tech, niche-market industries (City of Cape Town, 2003). Overall, Cape Town has never had as large an industrial base as Johannesburg and therefore it has not had as many job losses due to economic restructuring (South African Cities Network, 2004). The fact that the CBD is still prominent and the port is located there, also means decentralisation of industries has not occurred at the same scale as in Johannesburg. Industry was also used during apartheid to create buffer zones between white and, particularly, coloured areas and therefore those industries that are decentralised are along railway lines, near to low-income communities, which are sources of labour.

Residential spatial patterns

The spatial patterns of new private residential development follow the post-war suburbanisation spatial trends. However, such development is increasingly security conscious, and more exclusive, access-controlled residential developments flourish on the urban edge (Watson, 2000). There has been rapid middle and upper-income, low-density, car-oriented development in Tygerberg Hills, Blaauwberg, Kraaifontein, the Helderberg basin and parts of the south-western suburbs. However, the area available for development in the southern suburbs is limited due to the constraints of the mountain, whereas in the northern suburbs there is much undeveloped space (City of Cape Town, 2003).

Residential property development in the north has played a key role in the northern movement of employment. The disproportionate amount of middle and upper income residential development that has occurred has made this area a concentration of the middle class from which the service sector can draw (Turok, 2001). In recent years there has been a trend of people moving from the southern to northern suburbs because of housing affordability, their employment having relocated there and better security (Koblitz, 2006a). Residential developments in Parklands in the north-west have occurred rapidly and offer the 'live, work and play' lifestyle (Cape Times, 2006). The Tygervalley area in the north-east exploded in terms of residential and commercial development in the last three to five years and this region has the second highest level of disposable income outside of Sandton which is why it is being labelled 'The Sandton of the Western Cape'. These developments are aimed at young professionals and are mixed use, including apartments, offices and restaurants (Koblitz, 2006a).

The Cape Flats or south-east sector

The Cape Flats or the south-east is where the poor are concentrated in Cape Town. Investment in this area has tended to be public rather than private as private investors are concerned with security of employees, premises and vehicles in this high crime area. The Cape Flats has seen little job growth for semi or unskilled workers, who are the majority of residents. Therefore residents are either forced to travel great distances to formal employment or to find employment in the low-paying informal sector, which is the major employer of the poor in Cape Town. However, informal sector work generally follows established formal retail patterns because locations need high pedestrian levels and therefore the corridors and nodes in majority white suburbs are the sites of this employment. Therefore informal sector work could also be decentralising, not only along the emerging corridors into the Cape Flats area, but it could also be following formal retail to the wealthy suburbs (City of Cape Town, 2003).

As mentioned previously, this area is thought to be an excluded ghetto in Cape Town and this will be analysed in light of the criteria mentioned by Marcuse (Marcuse, 1997a & b; 2002; Marcuse & van Kempen, 2000).

Transport connections

This suburbanisation of work in Cape Town, which has resulted in a multi-nodal city, should mean that movement distribution has improved and travelling become more convenient and efficient for all. However, the poor who are concentrated in the Cape Flats and southeast sector, are far more reliant upon public transport than those in the northern and southern suburbs, but their transport connections to employment nodes are weak (Watson, 2000).

Decentralisation of work has meant that the distance between formal jobs and the low-income residential areas in the south east has increased because, although there still is a lot of movement to the CBD, the north-south movement of workers is becoming increasingly important. New jobs are being created by all the developments in the northern suburbs, but these are hard for those without cars to access. The road (bus and taxi) and rail network is designed to facilitate movement to the CBD and those trying to move northward have to use

multiple modes of transport, which makes job searching cost-prohibitive. Koeberg and Durban Roads are the main sites of office, retail and industrial development in the north, but the spatial form is different to that of older corridors, where business is dense on major road and rail routes. In fact, in the past few years more public and private investment has occurred outside corridors and nodes than within them. These new developments are often large and low-density, requiring large tracts of land, which means they are hard for those using main transport routes and railway lines to access (Turok, 2001; City of Cape Town, 2003).

The government has not helped curb this problem with either their housing or transport policies. An example of this is the public housing scheme of Delft South which was constructed in 1996, next to the airport, far from the city centre. It has minimal public transport links and those residents with formal employment have far to travel to their relatively low-paying jobs (Oldfield, 2004).

2.4.3 Residential Desegregation in Cape Town

As was stated previously, Turok (2001) identifies employment, housing and transport connections as the most important structural determinants in a city. The nature of employment, transport and new residential development in Cape Town has been discussed above, but the other aspect of the housing market which needs to be analysed is the extent and location of residential desegregation. Cape Town's post-Fordist spatial order needs to be understood in light of the legacy of apartheid, which still has an impact on the urban form.

Cape Town has a different racial character due to its large coloured population and, therefore its post-apartheid residential desegregation experience differs from other South African cities. Firstly, unlike Johannesburg, Cape Town has a limited black African middle class and therefore the wealthy, former white southern suburbs are not experiencing much in-movement of middle class blacks, as is occurring in Sandton (Lemon & Clifford, 2005). Instead desegregation is generally that of coloureds moving into former white areas, often those areas in the southern suburbs from which they were removed by apartheid officials

(Spinks, 2001). Factors constricting desegregation are a shortage of rental accommodation in former white areas, the proliferation of public housing built on the periphery adjacent to former black townships, and the steep land and house price gradient between the previous Group Areas. Between 1990 and 1994 only 1.58% of property transfers were between different race Group Areas (Watson, 2000; Turok & Watson, 2001; Saff, 1998). Therefore the housing market is still very segmented by race and the white population enjoys the highest mobility, while the majority of blacks cannot afford to leave the Group Areas to which they were assigned because of the professionalisation of the labour market and the sharp gradient in house prices between former different racial areas (Turok, 2001).

The final distinguishing feature in Cape Town's post-apartheid experience is that the inner city, which is the site of desegregation in many South African cities is, by contrast, popular with the wealthy and is becoming gentrified rather than becoming a majority black, run-down area as in Johannesburg (Beall, Crankshaw & Parnell, 2002; Crankshaw, 2005).

Throughout apartheid, the inner city areas of Woodstock and Salt River were racially mixed and remain so today. Since the mid-1980s areas such as Lansdowne, Wynberg and Observatory have also become racially integrated. Le Fleur's (2005) Census 1996 analysis showed that the areas which had been dominated by blacks were Ottery, Mowbray and Rondebosch East; Zonnebloem and Summer Greens were 33% black; Royal Cape, Ysterplaat, Kalk Bay, Observatory, Southfield and Rosebank were 21% to 28% black, and Bloubergstrand, Kenilworth, Muizenberg, Brooklyn and Rugby had 15% to 17% desegregation. This was mainly coloured desegregation; however, Mowbray, Rosebank, and Bloubergstrand had some black African desegregation.

Areas that were developed post-apartheid, either by private developers or the state, need to be looked at separately to areas which were classified under the GAA. For instance, Delft South, which was developed in 1996 for those on the integrated housing waiting list, appears to be desegregated, but that is because coloured and black Africans were allocated those houses. Despite this integration of races the patterns of apartheid remain in residents' working, shopping, being schooled and socialising in their former Group Areas. A common

socio-economic class is subordinate to racial, linguistic and religious identities (Oldfield, 2004).

The Tygerberg region in the northern suburbs is the site of many new employment opportunities and is predominantly a middle-class, white area. However, desegregation is occurring in some parts as coloureds, who had lived south of the Bellville railway line during apartheid, move into Parow Valley, Central Parow, Parow West, Oakdale, Kenridge, Boston and Central Durbanville. The residents moving in are of the same socio-economic status, lower to middle-income, and these were the areas from which they were forcibly removed by apartheid officials. The greatest desegregation levels occur in those areas adjacent to former coloured Group Areas (Myburgh, 1996).

Saff's (1998a) analysis of inter-racial property transfers in Cape Town between 1990 and 1992 is the only previous desegregation study for the whole city but it has limitations because it does not account for blacks staying in rental accommodation in former white-only areas. Inter-racial property transfers were mainly between white and coloureds and this has occurred in the same suburbs mentioned by Le Fleur (2005), ones with a history of coloured residence, adjacent to former coloureds-only areas.

2.5 Concluding remarks

This literature review has looked at: international urban trends and theories of inequality; how this post-Fordist economy has been experienced in South African cities in light of the apartheid spatial legacy; and, in particular, how this has played out in Cape Town. It has been established that, due to the growth of the service sector since 1980, Cape Town has undergone professionalisation of occupation structures and this has had a spatial manifestation in the increasing decentralisation of such businesses to the middle-class suburbs, which are former white Group Areas. The decentralisation of work to middle-class areas is a spatial form in many cities worldwide; however, due to the apartheid spatial legacy of South African cities this has the potential to increase racial occupational and spatial inequality. Therefore the extent of residential desegregation of such areas is analysed in chapter 4.

2.6 Research Questions

In light of the literature on international post-Fordist patterns, other South African cities' post-Fordist and desegregation experiences, and what has already been written about Cape Town, the following questions are used in this thesis to address the hypothesis that the post-Fordist spatial order is reinforcing apartheid racial inequality:

Firstly, in order to determine the extent of the post-Fordist decentralisation of service sector employment to middle-class suburbs in Cape Town: 'What is the spatial distribution of the middle class?'

Secondly, 'What is the relationship between the location of the middle class, decentralised employment and apartheid racial patterns in Cape Town?'

Thirdly, in light of the above question, to analyse how the racial geography of Cape Town has changed since the end of apartheid, particularly in relation to middle class decentralised employment nodes:

'What is the extent of residential desegregation in former 'white' and 'coloured' Group Areas?'

Fourthly, specific post-Fordist spatial phenomena, which also have distinct racial and class characteristics, are analysed in these questions:

'Does the nature of the south-east sector as an 'excluded ghetto' reinforce apartheid racial divisions through the labour market?'

Is the location of the middle class and a growing decentralised service sector node at Bellville/Durbanville creating a 'totalising suburb' which reinforces the exclusion of the black population on the basis of class in post-apartheid Cape Town?'

CHAPTER 3: METHODOLOGY

In order to answer these research questions I used various methods and tools to analyse data for residential areas of Cape Town from the 2001 Population Census. I addressed the question of the distribution of middle-class occupations by using occupational category and education level census data. In order to address how this post-Fordist pattern might relate to post-apartheid racial patterns, I analysed the racial composition of sub-places using census race data. Finally, to look at specific post-Fordist spatial phenomena, I analysed occupation, race, income, unemployment and education levels.

3.1 Census 2001 data

To do this analysis, with the assistance of Tracy Daniels of Statistics South Africa (StatsSA), I used SuperCross to extract Census 2001 data for selected sub-places from the Unit Record Database. I requested the race, occupation, income, employment, education and enumerator type data for each sub-place to be extracted and, once in tabular form, manipulated the data for the spatial analysis. Each table shows the numbers of people and the percentage distribution across each category for the 595 residential sub-places. E.g., the numbers in each race group and their percentage distribution, the latter figures were utilised for mapping and comparing areas. The methodology surrounding the specific sub-places for which the data were extracted will be discussed below.

The major tool I used for analysing the Census data was Geographical Information Systems (GIS) and the software packages I utilised were ArcView and Philcarto.

3.1.1 Unit of analysis: residential sub-place

The Census 2001 sub-place is the level of spatial analysis in this thesis. A sub-place is smaller than a main place (city) and is made up of enumerator areas, the smallest unit in the Census. The sub-place “could be a suburb, section of township, smallholding, village, sub-village, ward or informal settlement” (Statistics South Africa, 2004:15). Sub-places are used in this analysis because they coincide with apartheid Group Area boundaries. Enumerator area level analysis is not practical as StatsSA will not release person data at this

level and in terms of the logic of desegregation, those moving into former whites-only areas consider themselves moving into a suburb not an enumerator area. Also, all other desegregation studies in South African cities use suburbs as the spatial unit of analysis, except for Christopher (2005) who in his study used the EA level. The shapefile of Cape Town sub-places was obtained from StatsSA.

Only sub-places which contain the EA types urban and/or informal settlements were used because the study focuses on residential areas. An urban settlement is defined as formally developed by local government, has services provided and formal roads. In a city these would be suburbs and townships. Informal settlements or squatter camps are land not formally designated for residential purposes. These are usually on the periphery and adjacent to former black townships (Statistics South Africa, 2004). Figure 3.1 shows a typical Cape Town informal settlement.

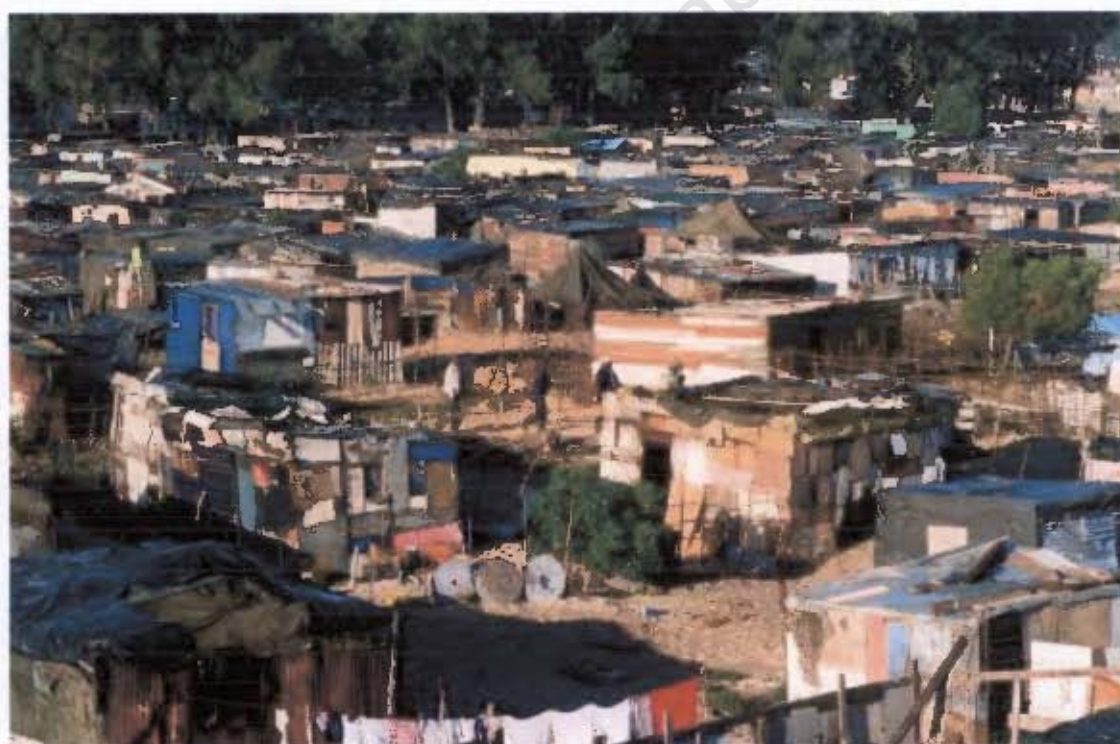


Figure 3.1: Cape Town informal settlement

Source: SA Good News, 2006

I used Census 2001 enumerator area (EA) type data to determine which sub-places were urban or informal settlements. Those sub-places which contained the EA types of urban settlement or informal settlement were selected. Sub-places consisting only of the remaining EA types - sparse, tribal settlement, farm, smallholding, hostel, recreational, industrial area and institution - were excluded. Generally, those excluded sub-places in Cape Town only consisted of one EA type, and most were either industrial land, institutions or smallholdings. Three sub-places were excluded according to these rules, but I included them in the analysis because they were sub-places that were classified as institutions because they were retirement villages. They were Thornwood, a sub-place surrounded by Thornton, Silver Mine Village in Noordhoek, and Northgate near Panorama. Figure 3.2 below shows which City of Cape Town sub-places will be analysed.

Atlantis's racial and occupational data are included in the formation of groups, and, if the scale allows, it is included in some maps. However because it is so removed from the rest of Cape Town and therefore does not figure in the post-Fordist spatial order its racial and occupational composition will not be discussed. Atlantis was created by the apartheid government in the 1970s to be a self-contained city for the coloured population. The government offered incentives to industry to decentralise there and this was meant to create hundreds of thousands of jobs; however, by 1992 fewer than 10 000 jobs were created and 3 000 of these employees commuted from Cape Town. Census 2001 data shows that today, 49% of the mainly coloured population of Atlantis is employed in manufacturing, over 50% of residents have monthly incomes below R1 600 and unemployment is 28%. Therefore since service sector employment has not grown in Atlantis, it is not an edge city and it is excluded from the post-Fordist spatial order analysis of Cape Town (Borel-Saladin, 2006).

Particular residential areas/regions, which are mentioned in the class and desegregation discussions, are displayed on Figure 3.2, while particular employment nodes are shown on Figures 4.1 and 4.2 in chapter 4.

The large non-residential areas on the map are: in the south-west, the Table Mountain National Park and Cape Point Nature Reserve; to the north east, farm land; in the centre,

west of Mitchell's Plain, are the smallholdings of Philippi; and north of Mitchell's Plain is the Cape Town International Airport.

Figure 3.2: Census 2001 residential sub-places used in this analysis



3.2 Group Areas classification

I determined and displayed the apartheid racial patterns in order to analyse the desegregation in Cape Town and to interpret the spatial distribution of the middle class in post-apartheid racial terms.

The apartheid government's Group Areas Act (GAA) was brought into effect in 1950 and designated certain residential areas of the city for particular race groups⁷. The 1950 Population Registration Act classified the population as 'white', 'black', 'Indian' and 'coloured' and allocated urban space according to this. Since Cape Town had a majority coloured population and a very small black African population, far more sub-places are classified coloured (80) than black African (24). Even though the white population (32%) was smaller than the coloured population (54%), during apartheid, whites were allocated 315 of the 595 Census 2001 residential sub-places (Republic of South Africa, Central Statistical Service, 1980a). These 315 sub-places are an area of 484.23 km², which is 56% of the residential sub-place area in the city.

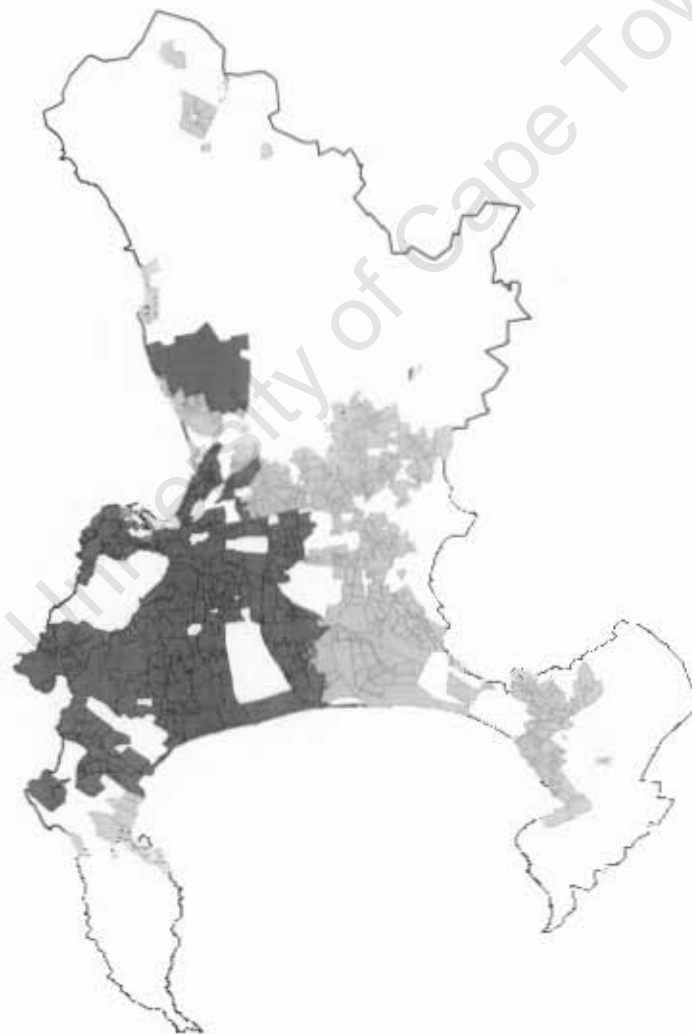
I identified the Group Areas Act classification of each sub-place and assumed that during apartheid 100% of the population in that area was of the particular race assigned to it. Those sub-places to which this assumption does not apply will be noted.

All Group Area proclamations are available in the form of government gazettes; however, secondary sources are a far more efficient source for determining classifications. Such sources; however, usually focus on particular areas of Cape Town, particularly the southern suburbs (Christopher, 1994; Centre for Intergroup Studies, 1983; Cook, 1991; Horrel, 1958; Le Fleur, 2005; Mesthrie, 1994; Saff, 1998; Western, 1996). Myburgh (1996) was the only source to focus on the Tygerberg area in the northern suburbs. The South African Institute of Race Relations Annual Survey of Race Relations also provided information on what areas had been proclaimed each year but did not give detailed boundaries (Cooper *et. al.*, 1979; 1985; 1990; 1992; Gordon *et. al.*, 1980; Horrel, 1962; 1964; 1965; 1967; 1968; 1969; Horrel *et. al.*; 1972; 1982; Horrel & Hodgson, 1976).

⁷ Black African urban areas were proclaimed under different legislation

I obtained council noting sheets with Group Area classifications and boundaries for the former Municipality of Cape Town area from Property Services at the City of Cape Town. These sheets were a Group Area boundaries record, initially drawn up in 1975 by the office of the Property Section, Land Survey Branch, and subsequent Group Area proclamations up until 1989 were included. These 14 noting sheets showed Group Area boundaries and classifications for the area bordered by Fish Hoek in the south, the Atlantic Seaboard in the west, Milnerton in the north and Parow in the east. The darker sub-places show the area included (Figure 3.3).

Figure 3.3: Sub-places covered in Group Area noting sheets provided by City of Cape Town



Such sheets were not available for the other pre-unicity municipalities, Blaauwberg, Tygerberg, Oostenberg, Helderberg and South Peninsula, although part of the last municipality was included in the Municipality of Cape Town noting sheets. Therefore I had to obtain the information for these areas from the official Group Area proclamation noting sheets, which are available from the Surveyor General's Office in the Western Cape. Alphabetical volumes of Group Area proclamations by municipality for the whole former Cape Province are found in the Surveyor General's Office archives and I requested the numbered folders for each area of interest. These folders include information on Group Area classifications as well as suburb and road name changes, and the development of new areas. The folders include the Group Area proclamations from the Government Gazette and usually an accompanying map. Most areas had several proclamations because some areas were expanded and some were deproclaimed as one race and reclassified as another. However, the maps accompanying these proclamations do not always cover the entire suburb but rather the portion being added or amended. I therefore examined the proclamations and maps from all years in order to determine the Group Area classification for each suburb.

In order for buffer zones to be created between white, coloured and black areas, the Group Area boundaries tended to be designated according to major roads and railways. Census 2001 sub-place boundaries also correspond to major roads and railway lines and therefore it was fairly easy to racially classify current sub-places.

The only Census 2001 sub-places which were made up of both coloureds and whites-only groups during apartheid were: Wynberg Central, Youngsfield, Heathfield, Retreat, Crawford and Lansdowne. These suburbs had to be split in ArcView in order to identify each Group Area's extent of desegregation. This was done by using the enumerator areas within these sub-places. The EAs of each portion were dissolved to make one polygon for each Group Area.

Two other sub-places were also split because each had a substantial portion which had only been developed post-apartheid. I divided Muizenberg into two portions, east and west of

Prince George's Drive because the western portion was a white Group Area and the eastern portion was only developed after 1991 and was settled mainly by coloured and black Africans. Steenberg was the other sub-place I split, but not for the same reason as Muizenberg. In the south-western suburbs are two areas called 'Steenberg'. The one is a former coloured Group Area adjacent to Retreat, and the other is Steenberg Estate, a wealthy gated community adjacent to Tokai and Pollsmoor Prison which was developed after 1991. These two areas are not adjacent and have very different demographic profiles; however, StatsSA's Census 2001 database considered them to be one sub-place. Therefore I split this 'sub-place' into a coloured and post-apartheid Steenberg.

The majority of sub-places were classified 'white', 'black', 'coloured' or 'Indian'. There was one 'Malay' Group Area, Schotshe Kloof in the City Centre, and I designated Woodstock and Salt River 'mixed' due to the fact that at various stages of apartheid sections of each were proclaimed, and often subsequently deproclaimed, 'white' or 'coloured'. Those living in the areas resisted these proclamations and therefore the areas remained mixed throughout apartheid. Some suburbs were also declared 'grey areas' by the 1988 Free Settlement Areas Act. These were areas within which all races could live and therefore their desegregation began before the repeal of the Group Areas Act. These FSAs included the already mixed Woodstock and Salt River, Zonnebloem, Wetton, Ottery, Royal Cape and Youngsfield. Zonnebloem was District Six and is adjacent to Woodstock and Salt River in the city centre. Wetton, Ottery, Royal Cape and Youngsfield are adjacent suburbs in the south-western suburbs. There were also two sub-places in the Delft area, Voorbrug and Roosendal, which were created in 1989 as public housing areas for coloureds and black Africans. These 'Mixed', 'Malay' and 'coloured and 'black African' areas were included in the 'coloured' group for the racial and occupation analyses.

Sub-places that were developed after the repeal of the GAA in 1991 were labelled as 'post-1991' to analyse their racial composition separately. These areas were identified using the 1990 (6th edition) and 2003 (11th edition) of the Cape Town Road Map (Map Studio, 1990 & 2003) and are generally located in the northern suburbs, the site of much residential development in recent years. The post-1991 identifier is important because, for instance,

Delft South, which was built in 1996, if classified either 'black African' or 'coloured' would be considered highly racially integrated. However, it is a post-apartheid sub-place which was built to house people on the racially integrated housing waiting list and therefore both black African and coloured residents were allocated housing there (Oldfield, 2004).

The Group Area classification of each residential sub-place was added to the sub-place database file to be included in the GIS analysis.

Because most of the Group Area boundaries are the same as the Census 2001 sub-place boundaries, it was easy to obtain the racial, occupational, employment, income and educational data. However, the Census 2001 sub-places which were split into two racial classifications required that I, with the assistance of StatsSA, extract the data using the combined EAs of each Group Area. This could be done for all the areas, except the coloureds and whites-only portions of Youngsfield, because each portion is a single EA and StatsSA is unable to give out data at such a detailed level. Therefore the coloured portion, which consists of some institutions and a few street blocks of residential flats, was included in the coloured Wynberg portion, which is adjacent to it. The white Group Area portion of Youngsfield is a Defence Force institution and therefore was excluded from the analysis.

3.3 The post-Fordist spatial order

The extent of decentralisation in Cape Town is analysed using City of Cape Town land-use data, and the spatial distribution of the middle class and residents with tertiary education. For the Tygervalley area in particular, an aerial photograph (Figure 4.3) taken in 1995 is compared with photographs I took of the area in September 2006 (Figures 4.4 and 4.5) to demonstrate how much commercial and middle-class residential development has occurred in that area.

3.3.1 Location of commercial and industrial land

I mapped Cape Town's 2002 commercial and industrial land-use data to show the location of employment for those sectors. I included retail centres on the commercial land use map. I highlighted particular commercial nodes, discussed in the literature, on the commercial map and labelled large industrial areas on the industrial land use map.

'Commercial' includes retail, restaurants, finance, insurance, business services and community, social and personal services (largely the public sector). 'Industrial' is mainly manufacturing activities but also includes some wholesale retail and vehicle repair activities (City of Cape Town, 2003).

The spatial patterns of commercial and industrial employment will be discussed in light of these land-use maps.

In chapter 4, I discuss the CBD and decentralised nodes and in particular I look at the south-east as an outcast or excluded ghetto and Bellville/Durbanville as having elements of a totalising suburb.

The term 'south-east sector' is interchangeable with the 'Cape Flats' and the major residential areas within it are Mitchell's Plain and the former black African townships. The south-east sector's economic and social relationship to the rest of the city is important in determining the impact of decentralisation on racial inequality as this region has majority black residents. The race, class, education levels, unemployment rate and poverty levels of the south-east are discussed. I calculated the unemployment rate, according to the official unemployment definition, as the number of unemployed divided by the total in the labour force actively seeking work, multiplied by 100 to get a percentage and visually displayed the results. Poverty levels are visually displayed as the percentage of employed residents with a monthly income of less than R1 600. Census income data is banded and no per capita income measure is available. R1 600 is the income level utilised in the City of Cape Town's Socio-Economic Deprivation Index as the household subsistence level. R1 600 per month was also decided upon after I analysed the income distribution of a random selection

of low, middle and high-income sub-places. The R1 600 per month level seemed to offer the best differentiation between sub-places. The analysis of these factors should show that residents in the south-east are excluded from the mainstream economy and thus the fact that its residents are black reinforces apartheid racial spatial divisions.

The development of the Bellville/Durbanville node since the 1970s will be discussed in light of the literature on totalising suburbs. Marcuse (1997b) uses the term 'totalising suburb' rather than 'edge city' to show the suburban origin of this post-Fordist spatial form. It is not necessarily easy applying international spatial terms to the South African context because the US definition of suburbs differs from both the European and the South African ones. Determining the spatial limits and accessing data to address the criteria for identifying for a totalising suburb is harder than for the excluded ghetto. According to Marcuse (1997b), the post-Fordist totalising suburb includes business activities, employment centres, commercial facilities, social and cultural facilities, and residentially exclusive enclaves i.e. gated communities. Economic dependence on the central city may still occur; however, everyday life can exist within the symbolic walls. These are the middle-class suburbs to which businesses have decentralised. In Johannesburg, Sandton is a totalising suburb as it contains a large proportion of service sector business as well as middle to upper-class residents who live, work and play in the northern suburbs. Measures of a totalised suburb are harder to analyse than the excluded ghetto because data on where people who live in the area work and conduct their everyday day activities is not readily available. Therefore qualitative data will have to be used to assess to what extent this middle-class, growing employment nodes is eroding or reinforcing apartheid racial spatial divisions.

3.4 Spatial patterns of occupational class

Since it is hypothesised that growing service sector employment is occurring in the northern suburbs, it is necessary to display visually the occupational class distribution in Cape Town. Service sector employment requires skilled employees and, according to Borel-Saladin (2006), the labour force in Cape Town is professionalising. Therefore the residential location of these potential skilled employees is important in understanding why, and to what

extent, decentralised middle-class employment is increasingly concentrating in the northern suburbs, thus reinforcing apartheid racial spatial patterns.

I analysed this occupational distribution by performing both a univariate occupational analysis using ArcView and a multivariate analysis using Philcarto. The tertiary education distribution was analysed using ArcView.

3.4.1 Occupational class spatial distribution

I analysed the spatial patterns of the middle-class population by looking at the occupational characteristics of each sub-place because, in South Africa, occupation is the starting point for determining class as households rely on wages as their source of income (Seekings & Natrass, 2005). I mapped the percentage population employed in middle-class occupations, which are the Census 2001 occupation categories 'Legislators; senior officials and managers', 'Professionals' and 'Technicians and associate professionals'. This middle-class distribution is not only important in light of the post-Fordist literature and the location of commercial and industrial employment but it will also be analysed and discussed in the context of post-apartheid racial patterns. This definition of the middle class differs to Crankshaw's (2005) class analysis of Johannesburg in which he excludes 'Technicians and associate professionals'. Seekings and Natrass (2005) outline five classes: upper, semi-professional, intermediate, core working class and marginal working class. My middle-class occupation category therefore combines the upper class and semi-professional class. The category 'Technicians and associate professionals' is also included by Stats SA in their classification of skilled occupations (Statistics South Africa, 2006: iii).

For all the ArcView maps in this thesis, a graduated colour scheme was used to display differences between suburbs. Natural breaks were used and four groups chosen for each display. Natural breaks is the default classification method in ArcView: it finds groupings and patterns inherent in the data and identifies breakpoints between groups using a statistical formula, Jenk's optimization (ESRI, 1990-1998). Two decimal places are used on the maps; these figures are, however, rounded for legibility within the text.

Racial composition of the middle class

To analyse the post-apartheid racial composition of the middle class in Cape Town, I tabulated the middle class occupation categories in terms of their racial composition for the total labour force of Cape Town. I showed the numbers and percentage distribution of each race in the following occupation categories:

- The combined group of 'Legislators, senior officials and managers' and 'Professionals';
- 'Technicians and associate professionals' ;
- These three middle-class occupational categories combined.

I compared this Census 2001 distribution to 1980 and 1991 census data; however, the 1991 middle class occupation categories for all three censuses differ and therefore I could only compare the percentage of each race in the combined middle class occupation categories. I did this comparison to see to what extent the growing middle class had desegregated between 1980 and 2001. The 1980 and 1991 census occupation data also includes the unemployed because the question asked was "If unemployed (i.e. looking for work), state last occupation." However, despite this, I still felt that the cross-sectional time analysis of the changing racial character of the middle class was important for this thesis. The 1980 and 1991 data for Cape Town was collated by the statistical region of Cape Town and magisterial districts of Kuilsrivier, Strand and Somerset West.

3.4.2 Higher education spatial distribution

Tertiary education (above grade 12/Matric) is increasingly necessary for access to post-Fordist middle-class occupations. I therefore mapped the spatial distribution of the percentage of the employed population with a tertiary education. Apartheid education policies discriminated against blacks and therefore the upgrading of education and skill requirements due to post-Fordism have had a disproportionate negatively impact on the employment opportunities available to the black population who suffer a skills mismatch. I also cross-tabulated the percentage tertiary education and middle-class groups to look at the relationship between the two variables, which theoretically are highly correlated.

3.4.3 Multivariate analysis of occupational class spatial distribution

I also analysed the spatial distribution of occupational class in Cape Town using a cartomatics programme, Philcarto, which maps the results of the multivariate statistical analyses that it performs. This programme was developed to find “more current methods and techniques of analysis, such as are typically applied to the census of the population” and therefore is useful in analysing Cape Town’s census data (Waniez, 2003:6). One cannot perform spatial analyses using Philcarto but one can rather statistically analyse data, which are geographically defined, and the results are produced as both maps and tables. This analysis differs from the one above because the former is a univariate display whereas Philcarto can do multivariate analysis.

This analysis of class, therefore, includes all the occupational categories, unlike the ArcView analysis discussed above. It enables me to not only see non-middle-class areas, but also to determine which of these areas are semi-skilled or unskilled occupation concentrations. For this analysis, I used the multivariate technique of cluster analysis using hierarchical ascending classification (HAC) with ‘correspondences’ to classify sub-places and, subsequently, display the results on a map. The ‘correspondences’ technique assumes that the variables in the model are all parts of the whole e.g. all possible occupation categories; and the data values are counts rather than percentages.

In this case, the sub-places were assigned clusters by their relative numbers of residents employed in three groupings:

- the middle-class occupation groups mentioned above are termed ‘middle-class occupations’ in the diagrams;
- ‘Clerks’ together with ‘Service workers; shop and market sales workers’ are termed ‘Clerical, sales and service workers’;
- ‘Skilled agricultural and fishery workers’, ‘Craft and related trades workers’, ‘Plant and machine operators and assemblers’ and ‘Elementary occupations’ were grouped as ‘manual occupations’.

I intuitively decided upon these three occupational groupings by the skills levels required: the highly skilled middle-class occupations, the semi-skilled, white-collar clerical, sales and service workers, and the semi-skilled, blue-collar and unskilled manual occupations. Therefore I roughly divide the occupation categories into three skill groups: firstly, high skilled; secondly, semi-skilled, white collar workers, and thirdly, semi-skilled, blue collar and unskilled workers. I substantiated this decision by performing exploratory cluster analysis using each census occupation category separately to determine what the natural groupings of the occupation categories were. I experimented with different numbers of clusters and four showed the best distinction. The profile of the four clusters analysing all the occupation categories is below (Figure 3.4).

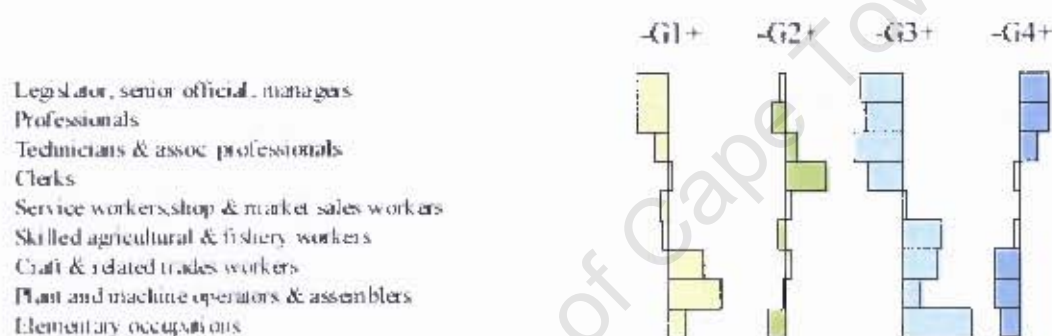


Figure 3.4: Group profiles from initial exploratory HAC cluster analysis of occupation categories

The bars represent standard deviation from the mean of each variable (occupation category). For example, 'elementary occupations' are strongly present in G3 sub-places compared to this occupational group's presence or absence in the other sub-place groupings. Bars to the right show that a variable is present and those to the left show the relative absence. The length of the bar is the extent to which an occupation is present or absent.

This showed that the four categories I mentioned above in the 'manual occupations' group were very clearly grouped. The 'Legislators; senior officials and managers' and 'Professionals' also grouped together with 'Technicians and associate professionals' in all but group two. I was, however, uncertain as to whether I should group the categories

'Clerks' and 'Service workers; shop and market sales workers' because, except in group two, they did not follow the same profile. However, I further explored this issue by performing HAC cluster analysis with four exploratory occupation groups: 'Middle-class occupations', 'Manual occupations', and 'Clerks' and 'Service workers, shop and market sales' separately. This showed that separately the latter two did not really feature in any of the groups and neither seemed to group well with either 'Middle-class occupations' or 'Manual occupations'. Therefore these two occupation categories were grouped to provide the third occupation group for the analysis of occupational class spatial distribution in Cape Town.

I performed the HAC analysis on these three occupation groups for three, four and five cluster models to determine which number of clusters showed the spatial pattern of occupational class properly. In Table 3.1 below are the profiles of the different cluster sizes, their "percentage of inertia explained by the classification relative to the total inertia" (T_c) and the resultant map (Waniez, 2003:178).

Table 3.1: HAC cluster comparisons

| No. of clusters | Group Profile | Map |
|--|---|-----|
| <p>3 groups</p> <p>Middle class occupations Clerical, sales and service workers Manual occupations</p> <p>$T_c = 86$</p> | <p style="text-align: center;">-G1+ -G2+ -G3+</p> | |
| <p>4 groups</p> <p>Middle class occupations Clerical, sales and service workers Manual occupations</p> <p>$T_c = 92$</p> | <p style="text-align: center;">-G1+ -G2+ -G3+ -G4+</p> | |
| <p>5 groups</p> <p>Middle class occupations Clerical, sales and service workers Manual occupations</p> <p>$T_c = 94$</p> | <p style="text-align: center;">-G1+ -G2+ -G3+ -G4+ -G5+</p> | |

I decided that four groups would be the most representative of the occupation distribution within sub-places, and across Cape Town. This was because the 4-group model contains both a group which is predominantly 'Manual occupations' (G1) and one which is predominantly 'Middle-class occupations' (G4). The remaining two groups differentiate between areas with a mixture of 'Middle-class occupations' and 'Clerical, sales and service workers' (G2) and those with a 'Manual occupations' and 'Clerical, sales and service workers' (G3) employment mix. The variation explained by the 4-group model is more than adequate; T_c should be greater than 70%.

The 3-group model only distinguishes predominantly 'Manual occupations' employment areas (G1), while G3 is very similar to the 4-group model G3, and G2 areas are also a mixture of 'Middle-class occupations' and 'Clerical, sales and service workers' employment. The 5-group model does not provide much greater insight into the spatial distribution of occupational class as seen in map and the fact that the groups produced do not differ much to the 4-group model.

The maps of each of the models also show that in the 3-group model all the former whites-only areas are in one group, while the 4-group model map shows a distinction between the occupational profiles of these areas. The spatial distinction provided by the 5-group model is not significant and it simply divides the areas in G3 in the 4-group model into two groups and therefore does not add much to the analysis of occupational class. Since we are essentially looking at where the middle-class population in Cape Town lives, the 4-group model is sufficient for discriminating between sub-places' occupational character.

In the following chapter, I discuss the profile of the 4-group model in terms of:

- the standard deviation from the mean,
- the percentage of the total of each variable in each group (horizontal),
- and the percentage of each variable in each group (vertical).

I also look at the number of sub-places and percentage population in each group. Thereafter, I discuss the spatial patterns of this multivariate occupational class analysis.

3.4.4 Univariate vs. multivariate occupation analysis

I compared the univariate and multivariate occupation analysis results in order to determine which is a better method of analysis. I did this by cross tabulating each sub-place's percentage middle-class occupation and HAC group.

University of Cape Town

3.5 Post-apartheid racial geography

In light of the location of service sector employment and the middle-class in mainly former white Group Areas, it is necessary to look at desegregation of former whites and coloureds-only areas to determine if decentralisation to middle-class suburbs is decreasing, reinforcing or increasing racial and class inequality in Cape Town.

The desegregation I have analysed here is that of residential desegregation which is why only residential sub-places are included in this analysis. Residential desegregation and the racial composition of suburbs developed post-1991 measure the change in the racial pattern of residence since the end of apartheid. This is important in understanding whether post-Fordist spatial manifestations such as decentralisation not only have class character but also a racial character in Cape Town.

Desegregation in Johannesburg has been analysed by Crankshaw (2005), Beavon (2004) and Prinsloo & Cloete (2002). Desegregation in Cape Town has not been as widely researched, possibly because it has not occurred to the same extent as in Johannesburg. Le Fleur (2005) and Myburgh (1996) analysed desegregation in parts of the city. Saff (1998) performed the only desegregation analysis of the whole of Cape Town by looking at inter-racial property transfers between 1990 and 1992. Such an analysis could not be repeated because property data no longer identifies the race of the buyer and seller, and the surnames of coloureds and whites, between which is the largest percentage of inter-racial transfers, cannot be distinguished. Therefore census race data was the best way to measure desegregation.

3.5.1 Group Area Classification

The Group Area classification of sub-places is discussed in section 3.2. I assumed the racial composition of Group Area-classified sub-places to be 100% of that race prior to 1991, when the Group Areas Act was repealed. I noted those areas which were declared Free Settlement Areas between 1988 and 1991.

3.5.2 Desegregation

I calculated the percentage of each race in each sub-place in order to compare areas. I mapped this data using ArcView for univariate racial analysis and performed multivariate racial composition analysis using Philcarto. The question of whether to exclude domestic workers and gardeners, which could affect the desegregation levels of former whites-only sub-places, is discussed below.

Live-in domestic workers and gardeners

I obtained two datasets for racial composition of sub-places from StatsSA, one showing race data for each sub-place for all residents, while the other excluded domestic workers and gardeners. This was in order to determine whether the extent of desegregation in former whites-only areas would be overestimated if these low-skilled live-in workers were included. In Crankshaw's (2005) analysis of former whites-only Johannesburg suburbs, domestic workers and gardeners were excluded because they made those areas appear more desegregated than they really were. This is because in middle-class areas in Johannesburg most properties have servants' rooms in their backyards. However, in many cases domestic workers were recorded as living in the main house. Therefore in order to show the true extent of desegregation of these areas, all domestic workers and gardeners were excluded rather than just excluding those living in backyard rooms. In Cape Town; however, the live-in domestic workers phenomenon is not as prominent as in Johannesburg and therefore, including them does not change the levels of desegregation of former whites-only areas in particular. A few sub-places do show a marked desegregation difference once domestic workers and gardeners are excluded, and they will be made mention of.

Table 3.2 shows the difference in the ArcView groups to which sub-places in both datasets were assigned on the basis of their percentage black population. ArcView assigned different natural class breaks for each dataset but in order to analyse the group difference due to the exclusion of domestic workers and gardeners, the group breaks for the race data for all residents will be used to classify both datasets. The group difference is due to the exclusion of domestic workers; therefore sub-places with a positive group difference are

those which have a lower percentage black population once domestic workers and gardeners are excluded and vice versa for sub-places with a negative group difference.

Only 19 (3%) of the 595 sub-places in the analysis would have been assigned to a lower group (lower percentage black) if domestic workers and gardeners were excluded. Sixteen of these sub-places are former white Group Areas while the remaining three are wealthy sub-places developed since the Group Areas Act was repealed. Only two of the former whites-only areas have a large black population, namely, Summer Greens (65%), and the former whites-only portion of Heathfield (34%). Even though the ArcView group into which they fall changes, the black percentage population difference is only -0.2% and -0.3%, respectively. This shows that the black population in these areas is probably employed in occupations that are more skilled. The sub-place with a group difference of two is Erinvale, which has a large live-in domestic worker and gardener population.

It is interesting that the exclusion of all domestic workers and gardeners, even those residing in poorer parts of the city, in general affects majority white areas rather than black, Cape Flats sub-places.

Table 3.2: ArcView group differences between two race datasets for all sub-places

| Group difference | Number of sub-places | Percentage of total |
|-------------------------|-----------------------------|----------------------------|
| 1 (lower % black) | 18 | 3.03 |
| -1 (higher % black) | 0 | 0.00 |
| 2 (lower % black) | 1 | 0.17 |
| Total | 19 | 3.19 |

Since the exclusion of domestic workers and gardeners mainly affects former white Group Areas, I also analysed the group differences between the datasets for these 315 sub-places alone. I calculated the differences for percentage coloured, black African and total black population for the former whites-only areas. As above, a positive group difference means that when excluding domestic workers and gardeners the percentage of the particular race decreases and vice versa for negative group differences.

Table 3.3: ArcView group differences between two race datasets for former white Group Areas

| Group difference | Number of sub-places | Percentage of total former whites-only sub-places |
|-----------------------------|----------------------|---|
| Coloured | | |
| 1 (lower % coloured) | 6 | 1.90 |
| -1 (higher % coloured) | 0 | 0.00 |
| Total | 6 | 1.90 |
| Black African | | |
| 1 (lower % black African) | 13 | 4.13 |
| -1 (higher % black African) | 0 | 0.00 |
| Total | 13 | 4.13 |
| Total black | | |
| 1 (lower % black) | 18 | 5.27 |
| -1 (higher % black) | 1 | 0.32 |
| Total | 19 | 6.03 |

Only six (2%) former whites-only sub-places have a lower percentage coloured population once domestic workers and gardeners are excluded. Thirteen (4%) of the sub-places show a lower percentage black African population. The total black population of these areas shows the greatest change as a result of exclusion. Eighteen (5%) have a lower percentage black population whereas one, Camphill Village in Atlantis, shows a higher percentage; however, this is only 0.2% greater when the occupation group is excluded and must be due to the changing proportions of other races.

Erinvale, a wealthy golfing estate in the Helderberg area, decreases its black population by 25% once this occupation group is removed. The second largest difference, Bantry Bay, is only 8%. Only 35 sub-places show a difference greater than 3%.

Therefore in light of the small number of sub-places which are affected by the removal of these occupations, both in terms of the percentage difference and ArcView group difference, I used the dataset including all residents to look at the question of desegregation in both former whites and coloureds-only sub-places. Those former whites-only and post-apartheid sub-places, such as Erinvale, which stood out in terms of the difference will be noted so as not to overestimate the extent of desegregation in those areas.

Desegregation of former white Group Areas

In light of the above Group Area classifications, I created a separate shapefile file of the 315 former white Group Areas in order to assess the extent of their post-apartheid desegregation. I used a graduated colour scheme to display these areas by their percentage coloured and black African populations separately, using the complete dataset.

Because I used natural class breaks the group breaks differ for the percentage coloured and black African residents. The group breaks for the black African residents in former whites-only areas are far lower than those of the percentage coloured residents because there are far fewer black Africans than coloureds in these areas. I discussed the spatial patterns and concentrations of the desegregation groups, as well as the distribution of the sub-places across the four groups, for both analyses. To look at the relationship between the location of the middle class and desegregation, I cross-tabulated sub-places' percentage middle class against their percentage coloured and black African populations for former whites-only areas. I focussed on these areas in particular because the former whites-only areas are where decentralised service sector employment is growing.

Initially I was also going to display the percentage total black population in each sub-place; however, coloureds make up a 68% of the total black population in former whites-only suburbs of Cape Town; and therefore coloured and black group breaks are very similar. Discussing the racial patterns of the black population was therefore then too repetitive and I excluded it as a result.

Desegregation of former coloured Group Areas

As above, I singled out the 180 former coloureds-only areas in order to assess their residential desegregation. Included in this group are the one Malay area, Schotsche Kloof, the two apartheid mixed areas, Salt River and Woodstock, and the two south-east areas which were developed in 1989 designated to house coloureds and black Africans, Roosendal and Voorbrug. I only displayed percentage black African in order to determine whether former coloureds-only areas, which were on the whole wealthier than former black African areas, are the destination of those upwardly mobile black Africans. I singled out the

sub-places with notable desegregation and showed the distribution of the 180 sub-places across the four groups in a table.

Multivariate racial composition

Using Philcarto to analyse and map racial composition is possibly superior to using ArcView because it performs statistical analyses of the raw data and one can perform multivariate analyses. Unlike with ArcView, I was able to map the racial composition of former white and coloured Group Areas, post-1991 developed areas and all residential sub-places. Post-1991 sub-places differ greatly from one another in their racial composition and therefore it would not have been possible to analyse them univariately. Initially, I was going to look at desegregation of sub-places in Philcarto using both the HAC method of cluster analysis described above, and triangular diagrams; however, the map which resulted from the HAC analysis followed the Group Area racial patterns very closely and added nothing to the analysis. Therefore I only used the triangular diagrams method.

Triangular diagrams

The method I chose to determine the racial mixing of each sub-place was triangular diagrams. I assigned the percentage of each of three races to the three sides of the triangle. The position of each sub-place (point) in the triangle reflects its racial composition. Since only three races could be used to determine racial mixing, I excluded Indian or Asian because only 1.6% of Cape Town's population fall into that racial group and only four sub-places were classified Indian under apartheid. I used the percentage of white, coloured and black Africans. Firstly, I mapped the former white Group Areas according to their racial composition. The former coloureds-only areas followed and, thirdly, post-1991 developed areas were mapped. The final racial analysis and map was of all 595 residential sub-places.

Philcarto geometrically assigns each sub-place (point) to one of 12 groups depending on the sub-place's position in the triangle, which is dictated by its racial percentage composition. The geometrical partitioning of the triangle occurs as shown (Figure 3.5) (Waniez, 2003).

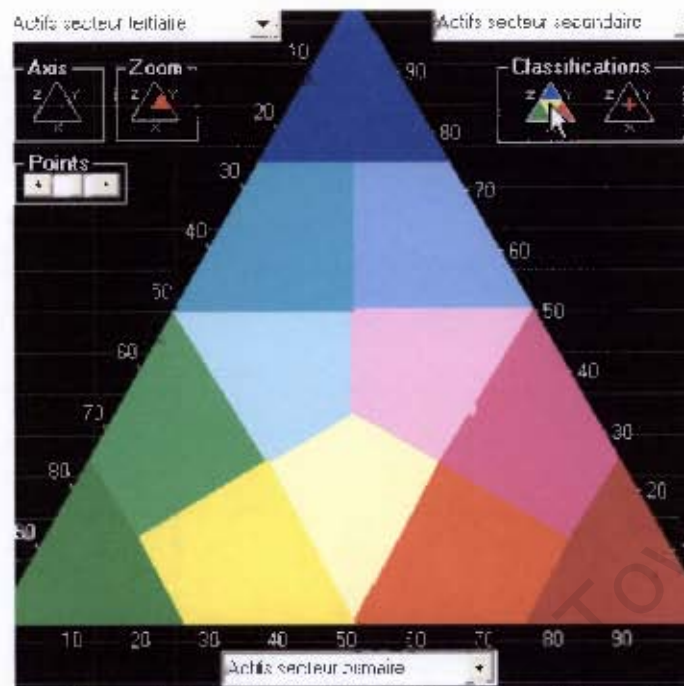


Figure 3.5: Geometric partitioning of triangle

This geometric classification did not always display the actual racial patterns of Cape Town and therefore I manually altered the classifications of some sub-places within the triangle. To do this I used my local knowledge of some areas, and the natural class breaks created by ArcView for percentage 'coloured' and 'black African'. I also observed the spatial differences on the map output that resulted from changing the classification of sub-places. The maps of former white and coloured Group Areas and post-1991 developed sub-places also informed the classification of sub-places in the final map. For instance, the separate analyses allowed me to distinguish which of those sub-places with a high percentage 'coloured' and quite low percentage 'white' racial composition were former whites-only areas with high coloured desegregation, post-1991 developed areas, or former coloureds-only areas into which some whites had moved since the end of apartheid. The triangular diagrams and resultant maps are shown in the following chapter.

Former white Group Areas

Philcarto's geometric classification of the triangular diagram resulted in 10 groups for the 315 former whites-only areas. I reclassified some sub-places and thereby reduced the

groups to six. I discussed each group in terms of its racial character, which sub-places were included and their spatial patterns in the city.

Former coloured Group Areas

Philcarto's geometric classification of the triangular diagram resulted in five groups for the 180 former coloureds-only suburbs. Because most of these sub-places were more than 80% coloured I only reclassified a few sub-places and therefore this only reduced the number of groups to four. I discussed each of the four groups' racial compositions and their spatial patterns.

Post-1991 developed sub-places

This racial composition analysis of the 72 post-1991 developed sub-places is the only analysis of these areas in this thesis. It is important to analyse their racial character to see whether they have the same racial composition as their group-area classified neighbours or whether they have attracted residents of other races. The geometric classification of the triangular diagram resulted in eight groups for these areas and, after I had reclassified some areas, five groups, representing greatly differing racial compositions, remained.

All residential sub-places

Finally, I analysed all 595 residential sub-places together. The classifications of the separate groupings above helped inform the classifications I made when all sub-places were analysed together and I reduced the 11 groups to nine. Since majority black African sub-places are more densely populated than majority white areas, I also tabulated the number and percentage of sub-places and population in each of the nine groups. I also looked at the box and whisker plots of the four races' distributions across the groups and the number of people in the largest sub-place for each race. This enabled me to see into which groups the Indian/Asian race fell.

Univariate vs. multivariate racial analysis

The multiracial analysis and maps provide a 3-dimensional understanding of the racial patterns in Cape Town which is more comprehensive than the percentage analysis of a

single race within a group of specific apartheid Group Areas. The results of the univariate and multivariate desegregation analyses could not be cross-tabulated as with the univariate and multivariate occupational class analysis because the univariate racial analysis only looked at a specific group of sub-places rather than all residential sub-places. A multivariate analysis tool is necessary for analysing the racial composition of suburbs developed after 1991 because they differ greatly.

3.6 The relationship between occupational spatial patterns and post-apartheid racial patterns

I previously mentioned cross-tabulating percentage middle class and desegregation groups for former white areas. I have also cross-tabulated sub-places' multivariate racial analysis group with their HAC occupational group to look at the relationship between class and race. I also looked at the correlation between both sub-places' percentage middle class and percentage black population and the raw counts for these variables.

3.7 Major transport routes

The maps and discussion of spatial patterns require the location of railways and major roads to understand how the lack of both the public transport connections to the growing decentralised locations of post-Fordist employment are disadvantaging the poor, black population in the south-east. These structures were also used as Group Area boundaries and therefore many spatial patterns follow the railway line arc in particular. The location of railway lines and major roads is shown in Figures 3.6 and 3.7 respectively and will be on several of the maps produced in chapter 4.

Most railway lines and major roads are radial and feed the CBD. This is very important as it shows that public transport from the south-east to the decentralised service sector employment nodes in the south-west and northern suburbs is lacking.

The railway arc to which I often refer when discussing class and racial spatial patterns is the arc created by the Southern suburbs line and Cape Flats line in the west and the Cape Town to Bellville line in the north. Within this arc lie most former coloureds and black Africans-only areas.

Figure 3.6: The location of major railway lines

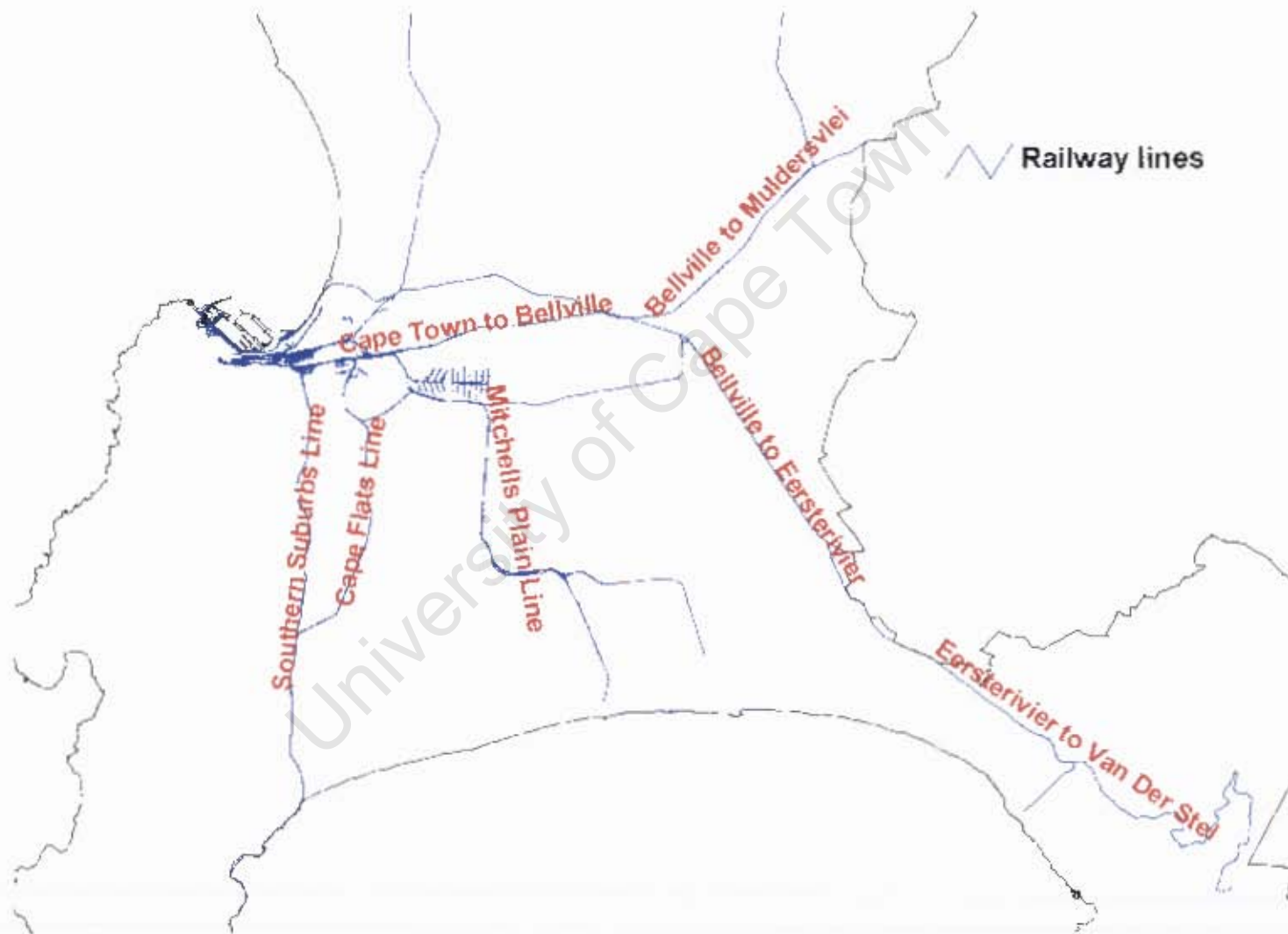
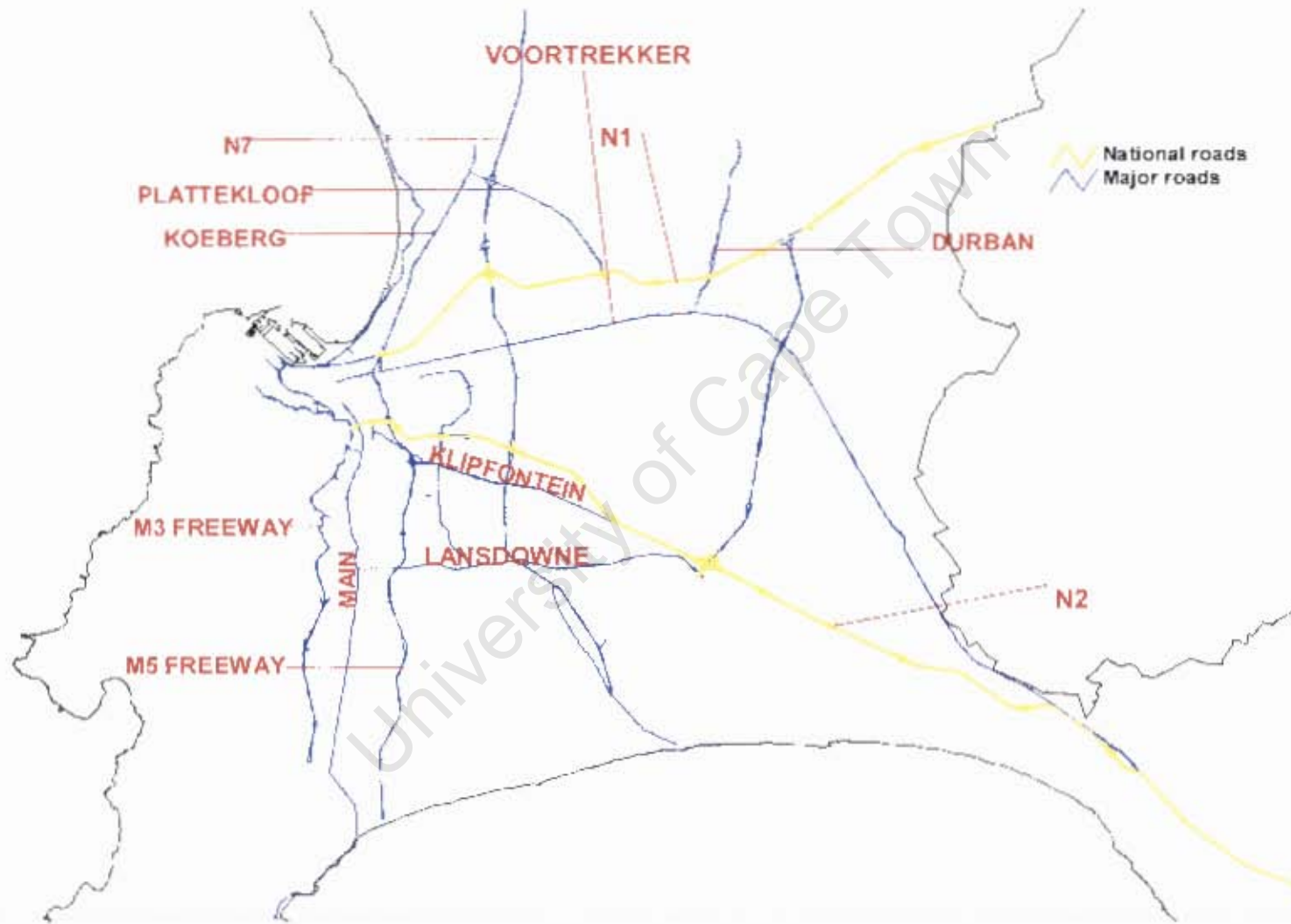


Figure 3.7: The location of major roads



3.8 Concluding remarks

Hopefully the various analytical tools and methods discussed in this chapter will be able to answer sufficiently the questions raised in chapter 1 and determine the racial and class spatial patterns in post-apartheid Cape Town in relation to the location of decentralised and CBD service sector employment.

University of Cape Town

CHAPTER 4: RESULTS AND DISCUSSION

This chapter seeks to answer the questions posed in the introduction. Firstly, I discuss to what extent, and in what form, decentralisation occurs in Cape Town. Secondly, I look at the spatial distribution of the middle-class and the apartheid Group Area classifications. Thirdly, in light of these spatial patterns, I analyse the post-apartheid desegregation of former white and coloured areas. Fourthly, I discuss evidence for the specific post-Fordist spatial phenomena of the excluded ghetto and totalising suburb and I discuss whether these forms are reinforcing apartheid racial spatial divides. All the above elements contribute to the final discussion of the impact that the post-Fordist rise of service sector business and the consequent spatial decentralisation of employment has had on racial inequality in post-apartheid Cape Town.

Post-Fordism is a global force; however, the impact of such forces is always mediated by various local conditions, which were mentioned in chapter 2. These conditions include the legacy of urban planning, which is very important for South African cities because they have an apartheid history of 'separate development'. Therefore in Cape Town the shift to service sector-dominated economy has produced a spatial order whereby decentralised service sector employment is located in the middle-class northern and south-western suburbs. However, this spatial order is mediated by the legacy of the apartheid spatial order and the areas of middle-class concentration are still majority white. However, in-migration of the coloured middle-class is occurring into the lower middle-class suburbs, usually adjacent to former coloured Group Areas.

4.1 The post-Fordist spatial order in Cape Town

Post-Fordism is associated with the growth of service sector employment and the decline of manufacturing. Manufacturing in Cape Town between 1946 and 1980 accounted for 25% to 28% of employment; however, the employment growth in this sector began declining after 1970, and after 1985 the growth trend reversed. On the other hand, between 1985 and 2001 the service sector grew: community and personal services grew by an average of 1.5% per annum, commerce by 2.8% and Finance, Insurance, Real Estate and Business services

(FIRE) by 5.4%. In 1946, FIRE only accounted for 4% of employment in Cape Town, but in 2001, it accounted for 15% (Borel-Saladin, 2006).

This change in the structure of employment has resulted in a changed class structure as the demand for semi-skilled workers has decreased. Borel-Saladin (2006) shows that in Cape Town professionalisation has occurred, because between 1980 and 2001 highly skilled employment has increased by far more than unskilled employment. The percentage employed in semi-skilled, white-collar work has remained the same, while the percentage in semi-skilled, blue collar work decreased substantially due to the decline in manufacturing. Sassen argues that the decline of manufacturing meant that the semi-skilled, middle-income class began shrinking and employment growth became more polarised as the middle-class and unskilled employment grew. Hamnett argues instead that, outside of the United States, professionalisation has occurred and that highly skilled employment has grown while unskilled jobs have not increased at the same rate (Borel-Saladin, 2006; Hamnett, 1994). Therefore in Cape Town it seems that Hamnett's theory is relevant. Between 1980 and 2001 commerce and FIRE sectors have increased their percentage highly skilled occupations. Manufacturing's percentage high skilled employment also increased, but the percentage semi-skilled, manual labour in this sector decreased substantially. The group that has been most affected by this manufacturing decline is coloured males. By 2001 community and personal services was the largest employer of coloureds. The majority of black Africans, on the other hand only, came to Cape Town after 1985 and therefore are not employed in manufacturing but in unskilled and semi-skilled, manual service occupations, as they lack the tertiary education and skills for the growing skilled employment (Borel-Saladin, 2006).

The question, which then arises, is: what is the spatial manifestation of this growth in service sector employment and professionalisation in Cape Town; and is the racial character of these concentrations of employment eroding or reinforcing apartheid racial spatial divisions? As mentioned in chapter 2, Marcuse and van Kempen (2002) identify various separate spatial phenomena in the city which in the post-Fordist era have become increasingly walled and totalised. Where in Cape Town do these various spatial phenomena

occur? To what extent are they walled and totalised? What is their racial composition? How are these post-Fordist spatial forms affecting racial spatial inequality?

Post-Fordist Johannesburg has been characterised by the movement of the service sector to Sandton, which has become a totalising suburb in the north with many gated communities (Crankshaw, 2005). Turok and Watson (2001) have suggested that a similar pattern of service sector decentralisation has occurred toward the northern and western suburbs of Cape Town, and that polarised development is occurring along racial and class lines. There has been a movement of both retail and offices to established suburban commercial centres and new mixed-use parks along freeways. Between 1995 and 2000 there was five times the amount of new office development in decentralised nodes compared to the CBD and there were twice as many development projects in north as in the southwest (Turok & Watson, 2001). These new developments offer the growing service sector the aesthetics, space, parking, active management, modern design and infrastructure, freeway access and security which they demand. They contrast with the crime, grime and lack of parking in the CBD, at least prior to 2004 when revitalisation began (Turok, 2001).

The other market forces are the pull of high-income households in the north and south-west which are the market for retail, consumer and personal services and a professional labour force. During the 1990s there was a disproportionate development of middle and high income housing in the northern suburbs. The growth in demand for middle-class housing is due to the fact that this nexus offers cheaper land than the south-western suburbs, which has very limited space for development; and that companies have relocated there. Since these northern suburbs house the professional and managerial labour force, high-skill service sector businesses have moved to these areas to decrease the commuting for employees and because they desire a nearby middle-class workforce. This shift can be seen in the conversion of houses to office use, prevalent along main routes in this area, as well as all the new developments constructed in the past few years (Turok, 2001; Koblitz, 2006a).

Turok (2001) also argues that within decentralisation is the process of differentiation whereby retail, office and industrial centres are focussed on particular market segments,

dictated by class and race. For instance, the type of goods offered at shopping centres in Tygervalley are aimed at the nearby wealthy, mainly white population, while such centres in the southern parts of the northern suburbs of Bellville, Parow and Goodwood are aimed at lower income, mainly black customers. Therefore this market-driven process is increasing social and spatial segregation through everyday retail activities.

On the other hand, the south-east sector has experienced very limited private investment because during the 1970s and 1980s when decentralisation of work began, the apartheid government prevented service-sector businesses, which were white-owned, from locating on the Cape Flats (Cooper *et. al.*, 1985:211). The government only permitted white-owned manufacturing in the south-east and industrial land was often used as a racial buffer zone on the edge of the Cape Flats. Therefore with the decline of manufacturing and the subsequent loss of employment it was most keenly felt by the black residents of the south-east who lacked the skills for service sector work. After apartheid ended, one would have expected the cheapness of land in such an area to make it attractive to developers of decentralised business nodes, but this has not occurred for various reasons. Firstly, the lack of investment in roads, drainage and infrastructure in the area during apartheid has meant that service sector business, which requires high technology and amenity in an office location, simply invested in the areas in which this infrastructure is already in place i.e. the former white suburbs. The only private investments which have occurred have been in Athlone, along Klipfontein Road, the western end of the Wetton-Lansdowne corridor, and limited retail development in Khayelitsha and Mitchell's Plain Town Centre. Secondly, financial institutions are not in favour of providing financial backing for private developments in the south-east. Thirdly, the area has a poor image due to high unemployment and crime rates and therefore businesses fear for their employees, vehicles and premises. Fourthly, decentralising service sector businesses require a skilled labour force from which to draw and the south-east sector residents have lower education and skills levels than in the northern and south-western suburbs, as will be shown in section 4.2. Finally, the residents of the south-east are of lower-income and therefore are not likely to be a good market for such services compared to the wealthier, former whites-only areas (Turok & Watson, 2001; City of Cape Town, 2003).

Therefore, while the post-Fordist spatial order is driven by global processes and not by apartheid racial policies, because the post-Fordist era began during apartheid the spatial effects were overlaid on apartheid racial geography. Moreover, since the end of apartheid, decentralised business has grown in the nodes where it originated, for the market-driven reasons stated above. I would have expected post-apartheid local government actively to attempt to redistribute private sector development to benefit the predominantly coloured and black African areas of the south-east. However, the location of major development projects has instead been aided by relaxed planning practices as, prior to 2000 when the unicity came into being, the separate municipalities felt the pressure to increase their tax base and competed with one another for private sector development. Therefore market-driven processes have trumped government redistribution plans. The Metropolitan Spatial Development Framework (MSDF) was drawn up with aims of compacting the city and encouraging investment in new nodes, such as Philippi on the Cape Flats. However, market forces have prevailed and development sprawl has continued in the former white areas of the south-west, northern suburbs and the Helderberg basin (Turok & Watson, 2001; Turok, 2001)

Government's investment in the south-east has been focussed on low-income housing, infrastructure and services, and not on encouraging business activities. Because the location of public housing still follows apartheid racial patterns, the post-Fordist spatial order is having racially unequal consequences due to the distance between service sector job opportunities and the housing of the poor, black population. Therefore, while the south-east sector was already a classic ghetto for the black population during apartheid, owing to the post-Fordist forces mentioned above and post-apartheid government policies which have reinforced this spatial order, it is now an excluded ghetto of the underclass. This class cannot access employment in the mainstream economy due to the structural factors mentioned by Seekings & Nattrass (2005) as well as the spatial form of the city.

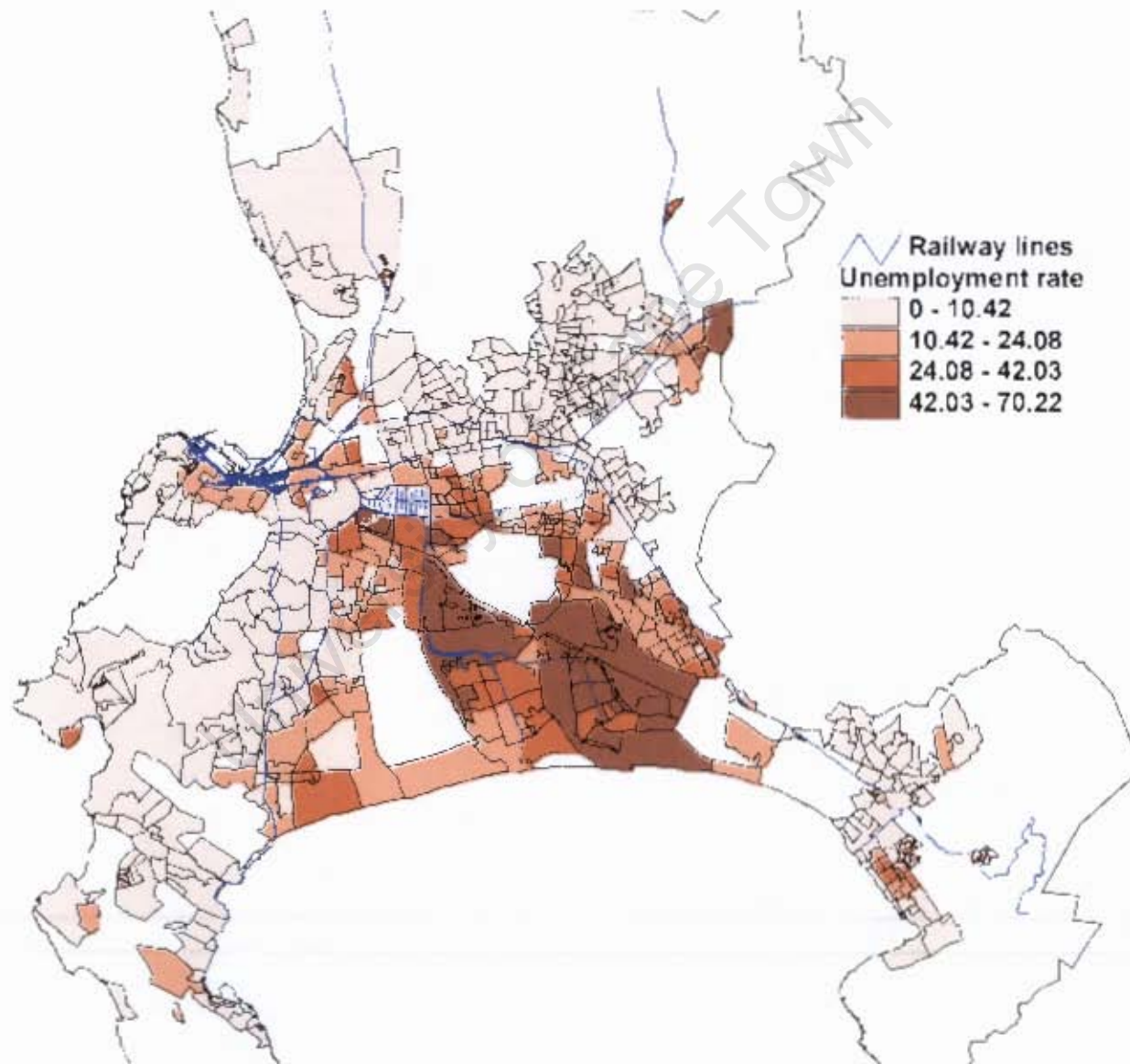
In the US the excluded ghetto in the inner city houses the African-American underclass who cannot access the skilled occupations in the inner city or the unskilled occupations in the decentralised middle-class suburbs. In Cape Town, the black population were forcibly

removed from the inner city by apartheid authorities. Therefore the apartheid racial ghetto was located on the periphery. The residents of this ghetto today also suffer from a skills and spatial mismatch because although post-Fordist decentralisation has occurred, private sector development in the south-east has been minimal. Pearce-Oroz (2005:111) identifies urban spatial segregation as “unequal access to either public networks of services or private networks of the marketplace”. In the south-east sector, although post-apartheid local government has provided most residents with services, they are still excluded from marketplace networks and thus are spatially segregated.

This excluded ghetto in the south-east has implications for post-apartheid racial spatial inequality because this region is an ‘ethclass’ ghetto (Marcuse, 2002). The south-east is ethnically made up of the coloured and black African races and the occupational class composition of the area is manual and clerical, sales and service workers, as will be shown in section 4.2. One of the reasons for the lack of skilled residents in the south-east is that apartheid education policies discriminated against the black population in terms of education subsidies and the quality of teaching offered; within that group, the black African population was the most disadvantaged. Their education only prepared them for manual skilled or semi-skilled work, which is no longer in high demand (Selod & Zenou, 2001). Moreover, employment in the post-Fordist era requires tertiary education and skill levels for employment and therefore the black working class population in the south-east, suffer from a skills mismatch.

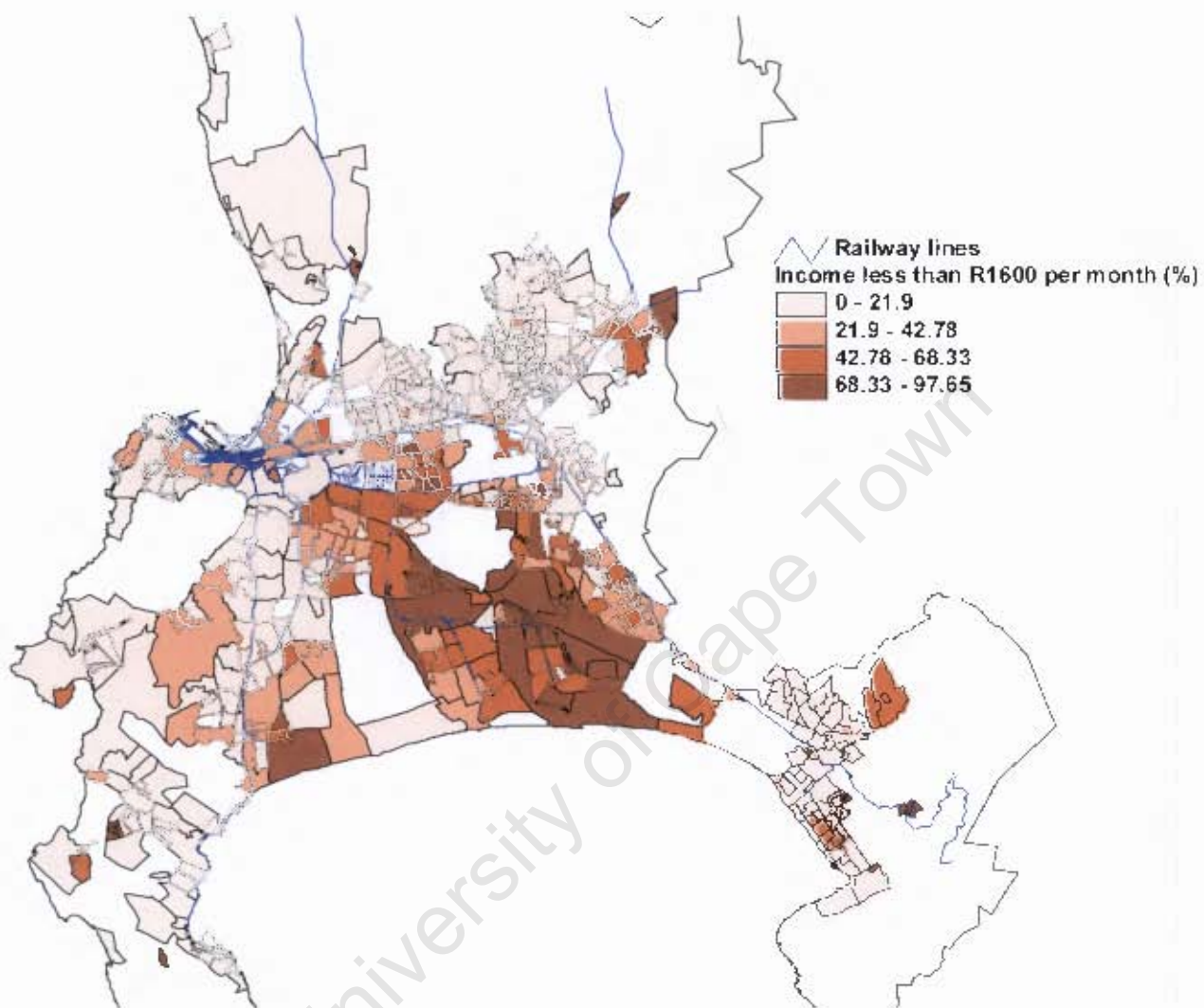
There has also been a spatial mismatch because with the shrinkage of semi-skilled, manufacturing employment in the city, the working class have had to turn to unskilled employment in the service sector, which is increasingly concentrated in the south-western and northern suburbs. The professionalisation of occupations in Cape Town since 1980 has also meant that unskilled service sector jobs, which the excluded ghetto residents could have done, have not grown as rapidly as highly skilled jobs (Borel-Saladin, 2006). These decentralised employment locations, in middle-class areas, are not easily accessible to the underclass in the excluded ghetto of the south-east sector. Therefore the south-east sector is where the unemployed in Cape Town are concentrated (Figure 4.1).

Figure 4.1: Unemployment rate by sub-place



The sub-places included in the high unemployment rate groups are those in the manual occupation class and with low tertiary education levels. Mitchell's Plain has distinctly lower unemployment rates than Khayelitsha. Most Khayelitsha sub-places, as well as other former black African Group Areas and sub-places developed adjacent to these after 1991, have an unemployment rate higher than 68%. Khayelitsha residents, who make up 11% of Cape Town's population, suffer from structural unemployment as they lack both marketable skills and the education and training opportunities to gain them (Newmarch, 2006). It appears that majority black African areas have higher unemployment than majority coloured sub-places. This is as I expected, as many black Africans are poor, illiterate, unskilled migrants from outside the Western Cape, whereas the coloured population originates in Cape Town, has therefore been educated here and has more connections, which is vitally important for obtaining work (Borel-Saladin, 2006). In fact, in 2000, 58% of South Africans obtained their jobs through social capital; however, the largely migrant black African population in Cape Town has far less social capital than the coloured population. The coloured residents were educated in the city and have many kinship networks. Seekings & Nattrass (2005) identify six factors associated with disadvantage in the labour market: lack of skills; little social capital in the household or from friends and relations; lack of financial capital for self-employment; the distant location of employment opportunities, and the duration of unemployment. These factors characterise the underclass of the south-east sector and the black African population is at a greater disadvantage.

Figure 4.2: Percentage population with monthly income less than R1600



The high levels of unemployment in the south-east also mean poverty levels are high (Figure 4.2). Yet again, there is a distinction between coloured Mitchell's Plain and the black African areas of Khayelitsha, Mfuleni, Nyanga, Philippi, Crossroads and Guguletu, which have a greater percentage residents living in poverty. When the south-east sub-places unemployment rate and percentage residents living in poverty groups are compared, a sub-place often has a high unemployment rate but is in the lower poverty level group. These differences between unemployment and poverty levels could be due to the fact that the informal sector is one of the largest employers in this area (City of Cape Town, 2003).

Therefore while some residents may consider themselves unemployed they are indeed earning an income.

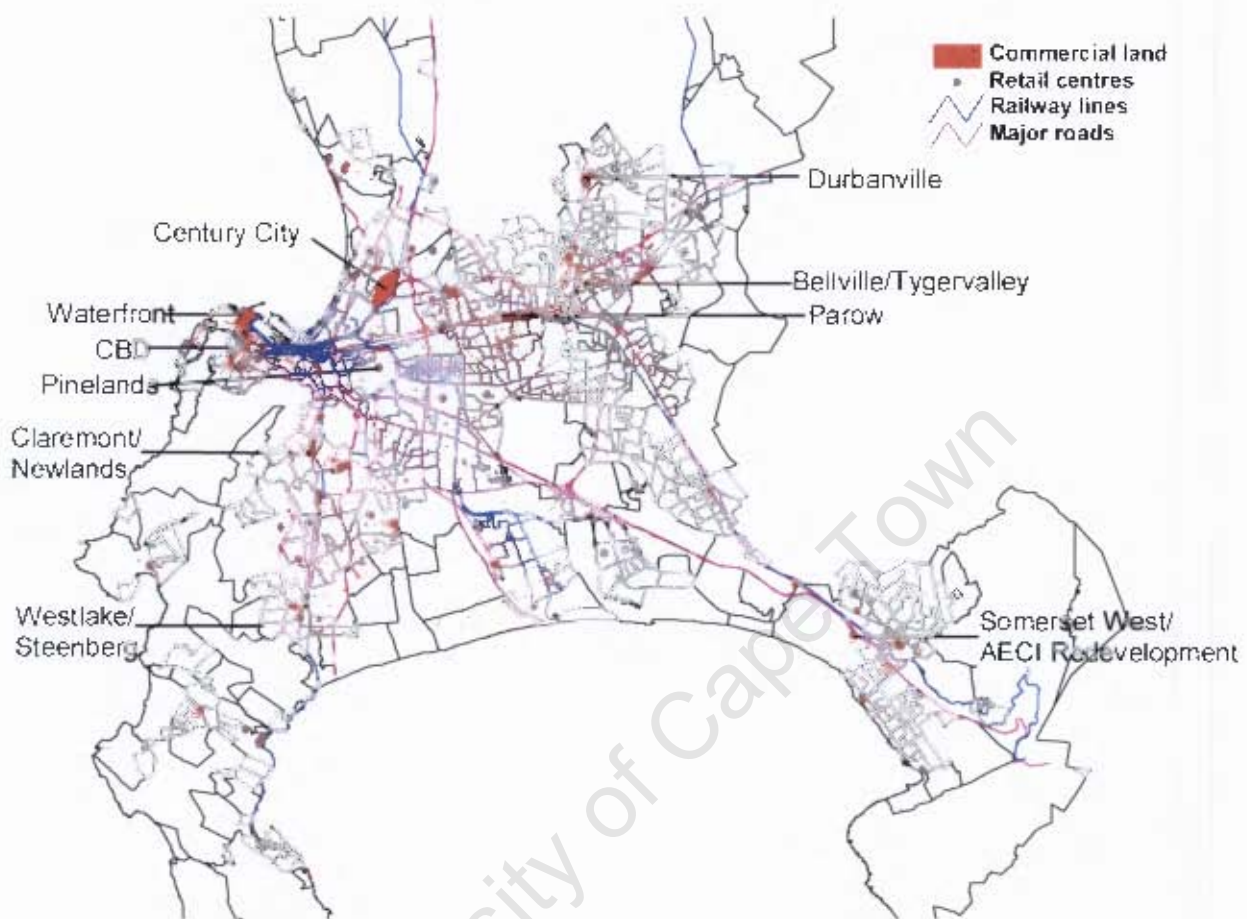
All these factors show that the ethnically black, poor residents of the south-east sector are economically, socially and spatially excluded from the mainstream economy and society, which does not profit from their existence because much of their economy is internal. If the excluded ghetto had been in the inner city, as in the US, the residents would have been able to access employment; however, apartheid officials wanted the black population removed to the periphery, far from white residents. For reasons discussed previously, private sector business has decentralised to the middle-class periphery rather than that of the south-east and post-apartheid public investment in public housing and social facilities in the south-east has reinforced this racial spatial divide (Turok, 2001). The location and character of this excluded ghetto definitely reinforces apartheid racial spatial divisions.

4.1.1 Location of commercial and industrial land

In order to analyse where employment is located and to what extent decentralisation and totalisation of areas has occurred in Cape Town, I firstly discuss maps showing the 2002 commercial and industrial land-use in Cape Town. I then discuss data comparing the CBD and various nodes, and finally, specific developments occurring at various nodes.

In order to further analyse the location of employment in Cape Town, the City's commercial and industrial land-use data from 2002 is shown in maps below. Figure 4.3 shows the location of commercial land use and retail centres, and Figure 4.4 shows the location of industrial land in Cape Town: both highlight particular nodes. The many commercial developments which have occurred in the northern suburbs since 2002 are unfortunately not shown. Some commercial land is retail centres; however, the remainder are offices and stand-alone retail land.

Figure 4.3: Commercial land use and retail centres in Cape Town, 2002

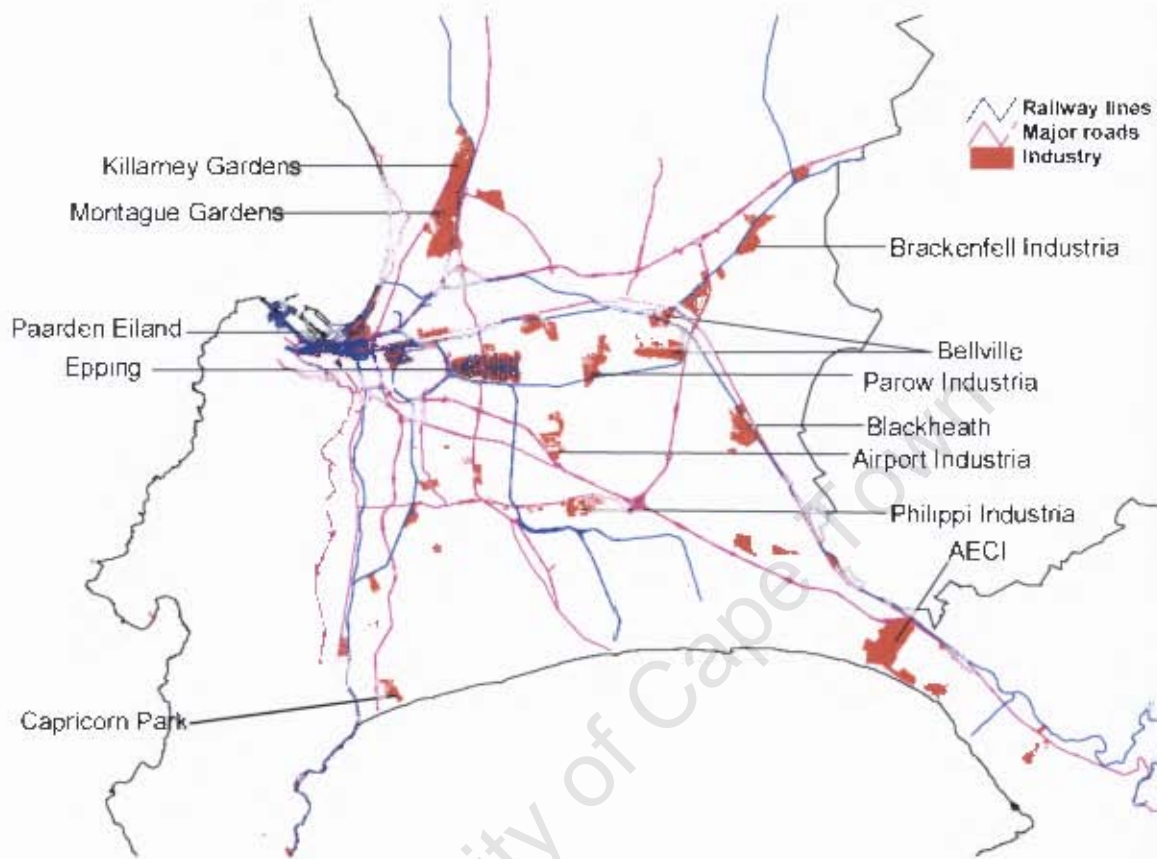


Source: City of Cape Town, 2002

The two large commercial areas identifiable on the map are the CBD and Century City. The spatial corridors which stand out are the retail centres along the Main Road and Voortrekker Road axes, which were apartheid-era developments. Since apartheid they have grown due to increasing decentralization of retail and service sector business, in particular, the Main Road corridor and the Claremont node. The Main Road corridor has distinctive areas: the area which stretches from Woodstock (an inner city suburb) to just before Rondebosch (slightly north of Newlands) has a concentration of ribbon-like retail and commercial activity but not shopping centres; while from Rondebosch to Retreat there are several major shopping centres. Aside from these historic corridors, the majority of commercial land use and retail centres is located in the northern suburbs. There is a noticeable concentration

along Durban Road, north of Voortrekker Road, as well as at the Durbanville town centre. The Main Road and Voortrekker Road axes are parallel to the railway line which was one of the boundaries used to separate white and black Group Areas. Therefore it is interesting to note that within the arc created by these railway lines there are only a few retail centres and hardly any other types of commerce. The Khayelitsha and Mitchells Plain areas stand out as areas with limited commerce and they are isolated from commerce in other areas. Further to the south-east, the Helderberg basin shows another commercial concentration, although not as significant as in the northern suburbs. However, this is 2002 data and since then extensive redevelopment of AECI land in Somerset West has occurred and more residential, office and retail land has been developed. The private sector commercial development in this area shows how investment has leap-frogged the Cape Flats in favour of wealthier, former white areas. The new commercial developments surrounding the Tygervalley Centre, which have occurred in the last three to five years, are also not shown on this map and therefore the extent of commercial land in the northern suburbs is greater than displayed on the map.

Figure 4.4: Industrial land use in Cape Town, 2002



Source: City of Cape Town, 2002

Unlike commercial land, there is a substantial amount of industrial land within the railway lines arc, although, yet again, not in the Mitchell's Plain and Khayelitsha area. The largest concentrations of industrial areas are Epping, AECI in Somerset West and Montague and Killarney Gardens in Blaauwberg. The established industrial areas are AECI, Paarden Eiland, Epping, Ndabeni, Parow Industria, Elsies River, Bellville South and Blackheath. All, except Paarden Eiland, lie below the Cape Town-Bellville railway line and they were buffers between the white Group Areas above the line and the coloured Group Areas below. The industrial areas all lie along the railway line due to the reliance of business on rail transport at the time of their construction. However, road and air transport is now more important and the new, growing industrial areas of Montague Gardens and Killarney Gardens are located near the highways in the northern suburbs, and the smaller Airport

Industria on the Cape Flats is next to the international airport and national road. The wealthy, south-western suburbs and the Tygerberg area above the N1 highway have hardly any industrial land; they are primarily residential with some offices and retail.

4.1.2 Decentralisation and various employment nodes

The growth of service sector employment does result in decentralisation of employment due to the differing demands of such businesses, mentioned previously, and the growth of communication technologies in the last few decades. This spatial manifestation has occurred in cities worldwide and the location of this decentralisation has been to middle-class areas.

As Turok & Watson (2001) mentioned, in recent years there has been physical expansion of office and retail space in decentralised nodes in Cape Town, particularly in the north. Except for the Waterfront, current public and private commercial developments are decentralised. In 1999, the number of major development proposals was seven times greater in decentralised areas than in the city centre. The majority of proposals in the whole city were for residential and mixed land-use, which is what many new decentralised developments have been (Cape Metropolitan Council, 2000). Decentralisation is possible because 90% of firms in Cape Town are small, very small or micro and therefore can be run from homes or cheaper decentralised locations. On the larger scale, a recent development trend has been that of mixed-use 'mega' projects which require large tracts of land and good freeway access. Areas which have been in demand for new office developments are the Waterfront; Claremont for finance; and Century City and Tygervalley/Durbanville for Information Technology and Management services (City of Cape Town, 2003; Watson, 2000). However, decentralisation has not occurred to the same extent as in Johannesburg, which has the Sandton CBD, because Cape Town's Central Business District (CBD) is still functioning and an employment hub.

The CBD has the most available rentable space for all office grades; however, decentralised nodes combined have more office space and their vacancies are lower. Bellville is the leading decentralised node in terms of rentable space and it has the greatest amount of

premier grade office space. The demand for office space, as measured by market rentals, was higher in decentralised nodes than the CBD until 2004, when confidence in the CBD increased due to the Central City Improvement; and the CBD's rentable office space decreased dramatically with the conversion of offices to apartments and of office space to other grades, which raised rentals due to scarcity (Smith, 2006). The residential conversion of office space in the CBD began in 2000 and in 2005, according to Cattell (2005), there were 30 such conversions planned or underway. Such residential conversions have also occurred in Claremont which until recently had a surplus of office space (Business Day, 2005a). Therefore the market rentals and increased figures for office take-up in the CBD need to be understood in light of this development (Smith, 2006).

Smith's (2006) data on the CBD and various nodes show that the CBD is a functioning service sector business centre despite increases in decentralisation. Possible reasons for the CBD's continued attractiveness to such businesses is, firstly, due to the demand for office space at the neighbouring Waterfront, a post-Fordist 'soft location'. In fact, it is debatable whether the Waterfront should be considered a separate node, and it is certainly not a decentralised node. Its growing demand will surely have positive effects on the office demand in the CBD and the Waterfront's attractiveness indicates that the city centre is becoming more of a service sector centre, particularly as gentrification increases (Turok, 2001). Secondly, the work of the Central City Improvement District, which has attempted to tackle crime and grime, has made the CBD more attractive, and, thirdly, the inner city and surrounding neighbourhoods house a wealthy, skilled labour force from which service sector businesses can draw. In fact, the recent residential conversions should stimulate retail growth in response to this growing high-earning residential market (Business Day, 2004a; 2005a). Fourthly, the CBD is aesthetically pleasing: its physical location with the proximity of the mountain and sea has made it a unique, picturesque location to both live and work in and the proximity of the harbour is useful for some businesses. In fact, according to Koblitz (2006b), the CBD's location is irreplaceable and therefore the creation of another CBD, as occurred at Sandton in Johannesburg, is unlikely to occur in Cape Town. Fifthly, the fact that the central city also has some of South Africa's major tourist attractions, including the Waterfront and Table Mountain, and is therefore visited by many

foreigners gives the CBD a cosmopolitan atmosphere and means that the deterioration and replacement of the CBD would not be tolerated by the tourism industry. However, the CBD is not without its problems, namely, the lack of both business and public parking, the geographically small and limited area of the CBD, and the slow release of prime, under-utilised land, owned by the City and other public institutions, for development (Koblitz, 2006b).

The decentralised nodes or regions of the Tygerberg, Blaauwberg, Century City, the Helderberg basin, south-western suburbs and south-east sector will now be discussed in more detail.

The Tygerberg

The Tygerberg region became a municipality in 1996 when the municipalities of Bellville, Durbanville, Goodwood, Parow, Khayelitsha and Mfuleni, north east of Khayelitsha, were amalgamated. It is now a sub-council in the City of Cape Town municipality (Cleary, 2005). However, here I am not referring to the Tygerberg as this geographic region: this term is being used instead to denote the areas of Parow, Bellville and Durbanville (Myburgh, 1998).

Post-Second World War commercial development in the Tygerberg was concentrated along Voortrekker Road in Parow, and Bellville and Main Street in Durbanville. Thereafter another development ribbon began along Durban Road, north of Voortrekker Road, and in the early 1990s this was the site of new office development as old houses were renovated or demolished for conversion to offices. The western side of Durban Road, north of the N1 highway, as well as further north along Durban Road, was where several office parks were built at the beginning of the 1990s. With an increasingly suburban population residing in the Tygerberg after the 1960s, planned shopping centres were also built as business nodes. The Sanlam Centre in Parow was constructed in 1972 and subsequently expanded; and Tygervalley Centre was opened in 1985, extended in 1992 and revamped in 2002. This site was chosen for its accessibility from major roads and its aim was to attract the large, growing population of affluent motorised residents in the expanding Tygerberg fringe.

According to a figure showing land-use in the Tygerberg in 1992, there is very limited business above the N1. Most land is residential, with a few small business areas between the N1 and Old Oak Road, and around the Durbanville centre. In the area today, commercial activity occurs on either side of Durban Road and the parallel Willie van Schoor Drive until Door de Kraal Road in the north. Between this road and the centre of Durbanville is mainly residential land (Myburgh, 1998).

The financial services sector is well developed in the Bellville/Durbanville region. Sanlam's headquarters are located in Bellville as are the branch offices of other large insurance firms. Many accountants, brokers and financial and investment consultants are also located in this area which adds to its service sector character (Myburgh, 1998). Although commercial and service sector office development in the Tygervalley area began before the end of apartheid it was limited and in the last three to five years it has clearly exploded with commercial and residential development and has been labelled 'The Sandton of the Western Cape' (Koblitz, 2006a). Large firms which have moved their national headquarters to the area in recent times include Metropolitan Life and Santam. The formal commercial and residential development which has been occurring in this region is concentrated along the Platteklouf and Durban Road axes. Its spatial form is not ribbon-like, as in older development corridors but, the new market demands have resulted in office estates near, but not on, main transport routes. In the past several years far more development has occurred outside corridors and nodes than within them (City of Cape Town, 2003).

Today, the Tygervalley area has fifteen mixed-use waterfront developments along the Elsieskraal River, with more in the pipeline, which are aimed at attracting young professionals. These developments include offices and restaurants on the ground level and apartments above. Commercial development has followed residential development with Willowbridge Lifestyle Centre, opening opposite the Tygervalley Centre, to cater for the retail needs of the professional population. These mixed-use developments, which are cheaper than properties in the southern suburbs, are increasingly making the Bellville/Durbanville area attractive to the middle-class, some of whom are employed in the

northern suburbs. And the area has attracted service sector businesses in recent years because of the reduction of commuting time as well as the mushrooming middle-class residential development in the surrounding suburbs. Therefore this area could be developing into a post-Fordist totalising suburb, which will be discussed in section 4 (Koblitz, 2006a; Harvey, 2006; Property24, 2006).

It seems to be that the post-Fordist service sector character of the Tygerberg area began before the end of apartheid but there has been a remarkable increase in the development of the area both residentially and commercially in the last few years.

The photographs show the extent of development in the Tygervalley area in 1995 and 2006. A 1995 aerial photograph shows that the only major development in the area 1995 was the Tygervalley centre (Figure 4.5). The land use in the area was sparse and there was vacant land both in the foreground of the picture and to the right of the Centre. The areas surrounding the Centre were mainly residential.

Figures 4.6 and 4.7, taken in 2006 are not aerial photographs and therefore I have had to rely on my knowledge of the area to make out the developments surrounding the Tygervalley Centre. The area has become far more built up and the vacant land in Figure 4.5 has been developed for both residential and commercial purposes. The vacant land in front of the Centre, which was an unused quarry, now houses various mixed-use waterfront developments, mentioned previously (Figure 4.6). To the right of the Centre is the insurance company, Santam's, headquarters as well as other large office blocks. In Figure 4.7, the Tygervalley Centre appears different because it has expanded its parking since 1995. In the foreground of this photograph is Willowbridge Lifestyle Centre which caters to the young professional class living in the waterfront apartments. Behind the Tygervalley Centre, in the top left corner of the photograph is where both office and commercial development has grown since 1995, along Durban and Old Oak Roads, which are north and west of the Centre, respectively. Here are found large office blocks, exclusive car showrooms and smaller, niche retail centres.

Figure 4.5: Oblique aerial view of Tygervalley/Bellville, 1995



Source: Myburgh, 1998.

Figure 4.6: Tyger Waterfront and Tygervalley Centre in background, 2006



Source: Nancy Graham

Figure 4.7: Tygervalley Centre and Willowbridge Lifestyle Centre in foreground, 2006



Source: Nancy Graham

The question is whether this growing Bellville/Durbanville node, which has elements of a post-Fordist totalising suburb, is reinforcing apartheid racial spatial divides because of its majority white residential character. Totalising suburbs are middle-class areas which combine residence, business and social facilities (Marcuse, 1997b). Bellville/Durbanville is a middle-class region that has growing middle-class employment opportunities; however, everyday life is not contained within the symbolic walls as many Bellville/Durbanville residents still have middle-class jobs in the CBD, as seen by the peak commuting patterns (City of Cape Town, 2003).

Bellville/Durbanville was a white Group Area during apartheid and, as will be shown in section 3, it is still predominantly white. There is some coloured desegregation in south Bellville, along the railway line, adjacent to former coloureds-only areas. However, these are not as middle-class as those suburbs above the N1. The underclass is excluded from the area both residentially and in terms of the skills required for employment. Bellville/Durbanville by public transport is also more time-consuming and costly to access than the CBD and therefore there is also a spatial mismatch for those in the south-east who could perform unskilled labour in the north.

The Cape Town CBD is still a thriving service sector node and therefore Bellville/Durbanville is not as totalised as Sandton or edge cities elsewhere in the world but it still has a dominant white, middle-class population and therefore the recent growth of the node is reinforcing apartheid spatial patterns. If the market-driven northern drift of service sector employment continues, the Bellville/Durbanville area will probably become more totalised and further reinforce the apartheid racial spatial divides (Turok, 2001).

However, according to planners in the Kraaifontein sub-council, the local government is currently working on concept plans, as part of the 'Kraaifontein, north of the N1 Spatial Framework', which aim to merge market-driven development and sub-economic housing. In order to redress the market-driven racial spatial inequalities and develop a wider income spectrum in these growth corridors, the City is attempting to combine market and social

equity forces (Rost, 2006). If indeed this plan is implemented it could, to some extent, erode the racial character of the spatial mismatch.

Blaauwberg

The other growing decentralised node in the northern suburbs is the Blaauwberg region, with commercial and residential development clustered along the Koeberg road axis. Montague Gardens and Killarney Gardens have seen significant growth in light industrial development in recent years. The best growth period in the industrial sector in 15 years has meant a rising demand for large industrial space, particularly over the last two years, since the market has recovered from the highest interest rates of 1999. This growth is seen in the current construction of a R83 million expansion to Phumelela Park in Montague Gardens (Old Mutual Properties, 2006). In fact, there is a growing shortage of vacant land in the northern industrial areas which will mean older industrial properties will need to be upgraded in order to meet the need, as is already being done in Bellville (JHI Real Estate, 2004). Montague Gardens is a relatively modern area so buildings are suited to current industrial requirements and the area is served by major roads, and the railways; in addition the harbour is nearby. The type of industrial activities in this area shows how manufacturing has not only declined but the nature of these activities and the skills required have changed and more skilled labour is required for manufacturing in modern times. Montague Gardens and Killarney Gardens are characterised by light industry and wholesale retail operations, in particular logistic business, which plan and arrange the transportation and storage of goods; DIY centres, and distribution centres for major retail chains in the northern suburbs. This industrial area is also unique because of the fact that it is surrounded by middle-class residential suburbs and both retail and offices (De La Porte Property Group, 2006).

Residential development has also expanded rapidly in this region, in particular, with the development of Parklands north of Table View in 1997, which has become the fastest growing residential area in South Africa. The Milnerton Race Course was also sold for development in 1997 and today The Paddocks shopping centre and many residential

complexes are on this land (Blaauwberg Online, 2001; n.d.). Century City is also technically part of the Blaauwberg region although it is considered a separate node.

Century City

Century City is a 'mega' development project along the N1 highway in the northern suburbs, which opened in 1999 and has experienced monumental growth in all facets of development as it has epitomised the 'postmodern urbanism' model in Cape Town (Soja in Marks & Bezzoli, 2001). The land was initially meant to be used to expand Summer Greens, a middle income, racially integrated suburb. The developers described the mega-project as a mixed-use, high density, integrated development, which resounded with the MSDF compaction and integration ideals; however, in practice, the development is between the Koeberg Road and Voortrekker Road corridors and does not have public transport linkages (Marks & Bezzoli, 2001).

Century City has the retail component of the Canal Walk shopping mall, a theme park, two hotels, a women's health and wellness centre, 1 500 residences of differing types (apartments, a retirement resort, single house complexes), a mixed-use office and residential development, and office developments for both large owner-occupiers and small to medium-sized renters. The office space is set to double between May 2006 and the end of 2007. Century City houses the regional headquarters of many international firms and international call centres are increasingly locating there (Deans, 2005; 2006). It is well positioned between the CBD and Bellville and is the destination of much of the movement of businesses out of the CBD towards the northern suburbs. Some speculate that it could be the new commercial CBD of Cape Town in 15 years (Marks & Bezzoli, 2001; Business Day, 2006; E-prop, 2001).

The Helderberg

One of the other decentralised locations which has grown quickly over the last few years is the Helderberg Basin. It had always been a primarily residential area for those commuting to Cape Town for work; however, over the last decade or so this has been changing as Somerset West's retail and office base has developed and smaller businesses have located to

the area to avoid traffic congestion in the city centre. The major development has been the redevelopment of 1 000 hectares of AECI (a South African chemical group) land. This area was released to be developed by Heartland Properties, a subsidiary of AECI, and in the last five years 250 hectares of this prime coastal land, the equivalent size of Century City, has been used for residential, retail, commercial and light industrial development projects. The first development was Somerset Mall which has undergone many extensions over the years. Other developments, completed and currently being constructed, include: a light industrial and clean manufacturing node; a convenience shopping centre, two residential estates, office parks, a multi-use industrial business park, and a residential, office and restaurant development around Paardevlei. The extent of residential development has also increased, particularly, on existing wine farms, which have converted part of their land into gated communities (Viola, 2005; Mathomes, 2006; Business Day, 2005b; Michael Kerkhoff & Associates, 2005).

The South-western suburbs

The final decentralised location of service sector business is the former whites-only, south-western suburbs, parts of which were developed during apartheid, the Main Road corridor and the Claremont node, in particular. As mentioned earlier, Claremont has increasingly become a desirable decentralised location, particularly for financial services. Unlike in the northern suburbs, there is a lack of space for new developments because of the proximity of the mountain and most of the available land has been used up by high-quality, post-apartheid residential and commercial developments. Westlake has been a growing, post-apartheid, decentralised residential and commercial node with two affluent gated residential estates, Reddam House School and the Steenberg shopping centre. The Westlake Business Park and Steenberg Office Park were sold out within three years of development. Therefore the only major development area left in the south-west is Capricorn Park, which is a new business and industrial park in Muizenberg. It has benefited from the demand for industrial space mentioned above and the proximity of unskilled/semi-skilled labour pools from the surrounding majority working class coloured and black African areas. There has also been extensive construction of middle-income housing adjacent to the area, along the coastal road (Business Day, 2004b; Capricorn Park, 2005).

Despite some decentralised development occurring in the south-western suburbs, as has been shown, the abundance of space for developments in the northern suburbs of Cape Town has meant far more new decentralised, post-apartheid development has occurred there. I have not discussed the south-western suburbs as a totalising suburb because, although it is middle-class and has service sector employment, it is a far more spatially spread out region than Bellville/Durbanville and is not as separate from the CBD. Its character does not seem to be as symbolically walled from the rest of the city, as Bellville/Durbanville.

The South-east sector

The Cape Flats and south-east sector has been virtually excluded from private investment. The possible reasons for this were mentioned previously. The economic activity within the area is primarily manufacturing since the apartheid government facilitated the development of industrial zones on the boundaries of Group Areas to create racial buffer zones. Therefore most industrial land is along the railway arc and only the Airport, Philippi and Parow Industria areas are within the former coloured and black Group Areas. Airport Industria has been the one growth point within the south-east because it is adjacent to the international airport and highways and attracts freight, transport and airport related industries. As mentioned previously, the MSDF has attempted to develop a commercial node at Philippi but the private sector has not cooperated (Smith, 2006; Turok & Watson, 2001). The economic activity in the south-east has instead been some private sector retail but, on the whole, the informal sector dominates (City of Cape Town, 2003).

It has been shown in this section, that due to post-Fordism, the service sector in Cape Town has expanded since 1980 and this sector has demanded an increasingly professional labour force. These businesses have also increasingly moved out of the CBD in favour of newer, larger greenfield developments in middle-class areas of the city. The spatial pattern of these new private sector developments show a concentration in the northern suburbs of the city; however, the CBD is still a functioning service sector business node. Therefore Marcuse's quartering of the city has not occurred to the same extent as in the United States and Johannesburg. The shift to the service sector, and the consequent change in skills required,

is a global process, and its effects first manifested in Cape Town during apartheid. The resultant spatial form, therefore, has a particular racial character, due to both apartheid education, residence and employment policies; and this legacy which affects the location of new service sector developments. These are concentrated in former whites-only areas, which are not easily accessible to the underclass in the south-east. In post-apartheid Cape Town, the middle-class areas where employment is concentrated have begun desegregating, particularly with the in movement of middle-class coloureds, but it has not occurred to the same extent as in Johannesburg's northern suburbs. The geography of the middle-class and desegregation is looked at further in the following sections.

University of Cape Town

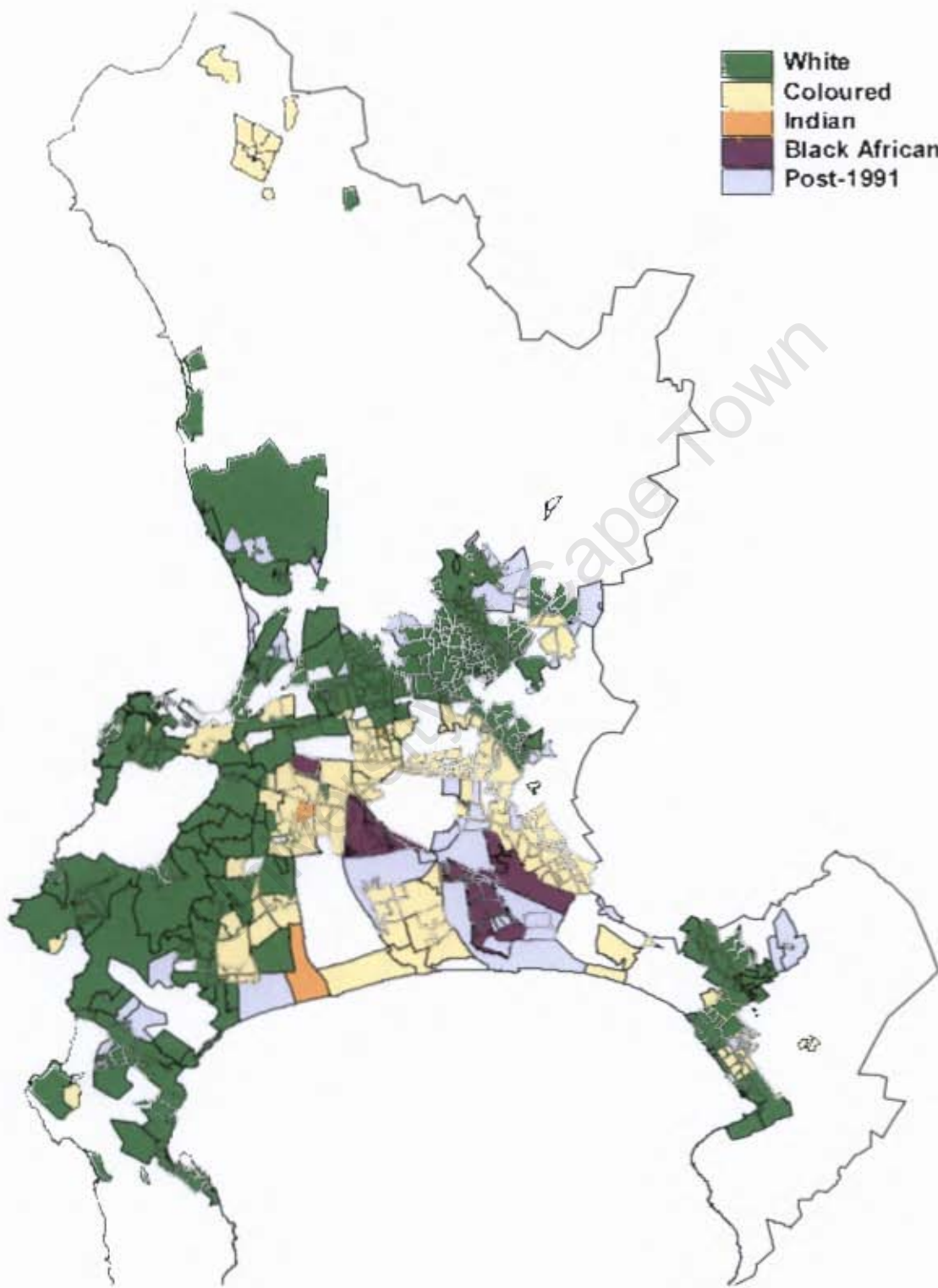
4.2 The Spatial Patterns of Occupational Classes

In light of both Borel-Saladin's (2006) analysis of the distribution of skill levels in various employment sectors over time, and the discussion on the location of service sector businesses, I have analysed the spatial distribution of occupational classes in Cape Town. The location of the middle-class is important in understanding the post-Fordist spatial order because the proximity of such labour is desirable for such businesses. Therefore the decentralisation of service sector work, worldwide, has been to middle-class residential areas. In South African cities, these locations are former whites-only Group Areas and therefore the spatial patterns of middle-class occupations and the post-apartheid racial compositions of these areas is important for analysing racial and class inequality in Cape Town. Therefore I will analyse the occupational geography in light of the racial patterns of desegregation, which are discussed in section 3.

4.2.1 Group Area classifications

The Group Area Act classifications of Cape Town's residential sub-places are shown in Figure 4.8. The one Malay Group Area in the city centre, the two low-income housing areas developed, adjacent to the Airport, for both coloured and black Africans in 1989; and the mixed areas of Woodstock and Salt River are included in the 'coloured' classification, both in the map and in all the racial distribution tables.

Figure 4.8: Group Area classification of residential sub-places

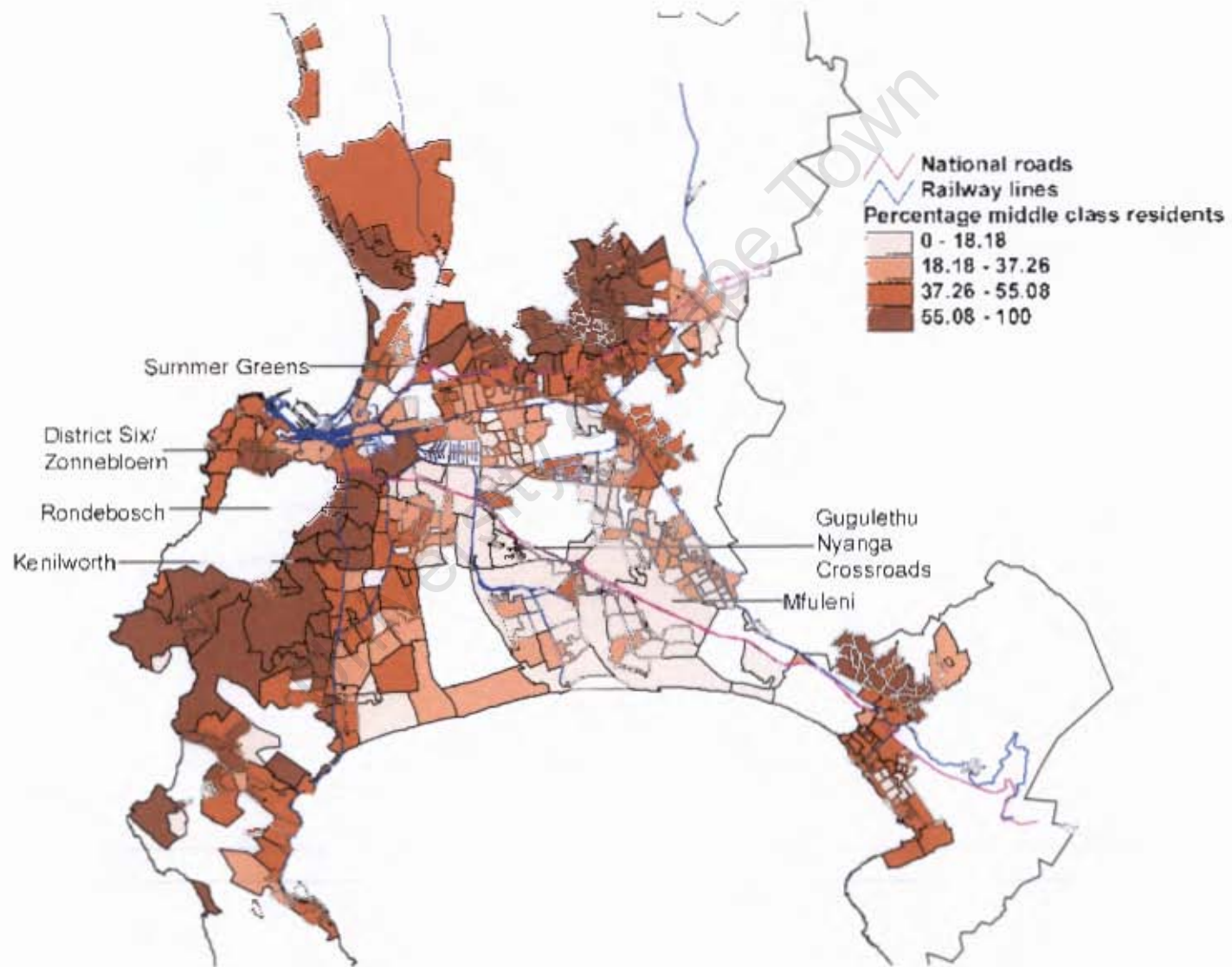


4.2.2 Spatial Distribution of Occupational Classes

Figure 4.9 below shows the distribution of the middle-class in Cape Town. The distribution is shown by the percentage of the working population of each sub-place employed in the middle-class occupational categories, namely, 'Legislators; senior officials and managers', 'Professionals' and 'Technicians and associate professionals'. Natural group breaks are used in all univariate analysis maps. On this map, group 1 shows working class areas, while group 4 shows middle-class sub-places. Although the classification of sub-places on the map can only be accurately shown using two decimal places, these figures are rounded in the discussion.

University of Cape Town

Figure 4.9: Spatial distribution of the middle class



The spatial pattern of Cape Town's middle class in general seems to follow Group Area classifications shown in Figure 4.8. There are 155 middle-class sub-places i.e. with more than 55% of their population employed in either the 'Legislators; senior officials and managers', 'Professionals' or 'Technicians and associate professionals' occupational categories. Of these suburbs, 135 are former white Group Areas.

Three high percentage middle-class concentrations can be observed: a large area in the south-western suburbs, a small cluster in Somerset West and another large cluster in the northern suburbs, particularly around Durbanville and Platteklouf, the area to the west of Bellville/Durbanville. The middle-class areas are clustered around the decentralised office and retail nodes discussed previously. The spatial pattern of the middle-class looks very similar to the Group Area classification. The majority black areas within the arc of the white Group Areas, bounded by the railway lines, are working class.

In the United States these middle-class areas are edge cities or totalising suburbs, which are also majority white; however, their country's population is majority white. In Cape Town, while these middle-class areas are still majority white suburbs, the white race is only 19% of the city's population, and therefore the question is to what extent are these middle-class suburbs desegregating and thus decreasing inter-racial inequality.

The spatial pattern of sub-places with 37-55% middle-class residents generally follows the same arc as the majority middle-class areas; only a few sub-places within the Cape Flats fall into this occupation group. The geography of this group of suburbs is important as they are the former whites-only suburbs where most coloured desegregation occurs, as will be shown in section 3, and 34% of these suburbs have more than 50% of their residents employed in middle-class occupations. The general spatial pattern is that sub-places with 37-55% middle-class residents are adjacent to majority middle-class areas. In the northern suburbs they lie north of the railway line, while in the south-western suburbs both the Southern suburbs and Cape Flats railway lines go through them. A large section of the Helderberg basin falls into this group, as does the city centre and surrounding suburbs. This shows the different nature of Cape Town's inner city compared to other South African cities. In other

South African and global cities the inner city is where the poor reside; however, in Cape Town it is the site of the skilled labour force. District Six would have been an inner city ghetto, as has occurred in some of Johannesburg's inner city suburbs. The apartheid government's housing policy, however, meant that the coloured population were forcibly moved to the Cape Flats in the 1960s and the inner city became the domain of the white middle-class population.

The general occupational class spatial pattern seems to be the middle-class areas forming an outer arc, followed by sub-places with 37-55% middle-class residents forming an arc within it and sub-places with 18-37% middle-class residents form an arc within that. The 153 working class sub-places (0-18% middle-class residents) are concentrated in the south-east, particularly in Mitchell's Plain and the predominantly black African areas of Khayelitsha, Mfuleni; Crossroads, Gugulethu and Nyanga. The south-east is where post-apartheid public investment in low-income housing has occurred and this houses the majority of unskilled black Africans who have migrated from other parts of the country since 1991. The low skill levels are a characteristic of the post-Fordist excluded ghetto, which will be discussed in section 4. A more detailed multivariate occupational class analysis in section 4.2.4 will show the occupational composition of the south-east in greater detail.

Racial composition of the middle class

This racial character of the spatial pattern of middle-class areas is corroborated by Table 4.1, which shows the middle-class occupation categories by race. 'Legislators, senior official and managers' together with 'Professionals' is analysed separately from 'Technicians and associate professionals' because it is expected that their racial distribution differ. The final two columns look at the three categories combined.

Table 4.1: Middle-class occupations by race, 2001

| Race | Legislators, senior officials, managers and professionals (1 and 2) | Percentage | Technicians + associate professionals (3) | Percentage | Middle-class occupations (1, 2 and 3) | Percentage |
|---------------|---|------------|---|------------|---------------------------------------|------------|
| Black African | 12 526 | 8 | 11 468 | 11 | 23 994 | 10 |
| Coloured | 41 848 | 28 | 46 530 | 46 | 88 378 | 35 |
| Indian | 4 913 | 3 | 1 802 | 2 | 6 715 | 3 |
| White | 91 637 | 61 | 40 784 | 41 | 132 421 | 53 |
| Total | 150 884 | 100 | 100 571 | 100 | 251 508 | 100 |

Source: Census 2001

The white population dominates (61%) the managerial and professional occupations, with coloureds making up just over a quarter of this occupational class. Because Indian/Asians make up such a small percentage Cape Town's population, their percentage in each category is not significant to this discussion. However it is interesting to note that 45% of the Indian/Asian race in Cape Town are employed in these three categories and, unlike the coloured population, they have a larger percentage representation in the managers and professionals categories than in the technicians and associate professionals category.

The coloured race has the largest percentage (46%) of those 'Technicians and associate professionals' while the white population has only slightly less (41%). However, the coloured representation in this category is substantially larger than that in the managerial and professional category, while white representation is greater in the managerial and professional class. The black African middle class is also more highly represented (11%) in the less skilled 'Technicians and associate professionals' category compared to the other more skilled managerial and professional category (8%). However, it is clear that the coloured and white races dominate both these occupational categories, overall accounting for 88% of the labour force in the three census occupational categories, with the white population having the highest percentage of the middle-class.

Where the coloured middle-class resides will be shown in the following section. However, the location of the black African middle-class, which is substantially smaller, is not as clear. I tabulated the middle-class black Africans for each sub-place as a percentage of the total middle-class black African population in Cape Town, and this shows that the black African middle-class generally resides in the former black African-only areas of Gugulethu, Langa and Khayelitsha. This is contrary to the spatial pattern in United States cities and indeed, to Johannesburg, where the larger black African professional class has moved out of the ghetto of Soweto into the inner city and northern suburbs. The three former-white suburbs which each have slightly more than 1% of the black African middle class are Kenilworth and Rondebosch in the southern suburbs, and Summer Greens in Blaauwberg, near Century City. This finding corroborates Saff's (1998) 1990-1994 inter-racial property transfer analysis which also found that the black African middle class preferred to buy houses in the majority black African areas.

It is important to look at apartheid racial statistics of middle-class employment in Cape Town in order to monitor how things have changed since the 1980s. Therefore in Table 4.2 below I have displayed the Census 1980, 1991 and 2001 racial composition of middle-class occupation categories for comparison. The 1980 and 1990 data are for the statistical region of Cape Town together with the statistical districts of Kuilsrivier, Somerset West and Strand, while the 2001 data is for all sub-places within the City of Cape Town. The occupational categories within middle-class occupations differ between the censuses and therefore I only looked at the overall figures. The other difference is that the unemployed are also included in the 1980 and 1991 occupational data because those unemployed who were actively seeking work were asked to identify the occupation in which they were last employed (Republic of South Africa, Central Statistical Service, 1980b & 1991).

Table 4.2: Middle-class occupations by race: 1980, 1991 and 2001

| Race | Middle-class occupations, 1980 | Percentage | Middle-class occupations, 1991 | Percentage | Middle-class occupations, 2001 | Percentage |
|---------------|--------------------------------|------------|--------------------------------|------------|--------------------------------|------------|
| Black African | 2 057 | 2 | 6 883 | 5 | 23 994 | 10 |
| Coloured | 22 534 | 24 | 37 777 | 27 | 88 378 | 35 |
| Indian/Asian | 892 | 1 | 2 455 | 2 | 6 715 | 3 |
| White | 69 981 | 73 | 94 109 | 67 | 132 421 | 53 |
| Total | 95 464 | 100 | 141 224 | 100 | 251 508 | 100 |

Source: South African population censuses

The black African population employed in these middle-class occupations increased five-fold from 2% in 1980 to 10% in 2001, the coloured population increased their relative share by 11%, the Indian/Asian percentage share increased from 1 to 3%, while the white percentage share decreased by 20%. In 1980, the white population held 73% of middle-class jobs in Cape Town. This was the period where manufacturing was beginning its decline and service sector employment was increasing. Within this middle-class occupation grouping, 91% of managerial and administrative occupations were held by whites; however, this decreased to 78% in 1991. The coloured labour force is the only group with any significant representation in middle-class occupations in 1980. In 1991, the white composition of the middle class had decreased by only 6%; however, with the end of apartheid in the early 1990s their representation decreased by a further 14%. Because the coloured population held 24% of middle-class occupations in 1980, their percentage increase over the years has not been as great as the black African population. Therefore as one can see, the middle to high-income classes have become more racially mixed since 1980, when the rise of service sector began, but the white race still holds the majority of middle-class jobs.

4.2.3 Higher education spatial distribution

Tertiary education (above grade 12/matric) is linked to the middle-class occupations, which are increasingly important in the post-Fordist era. During apartheid education policies discriminated against coloured and black Africans. They received far less funding and the quality of education was poor (Selod & Zenou, 2001). There was also discrimination within the black population as coloured schools received superior education quality and funding compared to black African schools. The distribution of the population with a tertiary education is very much linked to the location of the middle-class in Cape Town and the former white areas, where service sector decentralisation has occurred. Although governmental education discrimination does not occur any longer, the legacy of these apartheid policies still exists in the education system and the majority of black schools in the south-east have fewer resources than the former whites-only schools. Figure 4.10 below shows, for each sub-place, the percentage of the employed population with a tertiary education. The relationship between a sub-place's occupational class and tertiary education level is analysed by cross-tabulating sub-places' percentage middle-class and tertiary education groups.

Figure 4.10: Percentage employed residents with a tertiary education

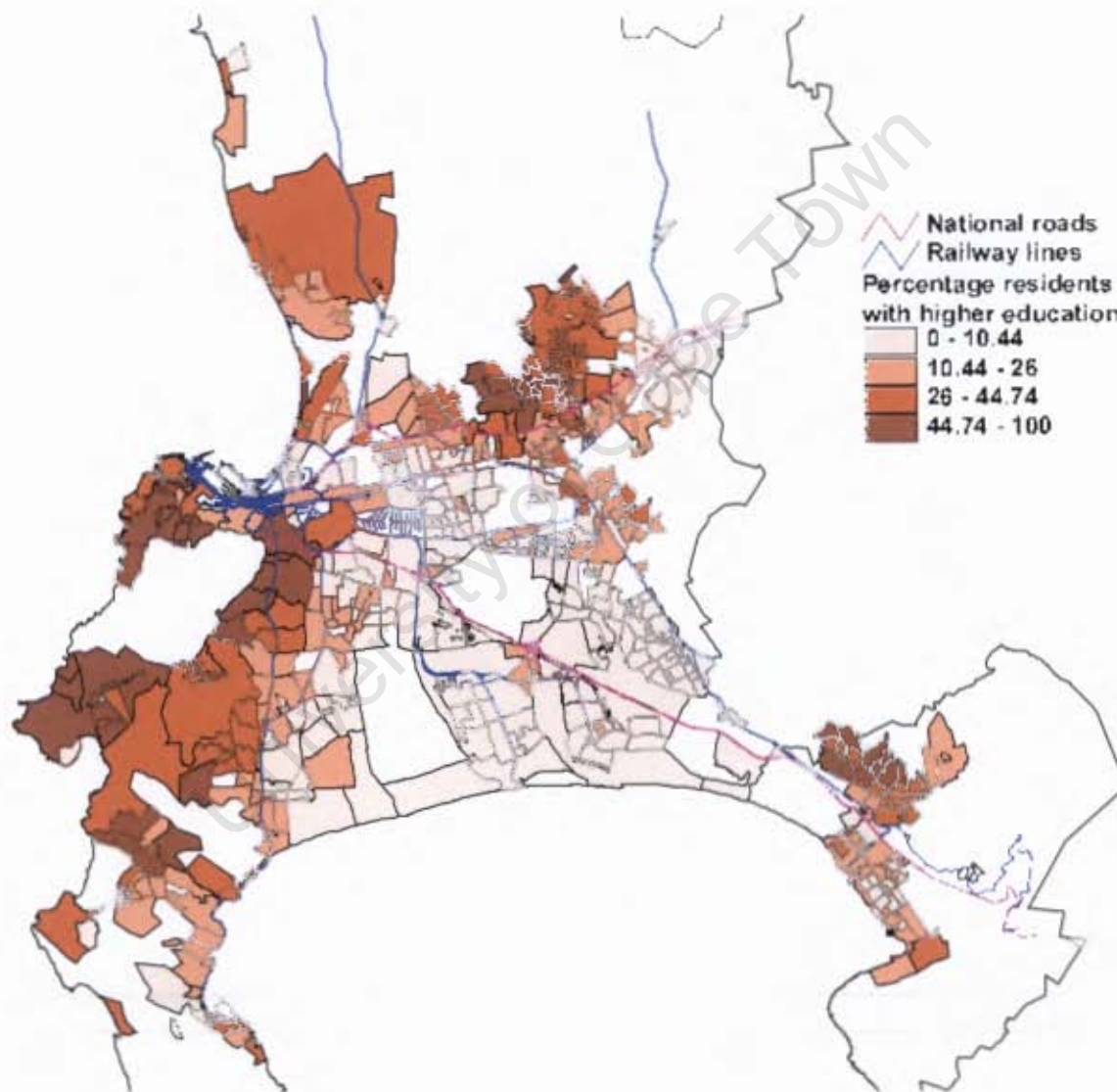


Figure 4.10: Percentage employed residents with a tertiary education

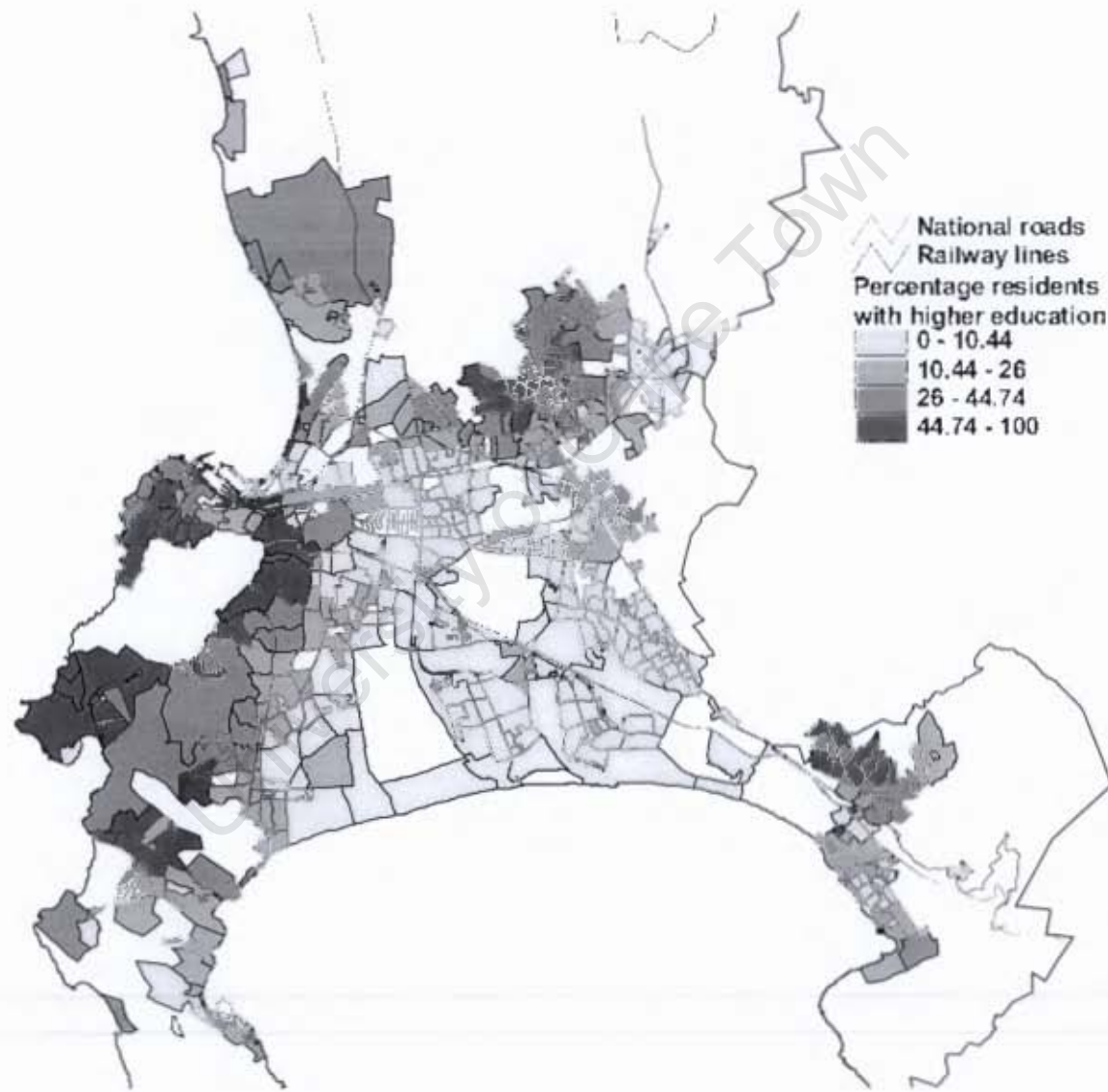


Table 4.3: Percentage tertiary education vs. middle-class occupations

| % Middle class | % Tertiary education (above grade 12) group | | | | Total |
|----------------|---|---------------|---------------|----------------|-------|
| | 1 (0-10%) | 2 (10-26%) | 3 (26-45%) | 4 (45-100%) | |
| 1 (0-18) | 149 | 2 | 0 | 2 | 153 |
| 2 (18-37) | 93 | 27 | 1 | 1 | 122 |
| 3 (37-55) | 19 | 104 | 32 | 9 | 164 |
| 4 (55-100) | 1 | 22 | 80 | 52 | 155 |
| Total | 262 | 155 | 113 | 64 | 594 |

Most of the sub-places within the railway arc, where the black population lived during apartheid, have less than 10% of residents with a tertiary education. In fact, over half of Cape Town's sub-places (262) have 10% or less of their population with a tertiary education. It seems that 97% of working class sub-places (group 1) have a low percentage population with a tertiary education, as would be expected (Figure 4.10 and Table 4.3). This is, however, where the similarity between the occupational and education spatial patterns ends. Therefore contrary to what I expected, it seems that, except for the unskilled, uneducated class, the tertiary education and middle-class occupation spatial patterns do not match up. However, while the natural breaks groups for the middle-class and tertiary education do not necessarily correlate, the CBD, south-western and northern suburbs, i.e. the former white areas where employment is located, are the suburbs with greater than 26% of residents with a tertiary education and there is a dearth of these sub-places within the railway arc.

Most of the former white Group Areas have more than 55% middle-class residents; however, only a few of these sub-places have more than 45% of their residents with a tertiary education. Most of these south-western and northern suburbs have 26% to 45% of residents with a tertiary education qualification. Suburbs with more than 45% of the population with tertiary education qualifications are the only group where one occupation class is significantly dominant (81%), namely the middle-class; however, more middle-class suburbs have between 26% and 45% residents with tertiary education.

The residents of the white-dominated suburbs clearly have an educational, and therefore a skills, advantage over the many majority black and coloured areas of Cape Town. Post-Fordist forces have increased skill requirements, and these are overlain on the legacy of apartheid education policies, which discriminated against black pupils. Therefore the majority of black residents have experienced a skills mismatch in post-Fordist, post-apartheid Cape Town.

University of Cape Town

4.2.4 Multivariate analysis of occupational class spatial distribution

I performed an additional multivariate occupation analysis using Philcarto to show a more detailed picture of occupational distribution in Cape Town and the merits of Philcarto. By performing the multivariate analysis I was able to look at not only the distribution of the middle-class but also at areas with different occupational class compositions in Cape Town. Philcarto's hierarchical ascending classification analysis (HAC) uses cluster analysis to form groups with differing occupational profiles. Therefore the composition of each sub-place is analysed in terms of its occupational class, and groups are created which have a specific profile in terms of the relative occupational class composition of those areas. As discussed in chapter 3, the occupational classes are 'Middle-class occupations', 'Clerical, sales and service workers' and 'Manual occupations' and four groups were formed. Figure 4.11 shows the dendrogram of the cluster analysis and Figure 4.12 shows the profiles of the groups created. Figure 4.13 shows the mapped results of this analysis. The occupational compositional character of the group is discussed initially, and in light of this, I discuss the spatial patterns displayed on the map.

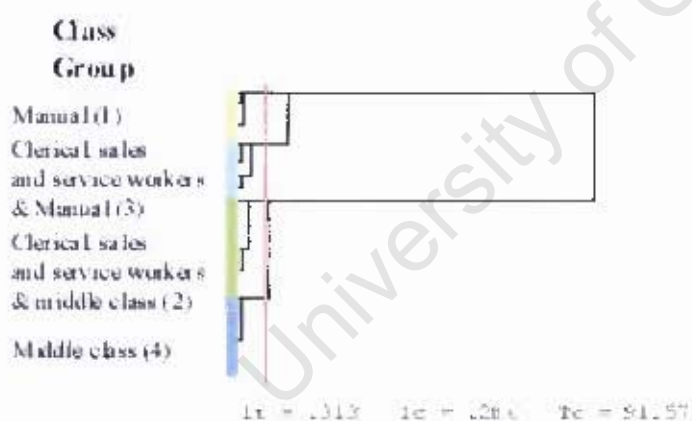


Figure 4.11: Dendrogram of HAC analysis

In Figure 4.11, " I_t is the total inertia (variation) of the data table, I_c is the inertia explained by the classification, and T_c is the percentage of inertia explained by the classification relative to the total inertia" (Waniez, 2003:178). The T_c should be higher than 70% and for this HAC analysis it is 92% of the total variation is explained by the classification. The red vertical line shows where the tree is 'cut' in order to form the four defined clusters (Figure

4.11). The horizontal length of the linkage between the combined manual occupations (G1) and clerical, sales, service workers and manual occupations (G3), and middle-class occupations (G2) and clerical, sales, service workers and middle-class occupations (G4) shows that these two groupings are not closely related.

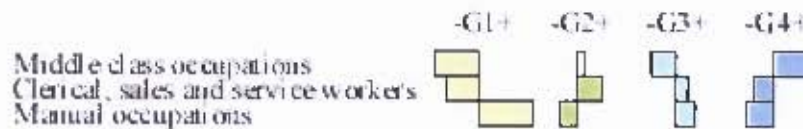


Figure 4.12: Average profiles of four groups

Figure 4.12 provides a visual of the profiles of the four groups and each bar represents distance from the mean (standard deviation) for that variable (occupational class). The length of the bar represents the degree of presence or absence of a variable in each group. For example, reading 'manual occupations' horizontally, the working class is strongly represented in group 1 sub-places and notably represented in group 3 sub-places, but there are relatively few in both group 2 and 4 sub-places. Tables 4.4 and 4.5 show the percentage distribution of classes across the four groups, and of classes with groups, respectively. Darkly-shaded blocks show a significant presence of an occupational class (greater than 25% and 30% for Table 4.4 and 4.5 respectively), while the lightly-shaded blocks show a significant absence (less than 10%).

Table 4.4: Percentage distribution by occupation class (row percentages)

| Occupational Class | HAC groups | | | | Total |
|-------------------------------------|------------------|---|---|------------------------|-------|
| | Group 1 (manual) | Group 2 (clerical, sales, service workers and middle-class) | Group 3 (clerical, sales, service workers and manual) | Group 4 (middle-class) | |
| Middle-class occupations | 8 | 39 | 20 | 33 | 100 |
| Clerical, sales and service workers | 23 | 32 | 33 | 12 | 100 |
| Manual occupations | 52 | 11 | 33 | 4 | 100 |

Table 4.4 shows that 39% of the middle class is in G2, 33% in G4 and G3 contains 20%; however, this latter value is less than the mean value for the middle-class occupations and therefore it is shown as notably absent in Figure 4.12. The clerical, sales and service workers class is quite spread across the groups, in particular G1, G2 and G3; however, as with the middle class in G3, the clerical, sales and service workers class is notably absent in G1 because its value is less than that of the mean of the set. On the other hand, manual workers are very prominent in G1 (52%) and are found to a lesser extent in G3 areas. The apparent contradiction between this middle class percentage distribution and the profile (Figure 4.12) is because the profile shows the means distances according to the number of sub-places; however, the percentage distribution is of middle-class residents and the clerical, sales, service worker and middle-class suburbs are more densely populated than the solely middle-class suburbs. The percentage occupation class per group (Table 4.5) for group 2 and 4 shows the fact that group 4 is more middle class than group 2.

Table 4.5: Percentage occupation class composition per group (column percentages)

| Occupational Class | HAC groups | | | | Total |
|-------------------------------------|------------------|---|---|------------------------|-------|
| | Group 1 (manual) | Group 2 (clerical, sales, service workers and middle-class) | Group 3 (clerical, sales, service workers and manual) | Group 4 (middle-class) | |
| Middle-class occupations | 8 | 45 | 20 | 65 | 29 |
| Clerical, sales and service workers | 20 | 35 | 31 | 24 | 28 |
| Manual occupations | 72 | 20 | 49 | 11 | 44 |
| Total | 100 | 100 | 100 | 100 | 100 |

Table 4.5 shows the percentage of each group employed in each occupational class. Seventy-two percent of G1 sub-places comprise residents mainly employed in manual labour. G2 sub-places are made up of 45% middle-class and 35% clerical, sales and service workers class. G3 sub-places have a manual and clerical, sales and service workers class mix of 49 and 31%, respectively. G4, the middle-class sub-places, have 65% of their residents employed in middle-class occupations. The total occupational class distribution for Cape Town is 29% middle-class, 28% clerical, sales and service workers class, and 44% of the manual occupation class.

In light of Figure 4.10 and the above tables, group 1 is identified as 'Manual occupation' sub-places, group 2 sub-places have a mixture of middle-class and clerical, sales and service workers, with the latter group having a stronger presence, and group 3 is a clerical, sales, service workers and manual occupations mix, the latter being slightly more represented. Group 4 sub-places are the location of the middle class.

This HAC analysis allocates places, rather than people, to groups. Therefore in light of this and the occupational differences between the groups, I have tabulated the number of sub-

places and the population for each group in Table 4.6 below. This histogram with Figure 4.11 also shows the number of sub-places in each group.

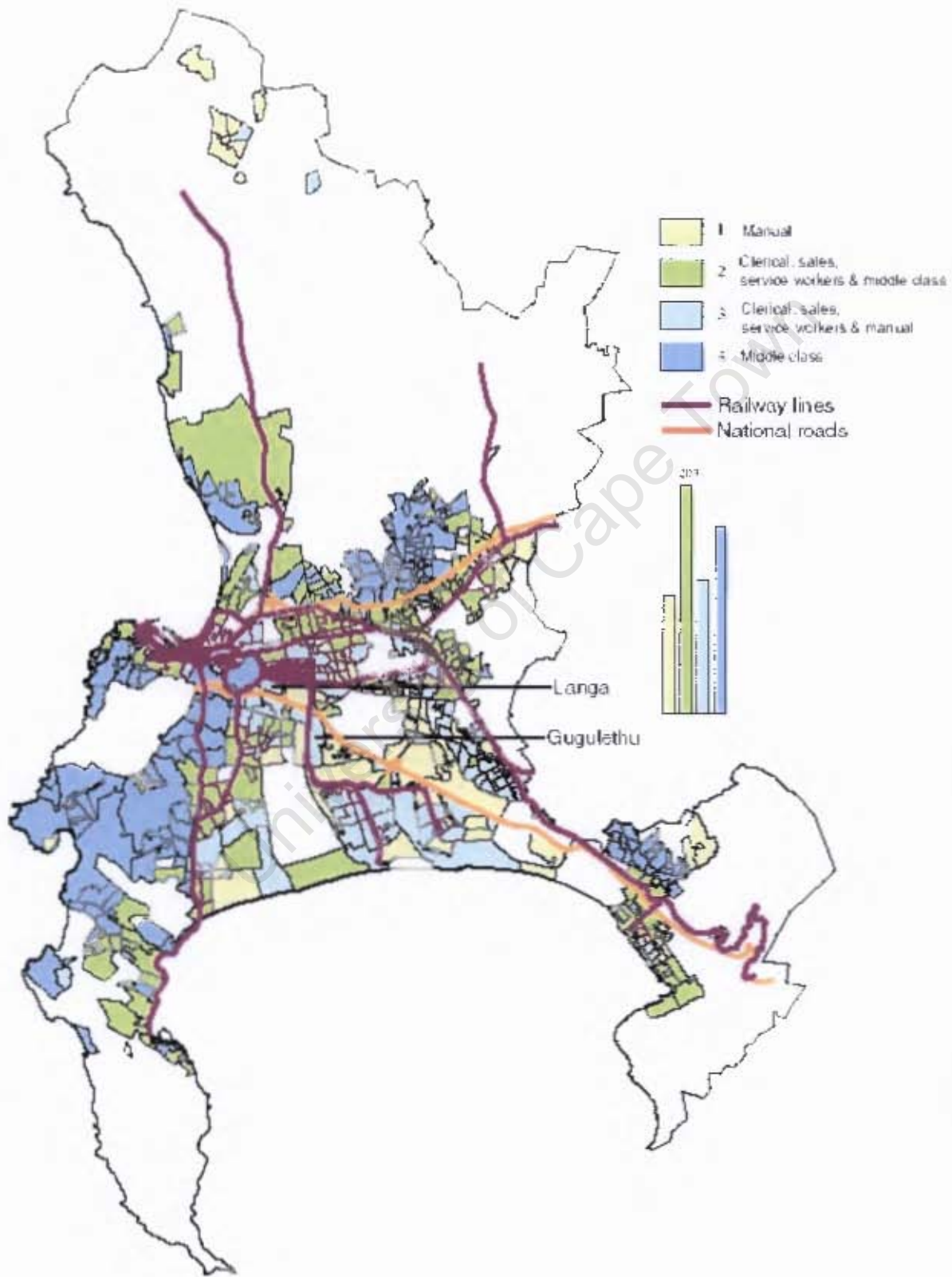
Table 4.6: Distribution of sub-places and people in the occupational class groups

| HAC group number | Number of sub-places | Population | Percentage of total population |
|---|----------------------|------------|--------------------------------|
| 1 (manual) | 106 | 1 185 117 | 42 |
| 2 (clerical, sales, service workers and middle-class) | 203 | 518 828 | 18 |
| 3 (clerical, sales, service workers and manual) | 119 | 845 181 | 30 |
| 4 (middle-class) | 167 | 287 700 | 10 |
| Total | 595 | 2 836 826 | 100 |

As mentioned above, the dendrogram of the cluster analysis clearly shows a separation of groups 1 and 3 from groups 2 and 4. Groups 2 and 4 combined, which represent the areas with clerical, sales, service workers and middle-class occupations, contain 62% of the sub-places; however, the population within these areas is only 28% of Cape Town's population. On the other hand, groups 1 and 3 combined, have fewer sub-places but the majority of Cape Town's population (72%).

The spatial patterns of these occupational class groups are shown in Figure 4.13. The histogram shows the frequency of sub-places in each group.

Figure 4.13: Occupational spatial patterns



Occupational spatial patterns

The multivariate analysis using Philcarto shows a similar pattern in the location of the middle-class labour force (group 4) to the univariate analysis done using Arcview. The middle-class sub-places occur in the former white Group Areas, with particular concentrations in the south-western suburbs, crossing over the Table Mountain range; the Helderberg above the railway line, in the Tygerberg region above the N1 highway, and the northern sub-places of Blaauwberg. The Atlantic coastal sub-places to the west of the CBD are not in the highest percentage middle-class group, however, they are in the middle-class group in the multivariate analysis. The spatial distribution of the other classes, however, provides a very different picture to the univariate analysis. It is important to note that the middle-class concentrations are the location of decentralised service sector employment discussed in section 1.

The multivariate occupational spatial patterns, aside from the middle-class, are not as easily grouped. Clerical, sales, service workers and middle-class sub-places, can be adjacent to both middle-class and clerical, sales and service workers and the manual class. Most clerical, sales, service workers and middle-class spatial concentrations occur along railway lines, which usually have former white and coloured Group Areas on either side of the line and therefore this is where coloured desegregation is highest. This is similar to group 3 with 37 to 55% middle-class in the univariate analysis. There are clerical, sales, service workers and middle-class concentrations:

- east of the Bellville-Eersterivier railway line on the eastern side of the city;
- in the eastern part of the inner city;
- in the Helderberg basin below the railway line,
- in the Fish Hoek/Noordhoek Valley in the south-peninsula,
- and in the northern areas of Parow, Goodwood, Bellville and Kraaifontein, below the N1 highway and above the Cape Town-Bellville and Bellville-Muldersvlei railway lines.

In the south-western suburbs there is no definite spatial division between clerical, sales, service workers and middle-class and clerical, sales, service workers and manual class sub-

places; generally, however, the clerical, sales, service workers and middle-class sub-places are former white Group Areas and those in the clerical, sales, service workers and manual class are former coloureds-only areas.

Clerical, sales, service workers and manual class sub-places have an even more sporadic pattern than clerical, sales, service workers and middle-class ones. Except for a few areas near the inner city, clerical, sales, service workers and manual class sub-places fall within the railway line arc, which is where blacks were confined during apartheid. Most of Mitchell's Plain, Khayelitsha and Eersterivier fall into this group, which is interesting because Mitchell's Plain and Khayelitsha were in the lowest percentage middle-class group; however, in this analysis they are not in the manual labourer class.

Manual labour class sub-places also have a sporadic pattern. They are generally adjacent to clerical, sales, service workers and manual class sub-places. They also in the area within the railway arc and are majority coloured and black African areas. There are quite a few of these areas along the N2 highway. On the other hand, Langa and Gugulethu, two older, majority black African areas are in the clerical, sales, service workers and manual class; in the univariate analysis they are, however, grouped with the majority black African manual class sub-places. Therefore this multivariate occupational class analysis is better able to distinguish between the occupational class compositions of areas within the south-east.

Univariate vs. multivariate occupational analysis

For methodological reasons, it is important to note how the HAC analysis compares to the percentage middle-class analysis. In Table 4.7 I show the cross-tabulation of sub-places' univariate and multivariate groups. The shaded blocks are those frequencies above 40, which show the significant relationships.

Table 4.7: Comparison of ArcView and Philcarto occupational class analyses

| ArcView middle-class group | HAC group | | | | Total |
|----------------------------|------------|---|---|------------------|-------|
| | 1 (manual) | 2 (clerical, sales, service workers and middle-class) | 3 (clerical, sales, service workers and manual) | 4 (middle-class) | |
| 1 (0-18%) | 104 | 3 | 46 | 0 | 153 |
| 2 (18-37%) | 2 | 47 | 73 | 0 | 122 |
| 3 (37-55%) | 0 | 145 | 0 | 19 | 164 |
| 4 (55-100%) | 0 | 8 | 0 | 148 | 156 |
| Total | 106 | 203 | 119 | 167 | 595 |

The majority (98%) of sub-places in HAC group 1 are also in ArcView's group 1, which makes sense since HAC group 1 comprises the manual occupations and Arcview group 1 areas have an absence of middle-class occupations. The HAC and ArcView's group 4 also correspond: 89% of HAC group 4 sub-places (middle-class) fall into the highest percentage middle-class.

The multivariate HAC analysis brings something different to the geographic analysis of the middle-class because it differentiates between the univariate sub-place groups 1 (0-18%) and 2 (18-37%), and 2 and 3 (37-55%). The sub-places in group 2 (percentage middle-class) are differentiated into 47 (38%) which are in HAC group 2, clerical, sales, service workers and middle-class; and 73 (60%) which are in HAC group 3, clerical, sales, service workers and manual occupations. The majority of sub-places in the clerical, sales, service workers and middle-class group (G2) are in the percentage middle-class group 3, which makes sense as G2 includes areas which have residents employed in a mix of semi-skilled, white collar and skilled occupations. The occupational mix of clerical, sales, service workers and manual occupations separates working class group into completely manual occupational class areas and those areas with a mix of clerical, sales, service workers and manual occupations class.

The HAC multivariate analysis is able to distinguish more fully between differences in the occupational class composition of sub-places and, therefore, it more accurately shows the geographic distribution of occupations, the middle-class and the underclass.

University of Cape Town

4.3 Post-apartheid racial spatial patterns

Sections 1 and 2 have shown that middle-class employment and residence is concentrated in the former whites-only northern and south-western suburbs. I have shown that between 1980 and 2001 the skilled occupations have desegregated slightly, particularly in favour of the large coloured population. The question then is to what extent is this desegregating middle-class moving into the former whites-only areas of decentralised employment.

Here I look at the extent of desegregation of former white and coloureds-only areas, and sub-places developed after 1991. This is to determine if coloureds and black Africans are gaining access to service sector employment by their skill levels and/or residential proximity to the CBD or decentralised nodes. As shown in the univariate and HAC occupational class maps, the middle-class tends to be concentrated in former whites-only areas, while the unskilled and semi-skilled manual labour force resides in the former coloured and black African areas of the south-east. The reason for analysing to what extent sub-places have desegregated is to analyse whether the spatial manifestation of post-Fordism in Cape Town is reinforcing apartheid racial geography through global market forces influencing the location of service sector businesses in inaccessible, white-dominated areas. I have looked at racial spatial patterns in two ways: firstly, by analysing the percentage of one race in certain former Group Areas; and, secondly, I performed a multivariate analysis of the racial composition in all residential sub-places.

4.3.1 Group Area classification of residential sub-places

The Group Area racial pattern is the basis of this analysis. Figure 4.8 in section 4.2 shows the Group Area classifications of all 595 residential sub-places in Cape Town.

4.3.2 Desegregation

Desegregation of former white Group Areas: Coloured race

Former white Group Areas are where middle-class employment is currently concentrated and therefore the desegregation of these areas is foremost in understanding racial and class inequality in accessing service sector employment in Cape Town. Since the coloured population, due to their apartheid history in Cape Town, is more highly represented in the

middle-class than the black African population, the desegregation of coloureds into white areas is expected to be higher and is therefore examined first.

The percentage coloured residents of former whites-only sub-places is displayed, using natural group breaks, in Figure 4.14. The first group shows areas with 0% to 11% coloureds and the fourth group shows sub-places with 54% to 82% coloured.

University of Cape Town

Figure 4.14: Percentage coloured residents in former white Group Areas

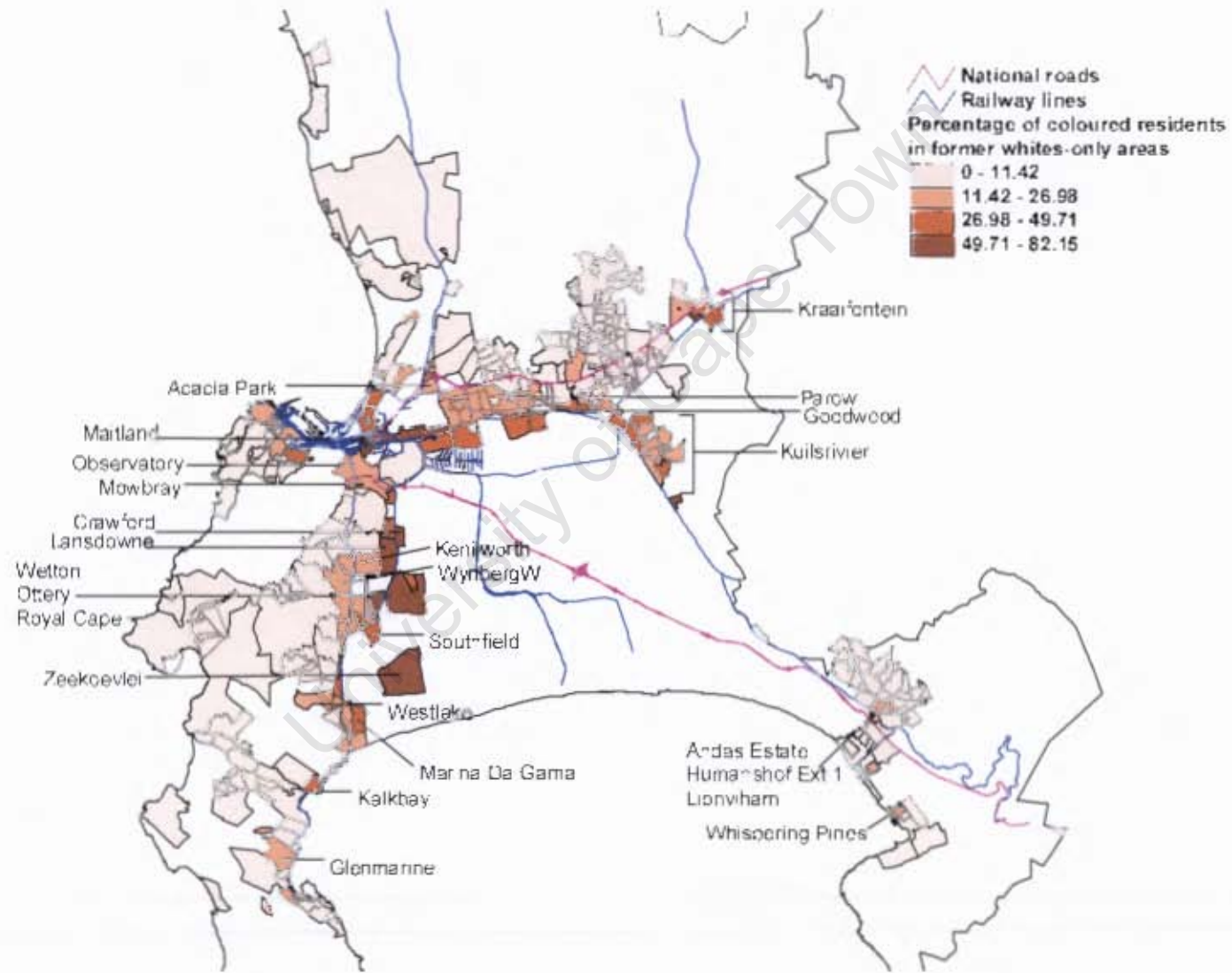


Table 4.8: Distribution of former white Group Areas: % coloured residents groups

| | Group 1 (0-11%) | Group 2 (11-27%) | Group 3 (27-50%) | Group 4 (50-82%) |
|-------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| No. of sub-places | 225 | 51 | 31 | 8 |

Table 4.8 above shows a summary of the number of former whites-only sub-places in each group. A significant majority (71%) of former whites-only sub-places are in group 1, with less than 11% coloured residents. In general, these areas are on the outer side of the white Group Area arc and are surrounded by other sub-places of the same group.

The notable spatial pattern is that the more desegregated areas are on the inner side of the arc, adjacent to former coloured Group Areas. The more desegregated areas occur linearly along the railway lines, which were Group Area boundaries. This could be because middle-class coloured households who were forced to live on the other side of the railway line during apartheid have since moved across this boundary into adjacent, former whites-only areas which have a higher socio-economic status. In the Tygerberg, coloureds moved into whites-only areas, often those from which they had been removed. These are higher income suburbs with English-medium or combined-medium schools, which have better facilities than those in former coloureds-only areas (Myburgh, 1996). Those former whites-only areas adjacent to coloured ones were the most desegregated, in particular, Parow.

The areas along the Cape Town-Bellville and Bellville-Eersterivier railway lines are where greater desegregation has occurred. These suburbs were developed as white working class suburbs (Mabin, 2005c). In the northern suburbs, a gradient is seen from those sub-places closest to the former coloured areas, which are the most desegregated; then come the sub-places between those and the group 1 white areas which have had little in-migration of other races. This pattern is very clear in the Parow and Goodwood region where those sub-places below Voortrekker Road, adjacent to coloured areas, are between 28 and 50% coloured; the sub-places above this road but below the N1 highway are between 12 and 27% coloured, and those above the N1 are less than 11% coloured. The desegregation of this region increases coloured proximity to jobs at Century City; however, there is limited public

transport to this node. The northern suburbs of Durbanville and Bellville, above the N1 in particular, have not desegregated much and this area has been the site of much commercial development in recent years. Its public transport connections from the south-east, where the black population on the whole is still concentrated, are also not as established as the radial connections to the city centre. Therefore the lack of desegregation of this area means the jobs in that node are probably dominated by the whites living in the surrounding residential areas.

Another noticeable concentration of more racially integrated sub-places is white Kuilsrivier, east of the railway line. This is near manufacturing employment and the railway line provides access to both the CBD and the Bellville and Helderberg nodes. All these suburbs have more than 11% coloured residents. There is another cluster in the Kraaifontein region in the north-east; these suburbs are close to coloured and post-apartheid majority black African sub-places. There is the Bellville-Muldersvlei railway line which connects these sub-places to the Bellville/Durbanville nexus. In the Blaauwberg region, the more desegregated areas are those closer to the inner city, near the harbour. These are areas with nearby manufacturing employment.

In the southern suburbs, Observatory and Mowbray have 11-27% coloured residents as they house many students of all races studying at the University of Cape Town and Cape Peninsula University of Technology. In this area, there is a similar desegregation gradient to that in the northern suburbs. As one moves from west to east, the desegregation of the white areas increases. Some of these sub-places, namely Wetton, Royal Cape and Ottery, were declared Free Settlement Areas (FSA) toward to the end of apartheid and therefore coloureds were allowed to move into these suburbs before 1991 when the Group Areas Act was repealed. Desegregation has mainly occurred along the railway lines and Main Road corridor, often areas from which coloureds were forcibly removed during apartheid. The location of this desegregation is important, as the Main Road is a major retail and, in some areas, office corridor, and therefore those moving closer to this corridor and nodes such as Claremont can access decentralised service sector work. The railway line, which also goes

through many of these desegregating areas, transports people to the service sector jobs along this corridor and in the CBD.

Westlake/Steenberg is a decentralised service sector node in the south-western suburbs and appears to be desegregated. However, this is misleading as the one half of Westlake, to the east of the M3 highway, is majority white residents, while on the west side of the highway there is both a low-income public housing for coloureds and black Africans and Silvertree Estate, an exclusive gated community. While this space may be deracialised it has not desegregated due to black residents being of the same class. Physical barriers separate the poor and wealthy residents and the former cannot access the same facilities as the wealthy. The government-housed residents also suffer due to a skills mismatch between the nature of the employment available in Westlake/Steenberg and the skills they possess. Only a handful are employed in the business park or as domestic workers in wealthy homes (Lemanski, 2005).

Within the CBD, a few sub-places are desegregating, namely Green Point, the CBD and Zonnebloem. The latter was the location of District Six and was declared a FSA towards the end of apartheid. This inner city desegregation is still important in Cape Town because the CBD has not become void of service sector jobs and, in fact, it is becoming a gentrified area housing the middle class rather than an inner city ghetto (Koblitz, 2006b).

The eight areas with more than 60% coloured residents are both the whites-only half of Crawford and Lansdowne, Ottery, Royal Cape and Zeekoevlei, all of which are in the southern suburbs. The other sub-places include Maitland along the Cape Town-Bellville railway line, Peerless Park West in the Kraaifontein region, and the most desegregated sub-place (82%) is Rustdal, along the Bellville-Eersterivier line. This area is separated from the rest of white Kuilsrivier by the surrounding industrial land, Blackheath Industria and Saxenburg Industrial Park, and it is near the coloured Group Area of Eersterivier. Both Ottery and Royal Cape were FSAs; whites-only Crawford and Lansdowne's high desegregation levels are also understandable given that during apartheid half of the actual sub-places were classified white and the other half, coloured. Peerless Park West, Maitland

and Zeekoevlei are all white areas adjacent to coloured Group Areas; in fact, Zeekoevlei is completely surrounded by such areas.

While the Parow and Goodwood areas in the northern suburbs are showing a degree of coloured desegregation, the south-western suburbs are where most of the highly desegregated, former whites-only areas are. This is due to the fact that historically this region had a much larger coloured population than the white-dominated northern suburbs and therefore it was harder to geographically separate whites and coloureds. In fact, the apartheid government was unable to remove all coloureds from whites-only areas, in particular, Rondebosch East and Lansdowne. In 1985, 9% of coloureds still lived in non-coloured Group Areas (Saff, 1998). Most of the apartheid 'grey areas' are in the southern suburbs and coloureds have moved back into the former whites-only areas from which they were forcibly removed (Le Fleur, 2005). This finding corroborates Saff's (1998) analysis of 1990 to 1994 inter-racial property transfers, which found that 64% of these transfers occurred in the southern suburbs, and he identifies the same desegregating suburbs.

In Table 4.9 I cross-tabulate the percentage middle-class and percentage coloured groups, and, in Table 4.10, the HAC occupation group versus percentage coloured group, to analyse whether the location of post-Fordist employment is reinforcing the apartheid racial and class inequality.

Table 4.9: Percentage middle-class group vs. Percentage coloured residents group

| % Middle-class group | Coloured desegregation group | | | | Total |
|----------------------|------------------------------|---------------|---------------|---------------|-------|
| | 1 (0-11%) | 2 (11-27%) | 3 (27-50%) | 4 (50-82%) | |
| 1 (0-18%) | 4 | 1 | 2 | 0 | 7 |
| 2 (18-37%) | 9 | 10 | 13 | 2 | 34 |
| 3 (37-55%) | 82 | 35 | 16 | 6 | 139 |
| 4 (55-100%) | 130 | 5 | 0 | 0 | 135 |
| Total | 225 | 51 | 31 | 8 | 315 |

This cross-tabulation shows that the middle-class sub-places are still dominated by the white population. These majority white sub-places are found in the far northern suburbs and on the western extent of the southern suburbs. However, desegregation has occurred in sub-

It seems therefore that residential desegregation of former white Group Areas is mostly occurring in suburbs with a clerical, sales, service workers and middle-class mix, while the mainly middle-class areas, where decentralised service sector employment is located are desegregating to a lesser extent. Therefore the distinction which this multivariate

This cross-tabulation also shows that the middle-class sub-places are the lowest desegregation sub-places. (Only 11 former whites-only sub-places have some residents employed in manual occupations (group 1 and 3). The sub-places with the clerical, sales, service workers and middle-class mix is where most desegregation has occurred. Fifty-one percent of these sub-places have more than 1% coloured residents. These clerical, sales, service workers and middle-class sub-places, are probably the same sub-places in percentage middle class group 3 (Table 4.9).

| Coloured desegregation group | | Total | | | |
|---|------------------------------|-----------|------------|------------|------------|
| HAC occupation group | Coloured desegregation group | 1 (0-11%) | 2 (11-27%) | 3 (27-50%) | 4 (50-82%) |
| 1 (manual) | 2 | 1 | 0 | 0 | 3 |
| 2 (clerical, sales, service workers and middle-class) | 84 | 43 | 24 | 7 | 158 |
| 3 (clerical, sales, service workers and manual) | 1 | 1 | 5 | 1 | 8 |
| 4 (middle-class) | 138 | 6 | 2 | 0 | 146 |
| Total | 225 | 51 | 31 | 8 | 315 |

Table 4.10: HAC occupations group vs. Percentage coloured residents group

places with 37% to 55% middle-class residents. These sub-places have residents employed in clerical, sales, service work and middle class occupations. These sub-places are mainly in Parow, Goodwood, Kuilsriver, and on the eastern extent of the southern suburbs. None of the sub-places with more than 27% coloured residents are middle-class. However, 16 of the clerical, sales, service work and middle class occupations sub-places have 27% to 50% coloured residents; and six of the eight suburbs with more than 50% coloured residents also have this occupational class mix.

occupational class analysis makes between mostly middle-class areas and those with a clerical, sales, service workers and middle-class mix is important in analysing coloured access to service sector employment. The desegregation of the clerical, sales, service workers and middle-class suburbs is significant in decreasing inter-racial inequality. In addition, although these desegregating suburbs, such as Parow, Goodwood, Kuilsrivier and parts of the southern suburbs, are often outside decentralised nodes, they are located along the railway lines and are increasing coloured residents' access to service sector employment.

Desegregation of former white Group Areas: black African race

In Johannesburg there has been extensive desegregation of the inner city: it is 88% black African, and in the northern suburbs where the middle-class reside there is 16% black Africans (Crankshaw, 2005). In Cape Town, however, the black middle-class is dominated by the coloured population, as shown in Table 4.1. Therefore as expected, there is a lesser degree of desegregation of black Africans into former whites-only areas compared to the coloured population and, since natural group breaks were employed, the group breaks for the two maps differ. Figure 4.15 shows former whites-only suburbs by their percentage black African residents and Table 4.11 shows the number of sub-places in each ArcView-assigned group.

Figure 4.15: Percentage black African population in former white Group Areas

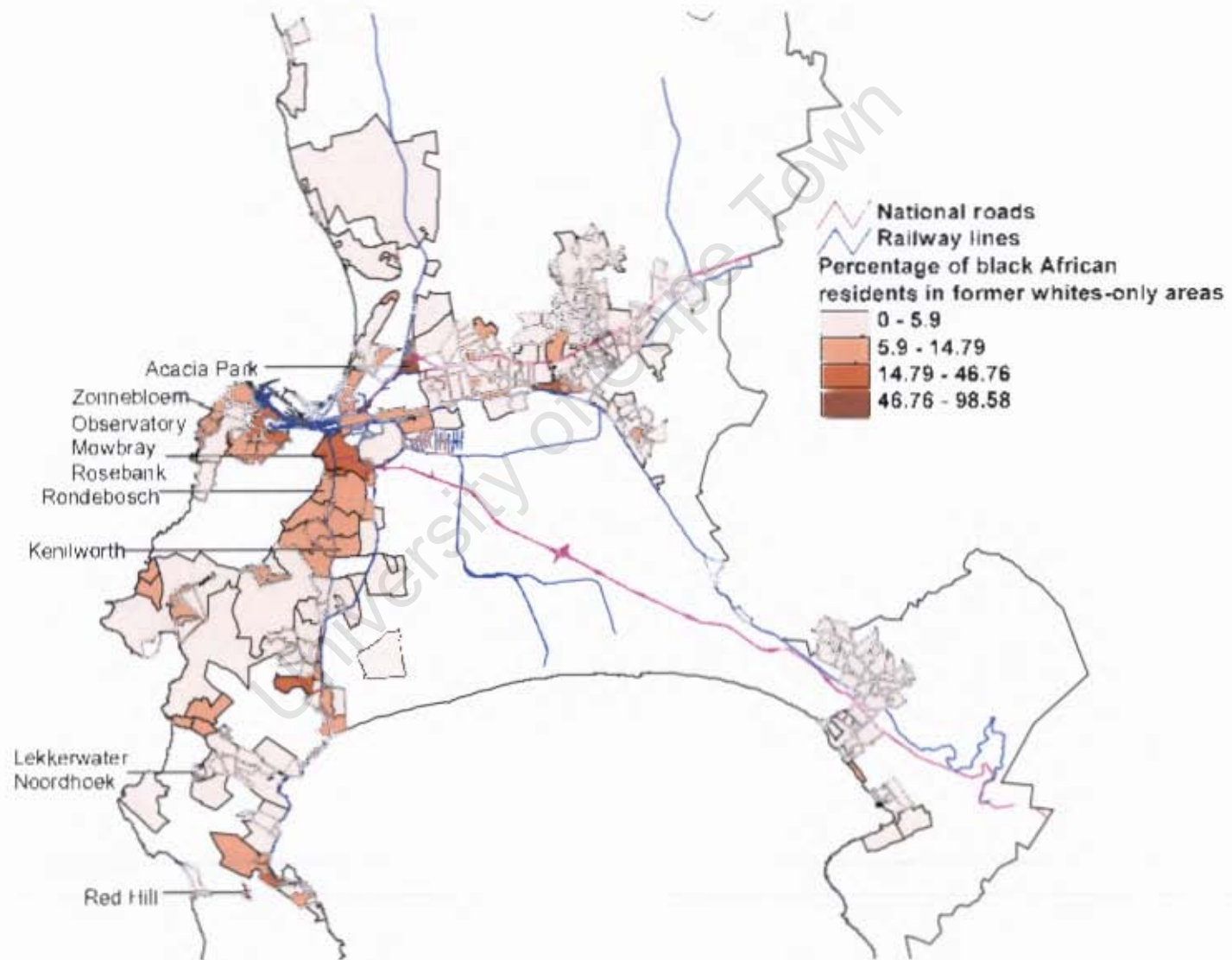


Table 4.11: Distribution of former white Group Areas: % black African residents groups

| | Group 1 (0-6%) | Group 2 (6-15%) | Group 3 (15-47%) | Group 4 (47-99%) |
|-------------------|---------------------------|----------------------------|-----------------------------|-----------------------------|
| No. of sub-places | 247 | 51 | 13 | 4 |

The pattern of black African desegregation into former whites-only areas differs greatly from the linear gradient pattern of increasing coloured desegregation in former white areas to the south in the northern suburbs and east in the south-western suburbs. If the same percentage coloured class breaks are used for black African desegregation 285 sub-places (90%) fall into the lowest desegregation group whereas, with the natural class breaks, 78% of sub-places have less than 6% black African residents. No black African areas were adjacent to whites-only areas during apartheid and therefore the movement into adjacent, better-off areas is more likely to be into former coloureds-only areas.

It is also interesting to note that many of those northern areas which showed coloured desegregation are in the lowest group for black African desegregation. There are 17 sub-places which have 0% black Africans, eight of which are in the northern suburbs, three in the Helderberg and six in Fish Hoek and Simonstown in the South Peninsula.

Most of the city centre sub-places have between 6% and 47% black African residents, which is interesting because other South African inner cities have high percentages of black African residents because rental accommodation is cheap and available. However, in Cape Town many of these sub-places housed the majority white middle class throughout apartheid rather than having black Africans move in from the 1970s, as occurred in Johannesburg (Crankshaw & White, 1995). And since then many inner city suburbs in Cape Town have also gentrified rather than become rundown, as is the case in other South African cities. Therefore white flight from the inner city to the suburbs has not occurred to the same extent as Johannesburg. There is, however, a band of sub-places with 20% to 47% black Africans, stretching from the city centre and Zonnebloem to Mowbray, Observatory

and Rosebank where many students, of all races, reside. Therefore, these black African residents have close proximity to service sector employment in the CBD.

There are a scattering of sub-places with 6-15% black African residents, in the northern suburbs but there are no clusters or linear patterns. The four former whites-only areas which have between 64 and 83% black African populations, are: Acacia Park, which is parliamentary housing, and Lekkerwater, Noordhoek and Red Hill in the south peninsula. These latter three sub-places differ to the rest of former whites-only areas in Cape Town and their racial composition is not desegregation in the conventional sense. Although the land was classified 'whites-only' there was no formal housing upon it and black African working as gardeners, domestics, in construction, fishing or casual labour in the area began squatting. Toward the end of apartheid they became site-and-service schemes for black Africans. Therefore although these areas are desegregated there was no white population living there previously and the location of these areas does not increase the black African residents' access to service sector employment. These residents are also not able to access the facilities in these areas and therefore Saff (1994b) describes them as deracialised rather than desegregated. Adjacent to Acacia Park is Summer Greens, a suburb which is truly racially integrated with 24% black Africans, 38% coloured and 34% white residents. These two suburbs are very well located for the manufacturing employment available in Montague Gardens and Killarney Gardens as well as the finance, IT and management businesses at Century City.

The south-western suburbs are where most suburbs with more than 6% black Africans are located. Aside from this cluster and Lekkerwater, Noordhoek and Red Hill, five Simonstown sub-places range from 6% to 33% black African residents. This is probably due to the Naval base, and thus naval housing, there.

The extent of black African desegregation into former white areas is not extensive and sub-places which do house some black Africans tend to be scattered and more prominent in the south-western suburbs and inner city, than the northern suburbs. As mentioned earlier, the two southern suburbs which contain some of the black African middle-class are Kenilworth

and Rondebosch. Black African middle-class desegregation has not occurred to the same extent as middle-class coloured desegregation and, as discussed in section 2.2.1, the black African middle-class generally still resides in former black African-only areas. Saff (1998) states that black Africans in Cape Town, unlike coloureds, have no residential history in middle-class areas, and that they prefer the lifestyle and vibrant social scene in the townships, which explains the fact that most middle-class black Africans remain in majority black areas. Therefore this black African middle-class's access to service sector employment opportunities in decentralised nodes is more limited than that of the desegregating coloured clerical, sales, service workers and middle-class population.

Tables 4.12 and 4.13 show the cross-tabulation of the percentage middle-class and percentage black African groups, and the HAC occupation group versus percentage black African group, respectively. This is to analyse whether the location of post-Fordist employment in former whites-only areas is reinforcing the apartheid racial and class inequality.

Table 4.12: Percentage middle-class group vs. Percentage black African residents group

| % Middle-class group | Black African desegregation group | | | | Total |
|----------------------|-----------------------------------|--------------|---------------|---------------|-------|
| | 1 (0-6%) | 2 (6-15%) | 3 (15-47%) | 4 (47-99%) | |
| 1 (0-18%) | 3 | 0 | 1 | 3 | 7 |
| 2 (18-37%) | 20 | 10 | 4 | 0 | 34 |
| 3 (37-55%) | 110 | 22 | 6 | 1 | 139 |
| 4 (55-100%) | 114 | 19 | 2 | 0 | 135 |
| Total | 247 | 51 | 13 | 4 | 315 |

As one can see from this cross-tabulation, the middle-class, former whites-only areas have very few black African residents. Only 50 sub-places with more than 37% middle-class residents have more than 6% black Africans. The table below shows a more detailed occupational breakdown of the suburbs with larger percentages black African residents (Table 4.13).

Table 4.13: HAC occupations group vs. Percentage black African residents group

| HAC occupation group | Black African desegregation group | | | | Total |
|---|-----------------------------------|--------------|---------------|---------------|------------|
| | 1 (0-6%) | 2 (6-15%) | 3 (15-47%) | 4 (47-99%) | |
| 1 (manual) | 0 | 0 | 0 | 3 | 3 |
| 2 (clerical, sales, service workers and middle-class) | 126 | 23 | 8 | 1 | 158 |
| 3 (clerical, sales, service workers and manual) | 3 | 4 | 1 | 0 | 8 |
| 4 (middle-class) | 118 | 24 | 4 | 0 | 146 |
| Total | 247 | 51 | 13 | 4 | 315 |

This cross-tabulation shows similar patterns to Table 4.12; however, there are more middle-class areas with 6% to 15% black Africans, compared to only six middle-class sub-places which had 11-27% coloured residents (Table 4.10). However, if the percentage coloured group breaks were used, there would be far more middle-class areas with less than 6% black African residents. The clerical, sales, service workers and middle-class suburbs, which were the site most coloured desegregation, have far fewer black African residents. This makes sense given that most middle-class black Africans remain in the former black African townships and coloured and black African residential integration is not high due as will be discussed in the next section.

From these occupation and race cross-tabulations it is clear that most former whites-only areas, where decentralised service sector employment opportunities exist, have fewer than 15% black African residents. On the other hand, three inner city suburbs, Zonnebloem, Cape Town CBD and Central, have between 20% and 30% black African populations and, since the CBD is still an important service sector node, they have closer proximity to work opportunities; however, these suburbs only contain 0.5% of the black African middle-class in Cape Town. Overall, the coloured middle-class is much more prominent in the CBD and decentralised former whites-only areas and they are therefore better able to access these employment nodes.

Desegregation of former coloured Group Area: black African race

Because coloured and black African Group Areas were adjacent to one another, I assumed that, after 1991, better-off black Africans would have moved into former coloureds-only areas, which were of a higher class. It seems that this was not the case as shown in Figure 4.16 below which displays the percentage black Africans in former coloured Group Areas. The natural group breaks are even lower than those for percentage black African in former white areas. Table 4.14 shows the breakdown of the number of sub-places in each ArcView natural breaks group.

University of Cape Town

Figure 4.16: Percentage black African population in former coloured Group Areas

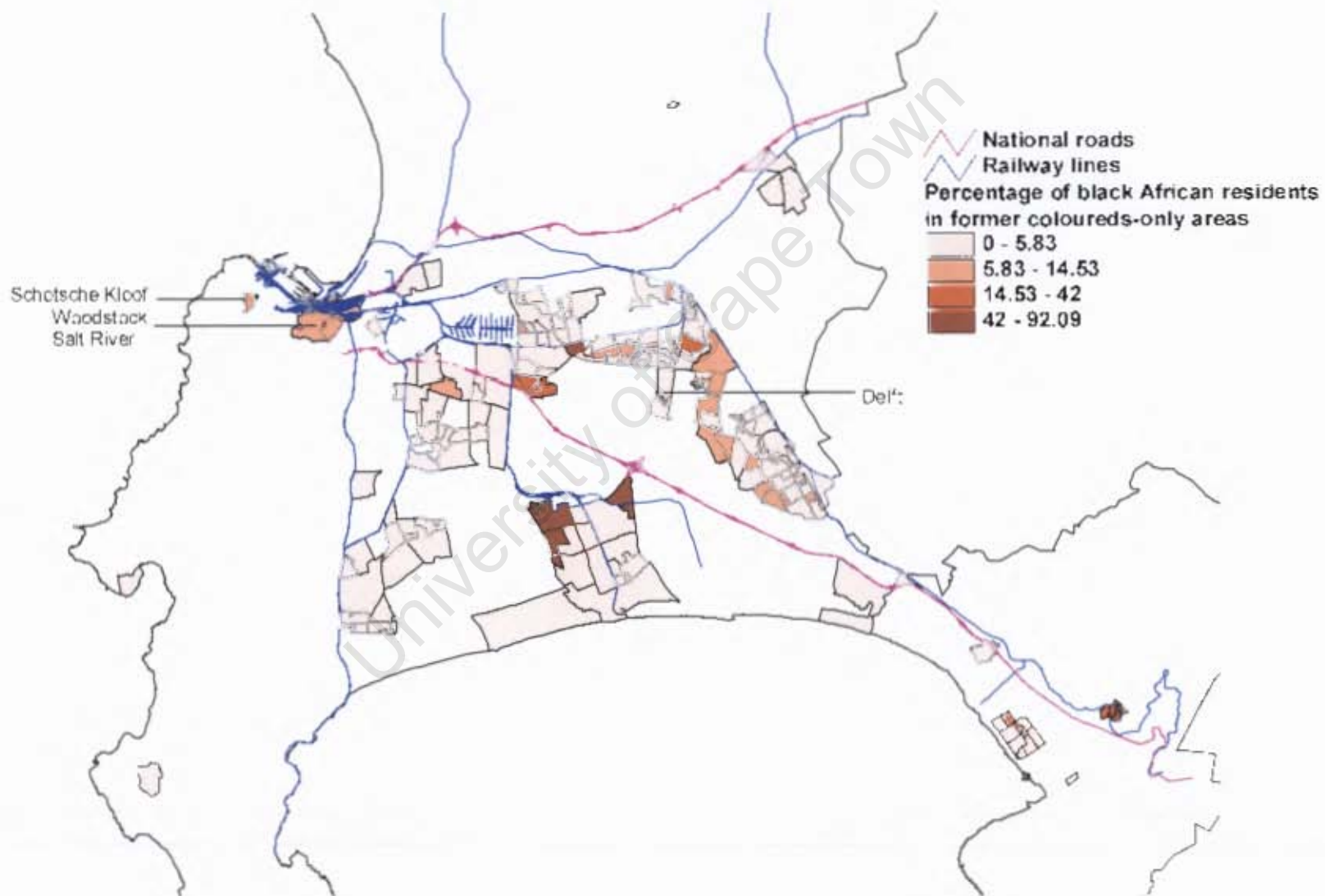


Table 4.14: Distribution of former coloured Group Areas: % black African residents groups

| | Group 1 (0-6%) | Group 2 (6-15%) | Group 3 (15-42%) | Group 4 (42-92 %) |
|-------------------|---------------------------|----------------------------|-----------------------------|------------------------------|
| No. of sub-places | 147 | 19 | 8 | 6 |

The extent of black Africans moving into majority coloured areas, which are generally of a higher class, is not great. Eighty-two percent of former coloureds-only areas have 6% or less black African residents, and only 14 sub-places have more than 15% black Africans. This is interesting because after the repeal of the Group Areas Act in 1991 I would have assumed that better-off black Africans, who perhaps could not afford the property prices of the former whites-only areas, would have moved out of their designated areas into coloured areas as they were generally of higher income than black African areas. However, it is clear that this has not occurred.

Three of the six sub-places with more than 15% black African residents are part of, or are adjacent to, Mitchell's Plain. This is logical as they border the black African area of Khayelitsha. Aside from the Mitchell's Plain's cluster of highly desegregated areas, there does not appear to a clear pattern of desegregation, although the sub-places with higher percentage black African residents tend to be adjacent to former black areas or surrounding the airport area. The most noticeable concentration of areas with more than 6% black African residents are in the east, along the Bellville-Eersterivier railway line.

It is interesting that the Malay-classified Schotsche Kloof and Woodstock and Salt River, which were racially mixed during apartheid and border the CBD, have 6-15% black African residents; however, the apartheid areas of Delft, developed in 1989 for combined black African and coloured low-income housing, have less than 6% black African residents. In addition, with the exception of the Helderberg, the coloured areas with higher percentages of black African residents are not those near the former whites-only areas. This is probably because the property prices in former coloureds-only areas neighbouring the former whites-only areas would be higher.

The movement of black Africans into coloured areas since the end of apartheid has been very limited, which could be due to cultural, linguistic and political differences. Some black Africans were allocated public housing in Retreat, a former coloureds-only area but due to linguistic social segregation these two races are not highly integrated (Mabin, 2005b). Saff (1998) also identifies competition between the two races for land, housing and employment as impeding racial integration. The majority of black Africans have also only come to Cape Town since the mid-1980s, when influx control and the Coloured Labour Preference Policy was abolished, and they tend to be poor, unskilled rural migrants. Therefore they tend to concentrate in informal settlements, post-1991 low-income public housing areas or areas where their family connections, who lived here during apartheid, reside. The areas in which they are dominant are far from unskilled, service sector employment in the CBD and northern suburbs and the informal sector dominates the majority black African areas.

4.3.3 Multivariate analysis of racial desegregation

As with the occupational class distribution, the racial composition of sub-places in Cape Town will also be analysed using Philcarto, which allows for a multivariate analysis. This racial analysis allows for a more detailed picture of the racial mix of sub-places than the one-dimensional ArcView analysis because the three major races, white, coloured and black African, can be displayed together in the model. I used triangular diagrams and the results shown are, firstly, separate maps for former whites-only, coloureds-only and post-1991 developed suburbs, and, secondly, all residential sub-places are looked at together on one map. Former Indian-only areas will not be included with the former coloureds-only area group because the Indian race is not included in the model and its position in the triangle would, therefore, be misleading.

Racial mixing in the sub-places is shown below in terms of their percentage coloured, black African and white populations. The model assumes that these percentages sum to 100%; however, the exclusion of the Indian population should not make much of a difference to the racial spatial patterns in Cape Town because it is such a small population (1.6%). Each sub-place's position within the triangle affects its group assignment. The default geometric

classification of the sub-places was altered to provide a true picture of racial mixing in Cape Town in line with the natural breaks used in the univariate analysis. I first displayed the racial mixing of former whites-only and coloureds-only Group Areas and post-1991 developed areas in Figures 4.17, 4.20 and 4. 21. Thereafter, I mapped all 595 residential sub-places (Figure 4.23).

University of Cape Town

Former white Group Areas

Figure 4.17: Racial mixing of former white Group Areas

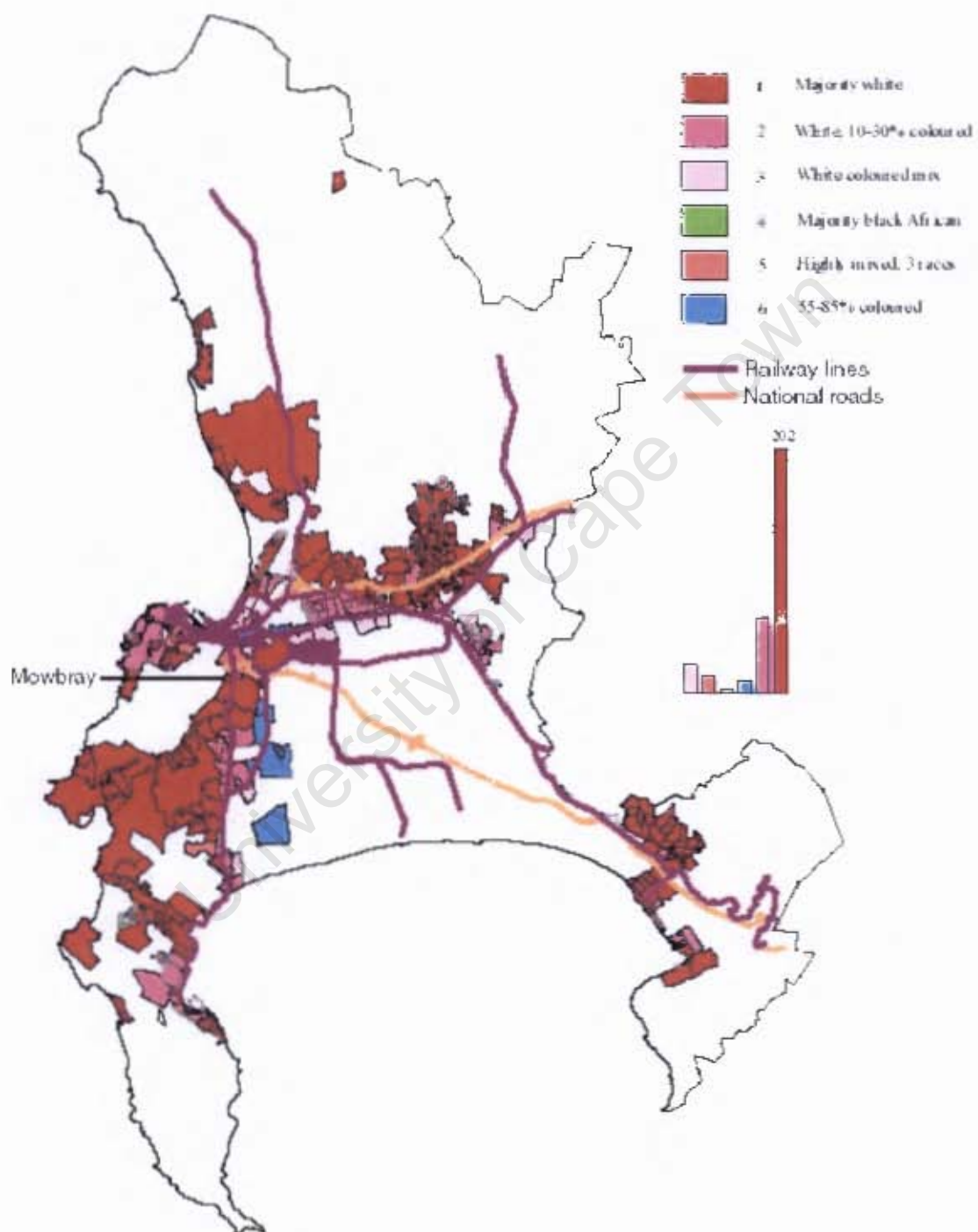


Figure 4.18 below shows the racial composition of each of the sub-places above. Each dot is interpreted as follows: the sub-place's percentage coloured is indicated by the horizontal line to the right side (y) of the triangle. Its percentage white is indicated by the diagonal line which slopes left toward the base (x) of the triangle, and its percentage black African population is indicated by the diagonal line which slopes upward to the left side, z. An example is given by the blue lines drawn on the figure below. This sub-place is Mowbray, which is 47% black African, 14% coloured and 37% white.

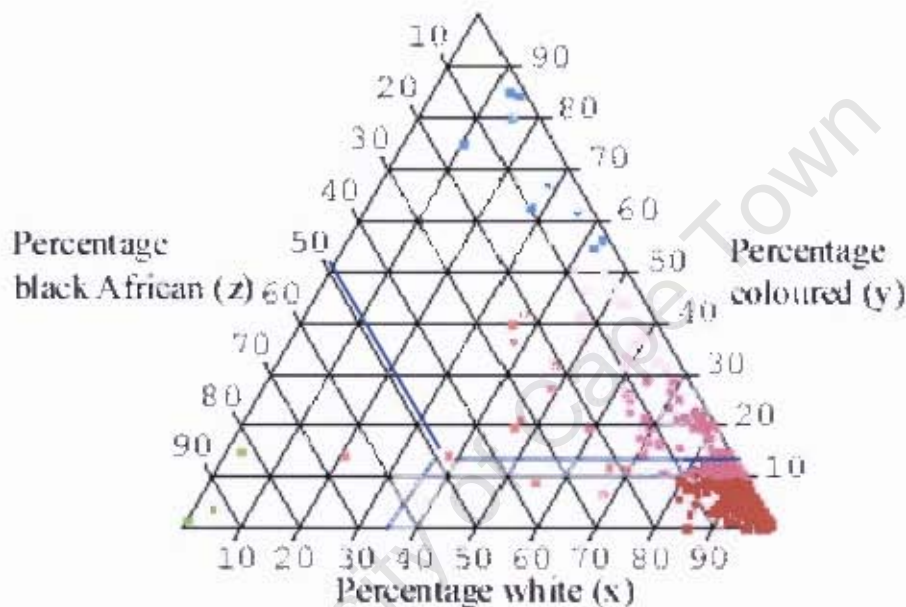


Figure 4.18: Triangular diagram of races for former white Group Areas

The majority of former white Group Areas (64%) have less than 10% coloured and less than 18% black African residents (group 1, red). The group 2 (dark-pink) sub-places have between 10% and 30% coloured and less than 15% black African residents. Within that range the sub-places tend to cluster between 10% and 15% coloured residents and also around 20% coloured residents. These slight desegregated (group 2) areas form a line in the northern suburbs above Voortrekker Road and the Cape Town-Bellville railway line and below the N1. They are also clustered in Kuilsrivier, east of the Bellville-Fersterivier railway line, and in the city centre. In the northern suburbs, it is interesting to note the gradient increasing coloured residents as one moves southward. The majority white (group 1, red) sub-places are furthest north, slightly desegregated (group 2, dark pink) sub-places

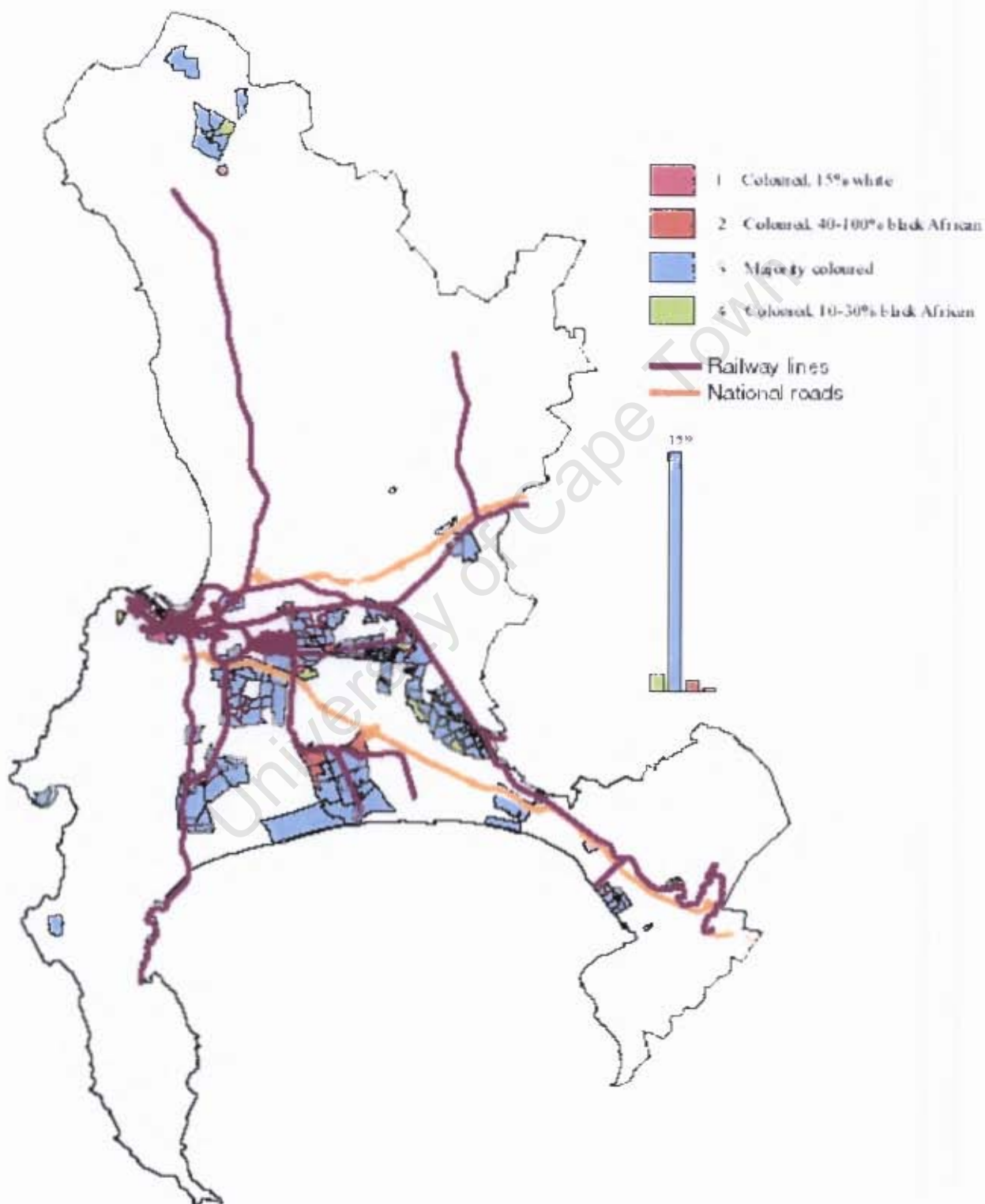
are south of them and south of those areas along or below the railway line, are the sub-places with 30% to 50% coloured residents (group 3, light pink). This is similar to the increasing percentage coloured residents gradient described in the percentage coloured analysis. The gradient of coloured in-migration is much clearer in the northern suburbs because those former whites-only areas, particularly Goodwood and Parow, have cheaper property prices than the south-western suburbs.

During apartheid, there were fewer coloured residents in the northern suburbs and therefore separating the races by using the railway line was simple. However, in the southern suburbs there was a greater coloured population, which would have required major relocation, and therefore the physical divide between white and coloured Group Areas was not as clear-cut in the northern suburbs. Therefore the former white Group Areas in the south-west, which now have more than 50% coloured residents (blue, group 6), are highly desegregated due to the proximity of adjacent or surrounding former coloureds-only areas (not displayed on this map). Some are the also the Free Settlement Areas of Wetton, Ottery and Royal Cape discussed in section 4.3.2. There are far fewer group 2 and 3 (slightly desegregated) sub-places in the south compared to the northern suburbs. There are three sub-places with majority black African residents (group 4, green), all in the south peninsula, which large black African populations. These sub-places are Red Hill, Lekkerwater and Noordhoek, which had squatters living there toward the end of apartheid and were converted to site-and-service schemes. Therefore they are deracialised rather than desegregated.

Group five (orange) sub-places are far more racially mixed than the ones discussed above, which are either majority white or coloured. These sub-places range from 20% to 65% black African, 20% to 70% white and 5% to 40% coloured. They include Westlake in the south peninsula; Cape Town CBD, Zonnebloem in the inner city; Acacia Park north of the Cape Town-Bellville railway line, and Observatory, Mowbray and Rosebank, adjacent to one another near the city centre.

Former coloured Group Areas

Figure 4.19: Racial mixing of former coloured Group Areas



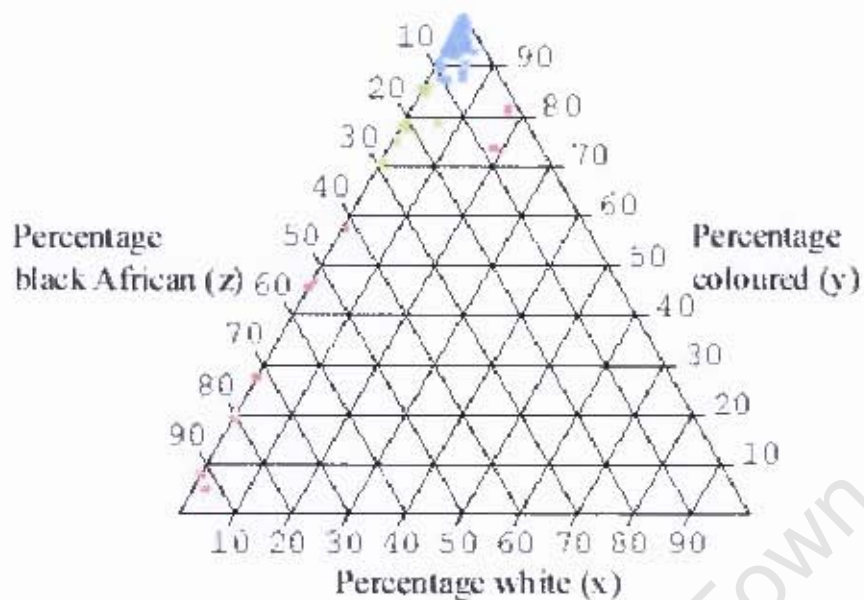


Figure 4.20: Triangular diagram of races for former coloured Group Areas

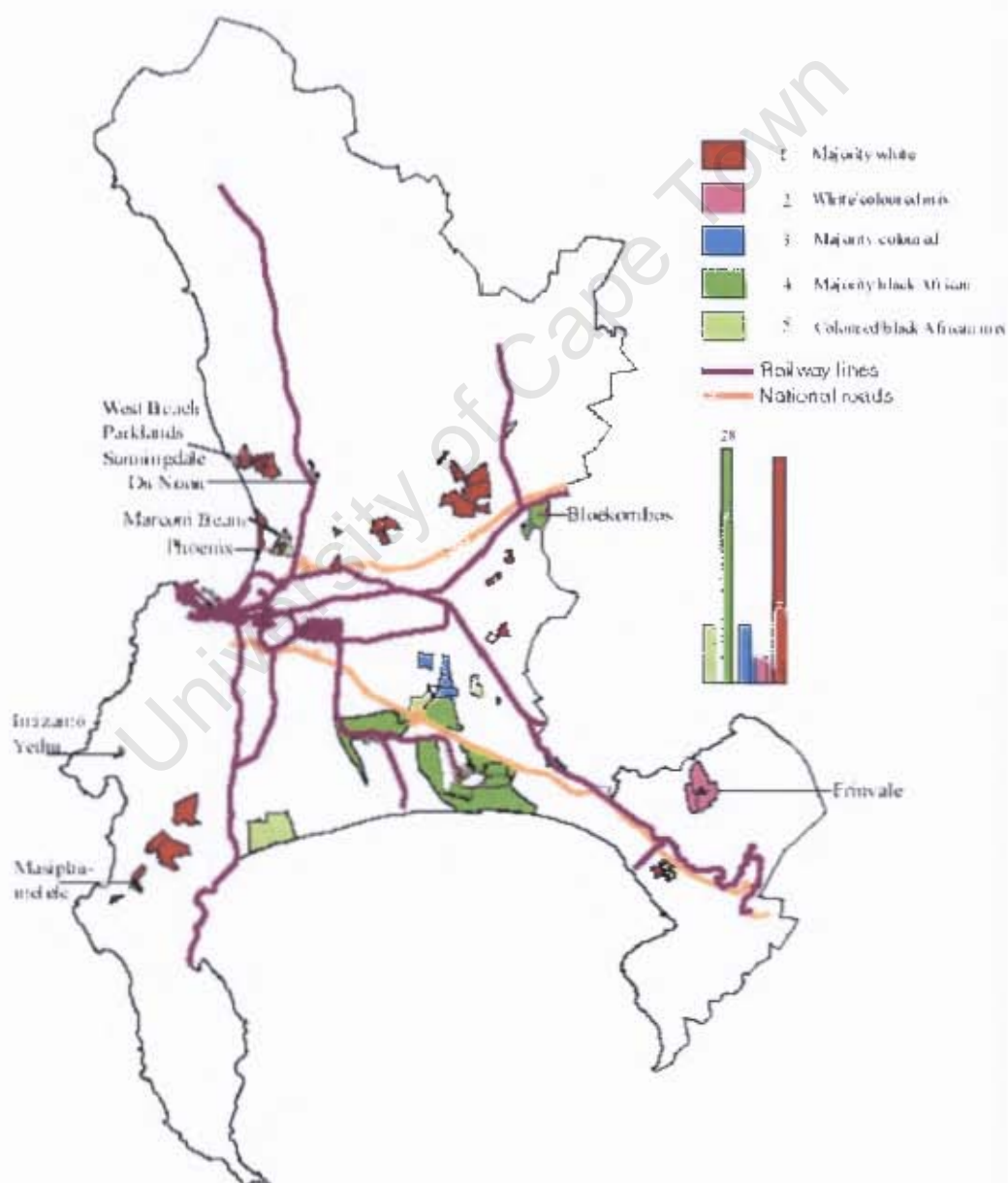
The former coloureds-only areas have not had significant in-migration of white and black African residents. In the majority (88%) of former coloureds-only areas, at least 87% of the residents are coloured and less than 10% are either black African or white (Figure 4.20). There are two group 1 (pink) areas which stand out as they have experienced some in-migration of whites. These two suburbs have more than 70% coloured residents but they also have a 16% to 18% white population. They are Woodstock in the inner city, which was quite mixed during apartheid, and Riverton, which is adjacent to the white, working class area, Ruyterwacht, in the Goodwood region.

There are some former coloureds-only areas which have experienced significant black African in-migration. These group 2 (orange) areas have more than a 40% black Africans. They are the same most desegregated former coloured Group Areas discussed in section 4.3.2. The group 4 (green) areas are slightly desegregated in terms of black Africans; however, there does not appear to be a spatial pattern to these areas.

Post-1991 developed sub-places

I analysed the suburbs developed after 1991 next, as shown in Figure 4.21 below. I could only use the multivariate analysis to look at the post-apartheid suburbs because they varied too greatly in terms of their racial compositions to map the percentage of one race only. I specifically wished to look at the 72 post-apartheid areas separately to analyse whether they simply took on the racial character of their Group-Area-classified neighbours.

Figure 4.21: Racial mixing of suburbs developed after 1991



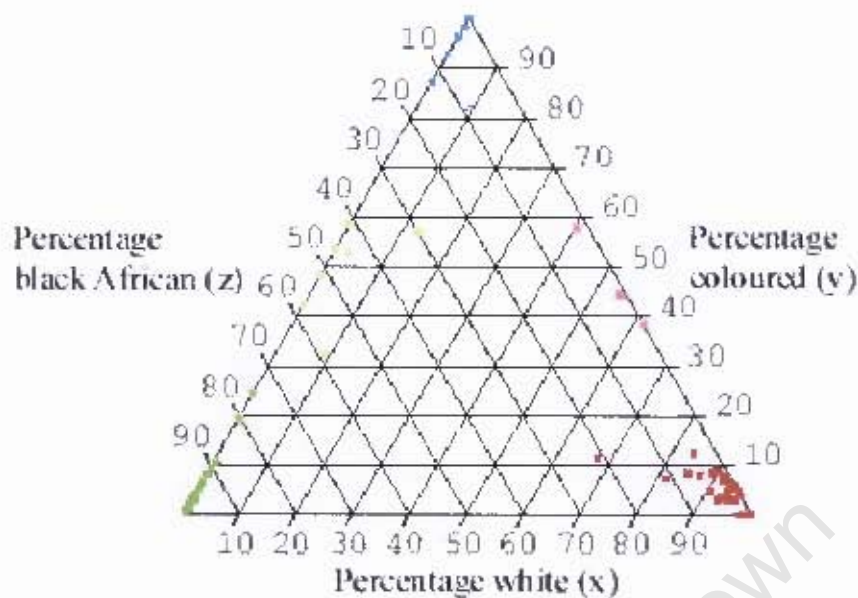


Figure 4.22: Triangular diagram of races for suburbs developed after 1991

In light of the location of decentralised employment in Cape Town, I was particularly interested in the suburbs developed after 1991 around the former whites-only areas of Durbanville and northern Blaauwberg. These areas are the recent commercial and industrial development hotspots and middle-class housing is cheaper than in the southern suburbs. Therefore I assumed that the newness and relative cheapness of housing would mean these new middle-class suburbs would be more desegregated than former whites-only southern suburbs. However, it seems that these suburbs, such as Parklands, Sunningdale and West Beach in northern Blaauwberg, are majority white with less than 10% either coloured or black African residents. Their racial compositions are the same as their former white Group Area neighbours.

Generally, all the suburbs shown on the map have the same racial composition as their neighbouring former racially-classified sub-places. Many low-income public housing schemes have been built since the end of apartheid and there has been a high black African migration rate from the Eastern Cape; therefore, 28 of the 72 post-apartheid sub-places are comprised of more than 75% black Africans and they border the apartheid black African areas. Other majority black African post-apartheid areas are in the Helderberg, adjacent to

former coloured areas, and on the north-eastern edge of the city adjacent to former whites-only areas. Bloekombos, in the Kraaifontein region, together with, Marconi Beam next to Milnerton, Site 5 (Masiphumelele) in Noordhoek and Imizamo Yethu in Hout Bay, are majority black African sub-places within white dominated regions (Figure 4.21). They were informal settlements as a result of land invasions and were proclaimed transit areas after the repeal of the Group Areas Act in 1991 (Cooper *et. al.*, 1992). These black sub-places within white-dominated regions, together with Noordhoek, Lekkerwater and Red Hill, came about due to a shortage of housing in black African areas and have not meant that the black residents have gained access to facilities in the surrounding majority white areas (Saff, 1994b; 2001). Du Noon, a public housing scheme and shack settlement, is another majority black African post-1991 area adjacent to white Milnerton. Of these areas, only Marconi Beam and Du Noon along Koeberg Road in the Blaauwberg region, provide good access to the growing industrial and commercial jobs available in the north.

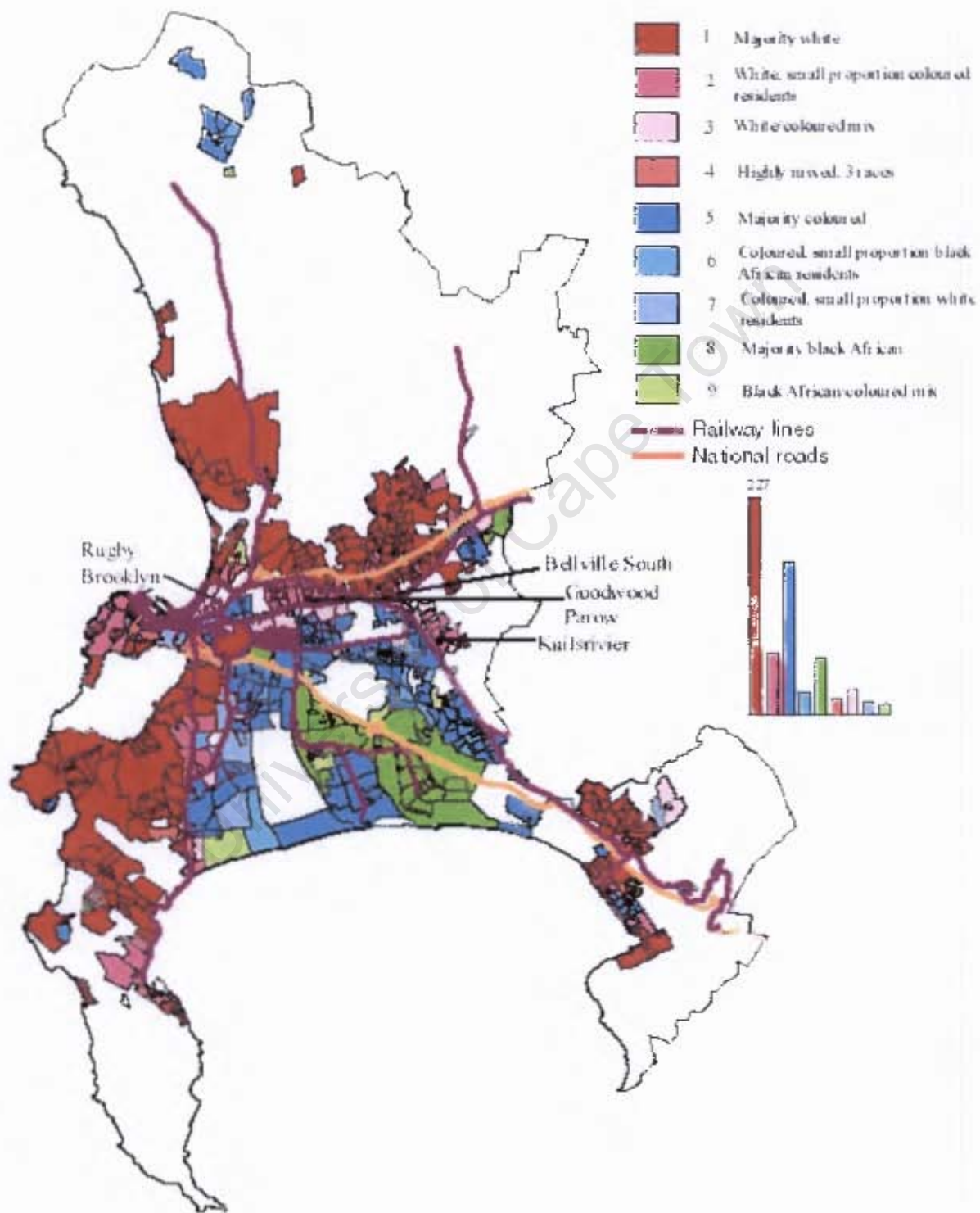
There are a few other majority black post-1991 sub-places in the Blaauwberg region (Figure 4.21). There are two mixed black African/coloured residents sub-places (group 5, light green), Phoenix and Marconi Beam; the latter is no longer an informal settlement. Phoenix's residents are 55% coloured, 29% black African and 13% white; and Marconi Beam has 58% black African and 32% coloured residents. Moreover, in terms of their skill and education levels, almost a quarter of Phoenix residents are employed in middle-class occupations and 32% are manual labourers. Almost a fifth of Marconi Beam residents are employed in middle-class occupations, and almost a half in manual occupations. These two black areas in a white-dominated region have more middle-class residents than many majority black areas in the south-east and these residents can access manufacturing employment at Montague Gardens, Killarney Gardens and Paarden Eiland, and service sector employment in the nearby CBD and Blaauwberg. However, the unemployment rate in Marconi Beam is 27% and therefore while residents may not suffer from a spatial mismatch in employment; a skills mismatch between the residents and the skills required by the light manufacturing and wholesale retail, which is growing in the region, could be contributing to unemployment.

The portion of Muizenberg, on the south-western coast, developed after 1991 is also a mixed black African/coloured sub-place (group 5, light green). It is an interesting area as it is adjacent to former white, coloured and Indian Group Areas. Its racial composition is also important because Capricorn Park, which is within this sub-place, is growing as a light industrial area and is drawing on the labour of the nearby working class residents. The pattern of sub-places with more than 77% coloured residents (group 3, blue) is that they are adjacent to former coloureds-only areas. The three mixed white/coloured sub-places (group 2, pink) are adjacent to former whites-only areas. However, Erinvale, the large mixed white/coloured suburb in the Helderberg, is a majority white suburb if domestic workers and gardeners are excluded. Erinvale Estates, adjacent to it, houses the local farm workers.

Overall, areas developed since 1991 have the same racial composition as their surrounding apartheid-classified suburbs. The market drives the location of these newly developed areas both in terms of the post-apartheid government's public housing in the south-east and the new middle-class suburbs being developed within former whites-only regions. These latter residential developments are particularly in the northern suburbs, which have space for new, low-density developments, and they are close to growing decentralised service sector employment nodes. The house prices on the northern periphery are lower than the south-western suburbs, and I would have therefore expected some of the coloured middle class to move there; however, these suburbs have majority white residents. This is interesting because, in other South African cities such as Pretoria and Johannesburg, there have been newly developed middle-income areas near to black townships which have undergone significant desegregation (Horn, 2002; Horn & Buyisiwe Ngcobo, 2003). However, in Cape Town, the only newly developed areas near townships are those of low-income public housing, which is also reinforcing apartheid patterns and reinforcing the continuation of an excluded ghetto in the south-east sector.

Racial mixing in all residential sub-places

Figure 4.23: Racial mixing of all residential sub-places



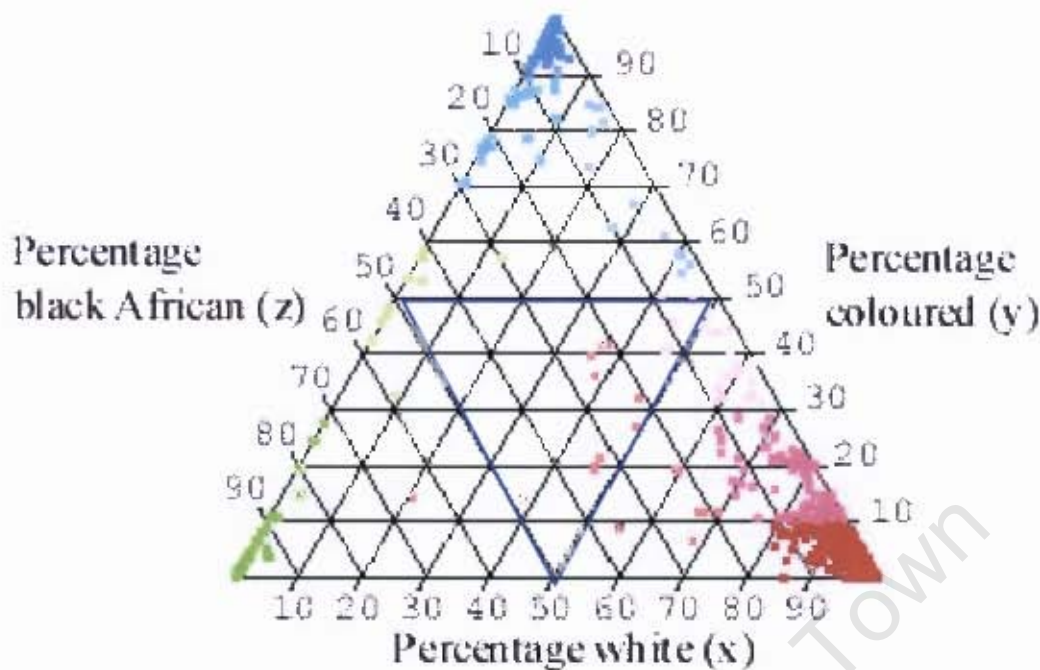


Figure 4.24: Triangular diagram of racial composition for all residential sub-places

Spatial patterns of desegregation

The middle-class suburbs in the north and south-west, where decentralised service sector employment is growing, still house mostly white residents and the black population is at a disadvantage in accessing these areas. However, there is increasing in-migration of coloured residents into Parow, Goodwood, Kuilsrivier and southern parts of Bellville, as well as some racial mixing in Brooklyn and Rugby in southern Blaauwberg. This increases middle-class coloured residents' access to these employment nodes. Brooklyn and Rugby and the six sub-places developed after 1991, which were singled out in the previous section (some still majority white and others mixed coloured and black African residents), are also very close to Montague Gardens and Killarney Gardens where light industry is growing. The eastern part of the south-western suburbs, along the railway lines, has quite a large coloured population due to their residential history in these suburbs. Therefore as mentioned previously, this middle-class coloured population has easier access to the southern suburbs nodes and the CBD via the nearby railway line. The Helderberg basin, which has also experienced commercial growth, particularly with the redevelopment of AECI land, is still very much racially divided along Group Area boundaries and the region

is white dominated. However, this node is far closer for the black residents of Khayelitsha and Mitchell's Plain than the northern suburbs.

As mentioned in section 4.1, the CBD still contains many service sector businesses and therefore those blacks living near major public transport lines, such as the railway, can gain access to employment opportunities on offer in the CBD. However, as Borel-Saladin's (2006) analysis showed, Cape Town's occupational structure has been professionalising between 1980 and 2001 and therefore even those unskilled workers who are well positioned in relation to where service sector businesses are located, will not necessarily be able to find work. The semi-skilled workers who have suffered due to a decline in manufacturing employment and the professionalisation of skills level requirements, will have to compete with the unskilled labour force in Cape Town for service sector work in the CBD, southern and northern suburbs.

This racial and class analysis has been useful in substantiating the argument that new service sector employment growth is still occurring where whites and the middle class live. Furthermore, professional blacks have not moved into middle-income, post-apartheid residential developments, but new sub-places generally have the same racial character as their Group Area neighbours. However, those former white Group Areas adjacent to former coloured Group Areas in both the northern and south-western suburbs have had the greatest in-migration of coloured residents. These suburbs contain a mixture of clerical, sales, service worker and middle-class occupations. Middle-class occupations have desegregated since 1980, with a particular increase in the coloured middle class and therefore inter-racial inequality between whites and coloureds has decreased. This has manifested spatially in the residential desegregation of the suburbs with residents employed in clerical, sales, service worker and middle-class occupations. Class inequality within races has increased in importance. Unlike Johannesburg, the in-migration of the smaller black African population into areas of decentralised service sector employment has not occurred to a significant extent, and the black African middle-class has tended to remain in majority black African areas in the south-east. The southern suburbs of Kenilworth and Rondebosch are the only former white Group Areas with a significant proportion of the black African middle class.

There is a southward gradient of increasing proportions of coloured residents in the northern suburbs, which I also pointed out in the percentage coloured residents analysis. There are majority white suburbs (group 1, red) on the north periphery, south of these are suburbs with mainly white residents and a small proportion coloured residents (group 2, dark pink), and south of these, but north of the majority coloured sub-places, are suburbs with 30% to 50% coloured residents and 45% to 75% white residents (group 3, light pink). These desegregating suburbs include those in Parow, Goodwood and south Bellville. South of the mixed white and coloured suburbs, are majority coloured areas (group 5, dark blue). It is interesting that the sub-places with mostly coloured and a small proportion of white residents (group 7, mid-blue) do not feature in this southward gradient of increasing percentage coloured residents; even though they have more coloured residents than the mixed white and coloured suburbs (group 3) and less than the majority coloured suburbs (group 5).

The group 7 sub-places tend to be east of the majority white, south-western suburbs (group 1, red). They are mainly former whites-only areas which have become very desegregated with 55% to 75% coloured residents. Suburbs with, mainly coloured residents and a small black African population (group 6, bright blue) are scattered amongst the majority coloured areas (group 5), mainly within the south-east, but not along the railway line arc. The very racially mixed (group 4, orange) sub-places are mainly former whites-only areas and many are very close to the CBD. This is significant because unlike Johannesburg's CBD, which is highly desegregated but has lost most service sector business to Sandton, the Cape Town CBD is still a large location of service sector employment.

Racial composition group description

The majority of sub-places in Cape Town (65%) are either between 80% and 100% white or above 90% coloured (Table 4.15). There are 227 (38%) majority white sub-places (group 1) and 160 (27%) majority coloured sub-places (group 5). The pattern of these sub-places follows apartheid Group Area geographies. There are 59 (10%) sub-places with more than 80% black African residents (group 8), and 64 (11%) mainly white suburbs with between 10% and 30% coloured residents (group 2). In terms of the number of people in each group, the groups containing the largest percentage of residents are:

- the over 90% coloured residents suburbs (group 5), which contain 41% of Cape Town's population;
- the over 80% black African residents sub-places (group 8), which contain 28% of the population;
- the over 80% white residents suburbs (group 1), which contain 13%.

Therefore these three classes account for 84% of the city's population, which shows that the racial segregation of Cape Town's races still exists. The triangular diagram shows that the majority of sub-places are located in the vertices and the only side of the triangle with a relatively significant number of sub-places, showing racial mixing, is the side along the white-coloured axis (Figure 4.24). This shows that most desegregation in Cape Town is that of whites and coloureds integrating. Also, the blue triangle in Figure 4.24 highlights the 16 sub-places with less than 50% of any race, i.e. very racially mixed suburbs.

Table 4.15: Sub-place and population distribution across racial composition groups

| Racial composition group | Number of sub-places | Percentage of total sub-places | Population | Percentage of total population |
|--|----------------------|--------------------------------|------------|--------------------------------|
| 1 (majority white) | 227 | 38 | 385 329 | 14 |
| 2 (white, small proportion coloured residents) | 64 | 11 | 155 264 | 5 |
| 3 (white/coloured mix) | 25 | 4 | 63 748 | 2 |
| 4 (highly mixed, 3 races) | 15 | 3 | 34 203 | 1 |
| 5 (majority coloured) | 160 | 27 | 1 179 555 | 42 |
| 6 (coloured, small proportion black African residents) | 23 | 4 | 89 502 | 3 |
| 7 (coloured, small proportion white residents) | 12 | 2 | 53 457 | 2 |
| 8 (majority black African) | 59 | 10 | 811 016 | 29 |
| 9 (black African/coloured mix) | 10 | 2 | 64 752 | 2 |
| Total | 595 | 100 | 2 836 826 | 100 |

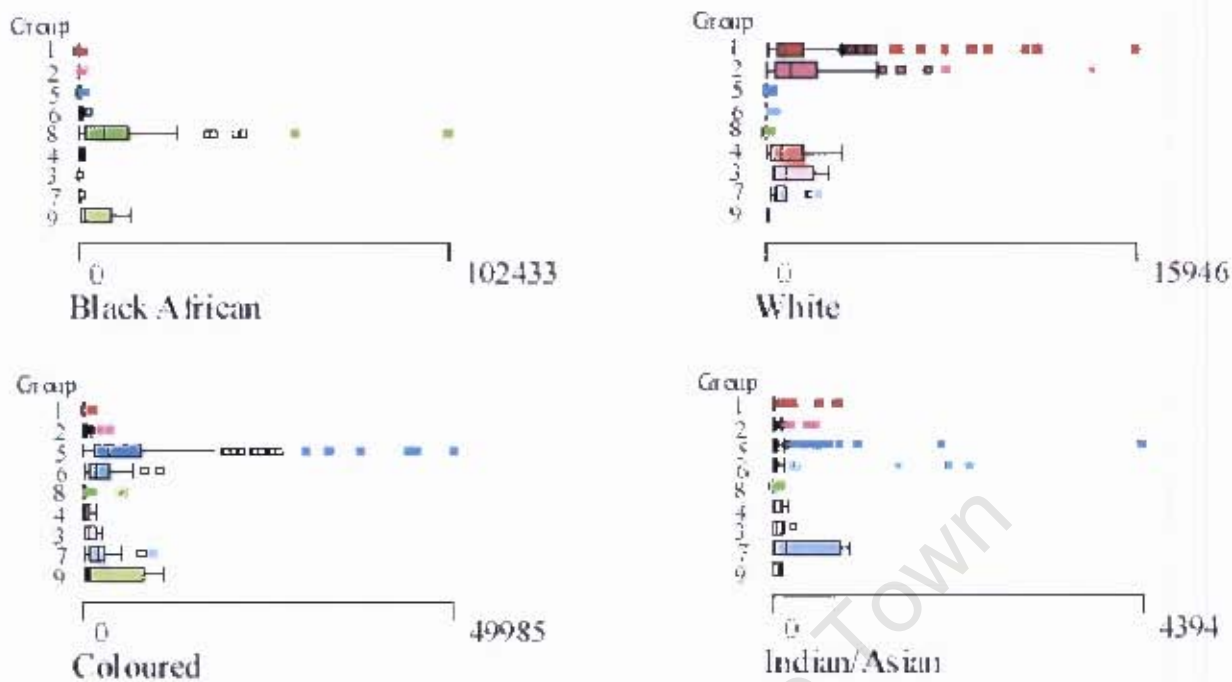


Figure 4.25: Box and whisker plots of the number of each race in each class

The box and whisker plots show the populations numbers rather than percentages (Figure 4.25). The black African population are mainly in majority black African sub-places, with a smaller number mixed coloured/black African areas. The largest number of residents in a majority black African sub-place is 102 433. The white population is concentrated in majority white and slightly coloured desegregated sub-places; however, this diagram shows that the largest number of residents in a majority white sub-place is 15 946, 15% the size of the largest black African population in a majority black African sub-place. This shows how important it is to look at the population numbers, as well as the number of sub-places, because black African areas are more densely populated than majority white areas and, while there may be more majority white sub-places than majority coloured or black African ones, the populations living within majority black sub-places have larger populations. These densely populated majority black African and coloured sub-places dominate the south-east sector, within the railway are, and they are part of the excluded ghetto in Cape Town.

The Indian/Asian population location was excluded from the three variable triangle diagram analysis because it is the smallest population. The Indian/Asian population is present in the former Indian Group Areas, majority coloured residents suburbs (group 5), and highly desegregated former white Group Areas (group 7).

All former black African Group Areas are majority black African sub-places (group 8), 85% of former coloured Group Areas are majority coloured sub-places (group 5) and 9% are made up of mainly coloured residents and a small black African population (group 6) (Table 4.16). Suburbs developed after 1991 are either in majority white (group 1) or a black African/coloured residential mix (group 8), as most of the latter Group Areas are low-income public housing built for the racially integrated housing waiting-list. Finally, 64% of former whites Group Areas are majority white sub-places (group 1), and 63 have some coloured desegregation (group 2). Group 3 and 4 sub-places, which have undergone significant desegregation, are mostly former whites-only areas.

Table 4.16: Group Area classifications vs. racial composition group

| Group Area classification | Multivariate racial composition groups | | | | | | | | | Total |
|---------------------------|--|---|---------------------------|------------------------------|--------------------------|---|---|-------------------------------|-----------------------------------|-------|
| | 1 (majority white) | 2 (white, small proportion coloured residents) | 3 (white/coloured mix) | 4 (highly mixed, 3 races) | 5 (majority coloured) | 6 (coloured, small proportion black African residents) | 7 (coloured, small proportion white residents) | 8 (majority black African) | 9 (black African/coloured mix) | |
| Black African | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 |
| Coloured | 0 | 0 | 0 | 0 | 154 | 17 | 2 | 4 | 3 | 180 |
| Indian | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 4 |
| Post-1991 | 25 | 1 | 2 | 1 | 4 | 3 | 1 | 28 | 7 | 72 |
| White | 202 | 63 | 23 | 14 | 0 | 1 | 9 | 3 | 0 | 315 |
| Total | 227 | 64 | 25 | 15 | 160 | 23 | 12 | 59 | 10 | 595 |

4.4 The relationship between the occupational spatial patterns and post-apartheid racial patterns

In the post-apartheid era, the spatial patterns of occupational class in Cape Town need to be understood in light of the desegregation of former white and coloured Group Areas. In section 3.2, I tabulated the univariate and multivariate occupational class analysis groups against percentage coloured and black African populations in former whites-only areas only.

This multivariate racial analysis enables a more detailed analysis of the relationship between the multivariate occupational class and racial composition of sub-places (Table 4.17). Those sub-places dominated by residents employed in manual occupations have either majority coloured (group 5) or majority black African (group 8) residents. Those sub-places with clerical, sales, service worker and middle-class occupations are the most widely distributed in terms of the racial profiles of areas. Seventy-six of these sub-places (37%) have majority white residents. Some of the clerical, sales, service workers and middle-class occupations sub-places are majority coloured areas (group 5) or desegregated white areas (group 2 and 3). The mixed clerical, sales, service workers and manual occupation sub-places have a similar racial composition as the solely manual occupational class sub-places, although considerably more clerical, sales, service workers and manual occupation sub-places have majority coloured (81) than majority black African residents (13). The middle-class occupation suburbs are mainly (83%) majority white (group 1), and only 10% of the middle-class suburbs are desegregating white areas (group 2). It is interesting that the majority coloured residents suburbs fall into three of the four occupational classes. The only occupational class which is relatively absent in these coloured areas are the middle-class occupations.

This cross-tabulation displays a great deal about the racial and class inequality in Cape Town. Middle-class areas are still majority white, ten years after the repeal of the apartheid Group Areas Act. However, suburbs with a mix of middle-class and clerical, sales and service work occupational class are the location of the growing coloured middle-class and their location allows access to the CBD and decentralised nodes in middle-class suburbs.

Table 4.17: Cross tabulation of multivariate occupational class and race results

| Occupational class groups | Racial mixing groups | | | | | | | | | Total |
|---|-----------------------|-------------------------------------|---------------------------|------------------------------|--------------------------|---|-------------------------------------|-------------------------------|-----------------------------------|-------|
| | 1 (majority white) | 2 (mainly white, small coloured) | 3 (white/coloured mix) | 4 (highly mixed, 3 races) | 5 (majority coloured) | 6 (mainly coloured, small black African) | 7 (mainly coloured, small white) | 8 (majority black African) | 9 (black African/coloured mix) | |
| 1 (manual) | 8 | 4 | 1 | 0 | 42 | 6 | 1 | 39 | 5 | 106 |
| 2 (clerical, sales, service workers and middle-class) | 76 | 41 | 18 | 10 | 33 | 8 | 10 | 6 | 1 | 203 |
| 3 (clerical, sales, service workers and manual) | 4 | 3 | 3 | 1 | 81 | 9 | 1 | 13 | 4 | 119 |
| 4 (middle-class) | 139 | 16 | 3 | 4 | 4 | 0 | 0 | 1 | 0 | 167 |
| Total | 227 | 64 | 25 | 15 | 160 | 23 | 12 | 59 | 10 | 595 |

CHAPTER 5: CONCLUSION

The model of the so-called 'post-Fordist' city occurs nowhere in its entirety. While Marcuse (1997a; 1997b), Marcuse & van Kempen (2000) and Wilson (1987) may describe the spatial form of such cities, they acknowledge that various factors, including the state, mediate between global processes, such as post-Fordism, and the impact they have on the spatial patterns of urban areas. Therefore, each city, let alone each country, has a different experience of the impacts of post-Fordism. Sassen (1994) has argued that occupation and income structures are polarising; Hamnett (1994) has disagreed and suggested a professionalisation of the work force, and the latter process has occurred in Cape Town (Borel-Saladin, 2006). Wilson (1987) has identified a skills and spatial mismatch in the US inner city, where the ghetto is located. Beginning in the 1970s, the inner city labour market began continuously upgrading, while unskilled jobs, for which inner city residents qualified, suburbanised. Therefore an underclass, who are economically and socially isolated, resides in the inner city ghetto. Marcuse (2002) argues that in US cities, which have also had a history of racial discrimination, the lifting of racial restrictions meant the African-American middle class left the inner city ghetto in the 1970s for the middle-class suburbs, where decentralised service sector employment has grown since the 1970s. Therefore the ghetto became an 'outcast ghetto' of the underclass. The post-Fordist city is multi-modal; however, the spatial divisions within the city overlap with racial or ethnic status and pre-existing racial and class segregation is reinforced through the market (Marcuse, 1997a; Beauregard & Haila, 1997).

Despite the fact that post-Fordist spatial forms originate in global cities, and that most post-Fordist urban literature describes the spatial forms of developed cities; according to Murray (2004), the most disturbing post-Fordist spatial features are found in regionally-significant, developing cities, about which little research on the post-Fordist impacts has been done. In such cities, the impact on occupational polarisation, and thus social polarisation, is much greater than in developed cities due to local factors which impede the lessening of the negative impacts of global forces.

South African cities have an urban legacy of apartheid racial spatial divisions that influences the spatial and social impacts of post-Fordism in urban areas. Unlike in the US cities, apartheid restricted the black population to ghettos on the periphery: Soweto in Johannesburg and the Cape Flats or south-east sector in Cape Town. Crankshaw (2005) discusses Johannesburg post-Fordist and desegregation experience. Post-Fordist decentralisation occurred in Johannesburg from the 1970s when businesses left the CBD due to crime and grime and relocated to the northern suburbs of Sandton, the location of middle-class white Group Areas. The 1970s saw middle-class black Africans move out of Soweto into the inner city and, after the end of apartheid, into the northern suburbs. Coloured and Indian in-migration pre-dates black African desegregation in all South African cities due to financial ability and a residential history in former white Group Areas. The shift to service sector employment and the subsequent change in skills required, coupled with the fact that these jobs are located in the less accessible northern suburbs, has meant that a black African underclass has formed in the excluded ghetto of Soweto.

Johannesburg's spatial form is far more like the US model in terms of decentralisation than Cape Town's. Johannesburg has experienced much more decentralisation of both service sector and manufacturing businesses to the edge city of Sandton. However, unlike in the US, in Johannesburg the bulk of desegregation has been in the inner city. On the other hand, Cape Town shows that not all South African cities have the same post-Fordist experience: firstly, it never had as large a manufacturing base as Johannesburg and, therefore, the decline in manufacturing since the 1970s has not hit the labour force in Cape Town as hard (South African Cities Network, 2004). Secondly, decentralisation has not occurred to the same extent and the CBD is still thriving. This is where the physical setting mediates with post-Fordist forces to ensure that the CBD has not gone into decline as in other South African cities. The Cape Town CBD has a unique, picturesque setting and its location has been described as irreplaceable (Koblitz, 2006b). Thirdly, Cape Town has a much larger coloured than black African population and this former race fared much better under apartheid than the black Africans. They, therefore, make up a larger percentage of the middle class, while Johannesburg has a growing black African middle class.

Decentralisation of service sector businesses has occurred to some extent in Cape Town, but not to the poor, south-east sector. Growth nodes have been in the middle-class northern suburbs of Bellville/Durbanville and Blaauwberg; in the south-western suburbs and the Helderberg Basin, all of which were former whites-only areas. This research has shown that these middle-class suburbs are still majority white, but those suburbs along the railway lines in the south-west and northern suburbs, have experienced an in-migration of coloureds. These are often suburbs from which coloureds were removed during apartheid and are adjacent to former coloureds-only areas. This finding corroborates Saff's (1998) analysis of inter-racial property transfers in the 1900 to 1994 transition period. Most inter-racial in-migration in this period was of coloureds moving into former whites-only suburbs, which is also the case in this 2001 analysis. The medium-income suburbs, which he identifies as having coloured in-migration more than a decade ago, are the same suburbs singled out here, although the northern suburbs of Parow and Goodwood are not mentioned in his desegregation analysis.

According to Saff (1998), the reason for limited black African desegregation was that this race did not have a residential history in middle-class areas and also had a higher degree of separation. Cape Town black Africans also professed to prefer the vibrant lifestyle and social contacts of the township. This is corroborated by both the literature on other South African cities, which show greater desegregation in areas adjacent to former black African-only townships, and this research which shows that a large proportion of Cape Town's black African middle class still reside in their former Group Areas. Saff (1994b) states that most black African movement into former whites-only areas is deracialisation rather than desegregation as these residents gained access to the land by squatting rather than due to being middle class and are therefore excluded from using the facilities of the area. However, their residence does improve their access to growing employment nodes.

Saff (1994a; 1998) concludes that the fundamental racial spatial divisions in Cape Town will continue in the foreseeable future, just as in the US the legacy of centuries of racial discrimination has by no means been undone in the past three decades. I believe that my 2001 racial analysis draws the same conclusion; however, Saff (1998) did not analyse the

class composition of the Cape Town suburbs and this factor is key to determining whether the spatial inequality in access to service sector employment is increasingly due to class rather than race.

This research shows that residents of more desegregated suburbs, along the railway lines in the northern and southern suburbs, are coloured rather than black African; nor are they completely middle-class but there is rather a class mixture of clerical, sales and service worker and middle-class occupations. Their in-migration into these suburbs has, however increased their access to decentralised employment nodes by proximity, and to the CBD by way of the nearby railway lines. In cities worldwide, the inner city is the site of most initial racial integration, as seen in Johannesburg. However, in Cape Town these sub-places, which still contain much service-sector employment, house the middle class and a mixture of clerical, sales, service workers and the middle class and there has been limited black in-migration as many of the suburbs have gentrified. Unlike Johannesburg, there is a very small black African middle class and, as has been said, these residents tend to remain in the working-class, majority black African areas in the south-east. Middle-class black African desegregation into higher income, majority coloured areas has not occurred to any significant extent due to tensions created by competition for land, housing and employment as well as linguistic differences (Saff, 1998; Lohnert, Oldfield & Parnell, 1998).

Despite the presence of middle-class black Africans in the south-east sector, the area is very much an outcast ghetto of the underclass with high unemployment and poverty and the prevalence of the informal sector. The other post-Fordist spatial phenomenon discussed is the totalised suburb or edge city. The evidence for the presence of this spatial form in Cape Town was less convincing than that of the outcast ghetto. Bellville/Durbanville in the northern suburbs does have some totalised suburb characteristics and it could further develop into such if the market is allowed; however, in its current state it cannot compare to the additional CBD of Sandton, which has grown in northern Johannesburg since the 1970s.

The state has an important role to play in negating the negative impacts of global forces such as post-Fordism (Badcock, 1997). The post-apartheid government in Cape Town has

been criticised for, in principle, supporting a more equitable and integrated city but, in practice, not investing enough to alleviate the urban legacy of apartheid and actually reinforcing these racial and class divisions by supplying low-income housing on the south-east periphery. National and global capital has also overridden these planning paradigms due to compliance on the part of local government and therefore it continues to flow to majority white, middle-class suburbs. Therefore state-driven racial segregation has been replaced by market-driven class segregation, which often mirrors apartheid racial spatial divisions (Marks & Bezzoli, 2001; Turok, 2001; Robins, 2002; Mabin, 2005a).

This research has shown that middle-class suburbs are the location of decentralised growth and employment and they remain majority white areas. Middle-class coloureds have moved into suburbs on the fringe of these nodes and have thereby gained access to such employment and, subsequently, white-coloured racial inequality has been superseded by class. However, the extent to which the character of inequality is changing from a racial to class basis is misleading, given the fact that, unlike in the US, the white race is the minority and the coloured population makes up almost half of Cape Town's population. Predictions prior to the repeal of the Group Areas Act were that rapid desegregation due to the size of the black population would occur and this would be accompanied by white flight, as occurred in the United States (Saff, 1994a). However, it is clear that due to market forces and the post-apartheid government in Cape Town, apartheid racial spatial divisions are, on the whole, still prevalent. The decentralisation of formal employment to the majority white, middle-class suburbs of the north and south-west and a lack of such investment in the outcast ghetto of the south-east, which houses the poor, majority black population reinforces the racial and class division between these regions which were different race Group Areas during apartheid. The only evidence of a move from race to class-based spatial polarisation is the in-migration of the coloured middle-class into the suburbs along the railway lines in the northern and south-western suburbs. Given the size of the coloured race in Cape Town, if this trend continues as it has in the first decade after apartheid it could further help erode racial spatial inequality.

Post-Fordist forces began establishing decentralised employment nodes in white, middle-class areas during apartheid. According to Robins (2002:671), “racialised geographies of [development in] post-apartheid Cape Town reproduce the spatial logic of capital under apartheid”, and although the impact of post-Fordism has not had such drastic spatial consequences as in Johannesburg, Cape Town has also not had as great an extent of desegregation. Johannesburg’s inner city suburbs are highly desegregated and the black African middle class has moved into the middle-class northern suburbs. In Cape Town, the inner city still has a large white, professional population and coloured middle class desegregation has been along the boundary of former coloured and white Group Areas. Therefore the relationship between racial and class inequality in Cape Town is more spatially entrenched than in Johannesburg.

I believe that this research, and its comparison with Crankshaw’s (2005) Johannesburg research, has clearly shown the importance of place in the post-apartheid experience of desegregation and in mediating the positive and negative impacts of global forces such as post-Fordism.

REFERENCES

- Badcock, B. 1997. Restructuring and spatial polarization in cities. *Progress in Human Geography*, 21(2): 251-262
- Barnes, N. 1998. *Do retail centres enhance township economic development? Lessons from Khayelitsha, Cape Town*. University of Cape Town
- Beall, J., Crankshaw, O. & Parnell, S. 2002. *Uniting a Divided City: Governance and Social Exclusion in Johannesburg*. London: Earthscan Publications. 36-61
- Beauregard, R.A. & Haila, A. 1997. The unavoidable incompleteness of the city. *American Behavioral Scientist*, 41(3): 327-341
- Beavon, K. 2004. *Johannesburg: The Making and Shaping of the City*. Pretoria: UNISA Press
- Blaauwberg Online. 2001. *History of Blaauwberg: 1991-2000*. [Online]. Available: <http://www.blaauwberg.net/history/historylist.php> [2006, July 25]
- Blaauwberg Online. n.d. *Parklands*. [Online]. Available: http://capetownproperty.blaauwberg.net/suburbs/parklands_property_real_estate_for_sale_buy_rent.php [2006, July 25]
- Borel-Saladin, J. 2006. Professionalisation or Polarisation? Economic restructuring and changes in Cape Town's labour market. M.Sc Thesis. Department of Environmental and Geographical Science, University of Cape Town.
- Burgers, J. & Musterd, S. 2002. Understanding Urban Inequality: A Model Based on Existing Theories and an Empirical Illustration. *International Journal for Urban and Regional Research*. 26(2): 403-413
- Business Day. 2004a. City revival trend takes off. *Business Day*, 2 February. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=3088> [2006, July 25]
- Business Day. 2004b. Westlake fully sold as rentals soar in Cape. *Business Day*, 8 December. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=4890> [2006, July 25]
- Business Day. 2005a. Residential conversions help ease Cape Town office vacancies. *Business Day*, 10 February. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=5141> [2006, July 25]

- Business Day. 2005b. Big development for sleepy Somerset West. *Business Day*, 3 August. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=6065> [2006, July 25]
- Business Day. 2006. Business boom at Century City. *Business Day*, 10 May. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=7232> [2006, July 25]
- Cape Times. 2006. Property becomes popular as an investment vehicle. *Commercial and Industrial review: A Cape Times Feature*, 22 March.
- Caldeira, T. 1996. Building up walls: the new pattern of spatial segregation in São Paulo. *International Social Science Journal*, 48(1): 55-66
- Caldeira, T. 2000. *City of Walls: Crime, Segregation and Citizenship in São Paulo*. Berkeley: University of California Press. 213- 296
- Cape Metropolitan Council. 2000. *Major Development Proposals in the Cape Metropolitan Area*. Planning, Environment and Housing Directorate
- Capricorn Park. 2005. *Capricorn Park leads W Cape industrial boom*. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=6567> [2006, July 25]
- Carmody, P. 2002. Between Globalisation and (Post) Apartheid: the Political Economy of Restructuring South Africa. *Journal of Southern African Studies*, 28(2): 255-275
- Cattell, A. 2005. Selected Development Areas in Cape Town. *The SAMCO Report 2005/6*. 68
- Centre for Intergroup Studies. 1983. *Group Areas*. Rondebosch: The Centre
- Christopher, A.J. 1994. *The Atlas of Apartheid*. London: Routledge
- Christopher, A.J. 2001. Urban Segregation in Post-apartheid South Africa. *Urban Studies*, 38(3): 449-466
- Christopher, A.J. 2005. Does South African have Ghettos? *Tijdschrift voor Economische en Sociale Geografie*, 96(3): 241-252
- City of Cape Town. 2002. *Land-use data*. Strategic Development Information and GIS Department
- City of Cape Town. 2003. *MSDF Review, Phase 1: Spatial Analysis, Trends and Implications*. Cape Town: Planning and Environment Development Services
- Cleary, M. 2005. Lifting the curtain- Cape Town's Northern Suburbs. *The Property Magazine*, February. [Electronic]. Available:

- http://www.thepropertymag.co.za/pages/452774491/articles/2005/February/Lifting_the_curtain_-_Cape_Towns_Northern_Suburbs.asp [2006, October 19]
- Cook, G.P. 1991. Cape Town. In A. Lemon (ed.) *Homes Apart: South Africa's Segregated Cities*. Cape Town: David Philip. 26-42
- Cooper, C. et. al. 1979. *A Survey of Race Relations in 1978*. Johannesburg: South African Institute of Race Relations
- Cooper, C. et. al. 1985. *A Survey of Race Relations in 1984*. Johannesburg: South African Institute of Race Relations
- Cooper, C. et. al. 1990. *A Survey of Race Relations in 1989/1990*. Johannesburg: South African Institute of Race Relations
- Cooper, C. et. al. 1992. *A Survey of Race Relations in 1991/1992*. Johannesburg: South African Institute of Race Relations
- Crankshaw, O. 2005. Race and the Post-Fordist Spatial Order of Johannesburg. *Proceedings of the 2nd States of Australian Cities Conference*. 30 November-2 December, 2005, Griffith University, Brisbane
- Crankshaw, O. & White, C. 1995. Racial Desegregation and Inner City Decay in Johannesburg. *International Journal of Urban and Regional Research*, 19(4): 622-638
- Deans, G. 2005. Century City - a model in new urbanism. *The SAMCO Report 2005/6*. 72-73
- Deans, G. 2006. Century City – embracing new urbanism. *The SAMCO Report 2006/7*. 80-81
- De la Porte Property Group. 2006. *Montague Gardens*. [Online]. Available: http://www.delaporte.co.za/montague_gardens.aspx [2006, July 25]
- Donaldson, R., Jürgens, U. & Bähr, J. 2003. Inner-city change in Pretoria: social and spatial trends. *Acta Academia Supplementum*. 2003(1):1-33
- E-prop. 2001. *Cape Town CBD and decentralised retail*. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=31> [2006, July 25]
- ESRI. 1992-1996. *ArcView 3.2 Help*. ESRI Inc
- Friedmann, J. & Wolff, G. 1982. World City Formation: An agenda for research and Action. *International Journal for Urban and Regional Research*. 6(4): 309-343

- Goldsmith, W.W. 1997. The metropolis and globalisation: the dialectics of racial discrimination, deregulation and urban form. *American Behavioral Scientist*, 41(3): 299-310
- Gordon, I & Sassen, S. 1992. Restructuring the urban labor markets. In *Divided Cities: New York and London in the Contemporary World*. S. Fainstein, I. Gordon and M. Harloe, Eds. Oxford: Blackwell. 105-127
- Gordon, L. et. al.. 1980. *A Survey of Race Relations in 1979*. Johannesburg: South African Institute of Race Relations
- Hamnett, C. 1991. Labour markets, housing markets and social restructuring in a global city: the case of London. In *Housing and Labour Markets: Building the connections*. J. Allen and C. Hamnett, Eds. London: Unwin. 191-213
- Hamnett, C. 1994. Social Polarisation in Global Cities: Theory and Evidence. *Urban Studies*, 31(3): 401-424
- Harrison, P. 1995. Changing Cities: Global Economics, Urban Restructuring and Planning Response. *Transformation*, 28: 35-50
- Harvey, C. 2006. Cape Town Commercial Market Overview. *The SAMCO Report 2006/7*. 76-77
- Horn, A. 2002. New Perspectives on Urban Segregation and Desegregation in Post-Resolution South Africa. In Schnell, I. & Ostendorf, W (eds.) *Studies in Segregation and Desegregation*. Aldershot: Ashgate. 247-284
- Horn, A. & Buyisiwe Ngcobo, J-R. 2003. The Suburban Challenge: Desegregation, Opportunity, and Community in Akasia, City of Tshwane. *Urban Forum*, 14(4): 320-346
- Horrel, M. 1958. *Group Areas in Cape Town*. Johannesburg: South African Institute of Race Relations
- Horrel, M. 1962. *A Survey of Race Relations in 1961*. Johannesburg: South African Institute of Race Relations
- Horrel, M. 1964. *A Survey of Race Relations in 1963*. Johannesburg: South African Institute of Race Relations
- Horrel, M. 1965. *A Survey of Race Relations in 1964*. Johannesburg: South African Institute of Race Relations
- Horrel, M. 1967. *A Survey of Race Relations in 1966*. Johannesburg: South African Institute of Race Relations

- Horrel, M. 1968. *A Survey of Race Relations in 1967*. Johannesburg: South African Institute of Race Relations
- Horrel, M. 1969. *A Survey of Race Relations in 1968*. Johannesburg: South African Institute of Race Relations
- Horrel, M. *et. al.* 1982. *A Survey of Race Relations in 1981*. Johannesburg: South African Institute of Race Relations
- Horrel, M. & Hodgson, T. 1976. *A Survey of Race Relations in 1975*. Johannesburg: South African Institute of Race Relations
- Horrel, M., Horner, D. & Kane-Berman, J. 1972. *A Survey of Race Relations in 1971*. Johannesburg: South African Institute of Race Relations
- Jenkins, P. & Wilkinson, P. 2002. Assessing the Growing Impact of the Global Economy on Urban development in Southern Africa. *Cities*, 19(1): 33-47
- JHI Real Estate. 2004. *Cape Town Development potential get breath of fresh air* [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=3919> [2006, July 25]
- Jürgens, U. *et. al.* 2003. Socio-demographic transformation in the Bloemfontein inner-city area. *Acta Academia Supplementum*. 2003(1): 34-54
- Kesteloot, C. 2003. Urban socio-spatial configurations and the future of European cities. *Eurex online seminar*. 20 Feb 2003. <http://www.shakti.uniurb.it/eurex/> [2006, February 16]
- Kitchin, F. 2002. Desegregation, resegregation and centre/periphery relationships in Durban. *Recontres de l'innovation territoriale*. [Online]. Available: iga.ujf-grenoble.fr/teo/Innovation/PDF/32%20Kitchin%202.deseg.pdf [2006, April 22]
- Koblitz, C. 2006a. The Tyger Roars. *The Property Magazine*, February: 29-33
- Koblitz, C. 2006b. Inner Vision - Cape Town CBD. *The Property Magazine*, June. 31-38
- Le Fleur, C.C. 2005. The Levels of Patterns of Racial Residential Desegregation in Cape Town. M. SocSci Thesis. Department of Sociology, University of Cape Town
- Lemanski, C. 2005. Space of exclusivity or connection? Linkages between a security village and its poorer neighbour in a Cape Town master plan development. *Isandla Institute: Dark Roast Occasional Paper Series*, 21. [Online]. Available: http://www.isandla.org.za/dark_roast/DR21%20Lemanski.pdf [2006, September 8]
- Lemon, A. & Clifford, D. 2005. Post-Apartheid Transition in South Africa. *Urban Studies*, 42(1): 7-30

- Lohnert, B, Oldfield, S. & Parnell, S. 1998. Post-Apartheid Social Polarisation: The Creation of Sub-Urban Identities in Cape Town. *South African Geographical Journal*, 80(2): 86-92
- Mabin, A. 2005a. Suburbanisation, segregation, and government of territorial transformations. *Transformation*, 56: 41-64
- Mabin, A. 2005b. Suburbs and Segregation in South African Cities: A Challenge for Metropolitan Governance in the Early Twenty-First Century. In *Desegregating the city: ghettos, enclaves and inequality*. D. Varady, Ed. Albany: State University of New York Press. 221-232
- Mabin, A. 2005c. *Suburbs on the veld, modern and postmodern*. [Online]. Available: http://www.wits.ac.za/mabina/suburbs_on_the_veld_mabin.pdf [2006, April 22]
- Map Studio. 1990. *Cape Town and Environs Street Guide*. 6th Ed. Johannesburg: Map Studio
- Map Studio. 2003. *Cape Town and Peninsula Street Guide*. 12th Ed. Cape Town: Map Studio
- Marcuse, P. 1991. Housing markets and labour markets in the quartered city. In *Housing and Labour Markets: Building the connections*. J. Allen and C. Hamnett, Eds. London: Unwin. 120-135
- Marcuse, P. 1997a. The Enclave, the Citadel and the Ghetto: What has changed in the post-Fordist U.S. City. *Urban Affairs Review*. 33(2): 1-27
- Marcuse, P. 1997b. The ghetto of exclusion and fortified enclave: new patterns in the United States. *American Behavioral Scientist*, 41(3): 311-326
- Marcuse, P. 2002. The Shifting Meaning of the Black Ghetto in the United States. In *Of States and Cities*. P. Marcuse and R. van Kempen, Eds. New York: Oxford University Press. 109-142
- Marcuse, P. & van Kempen, R. 2000. Conclusion: A Changed Spatial Order. In *Globalizing Cities: A New Spatial Order?* P. Marcuse and R, van Kempen, Eds. Oxford: Blackwell. 249-275
- Marks, R. & Bezzoli, M. 2001. Palaces of Desire: Century City, Cape Town and the Ambiguities of Development. *Urban Forum*, 12: 27-47
- Martin, D.C. 1998. What's in the name 'Coloured'?. *Social Identities*, 4(3): 523-540

- Massey, D.S. & Denton, N.A. 1993. *American Apartheid*. Cambridge: Harvard University Press
- Mathomes, C. 2006. *Paardevelei Precinct at Somerset West*. The SAMCO Report 2006/7. [Online] Available: <http://www.eprop.co.za/news/category.aspx?idCategory=357&idSubCategory=63> [2006, June 6]
- Mesthrie, U.S. 1994. "No place in the world to go" – control by permit: The first phase of the Group Areas Act in Cape Town in the 1950s. *Studies in the History of Cape Town*. 7: 184-207
- Michael Kerkhoff & Associates. 2005. *More development opportunities at Somerset West set to come from Heartland*. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=6044> [2006, July 25]
- Michel, D.P. & Scott, D. 2005. The La Lucia-Umhlanga Ridge as an Emerging "Edge City". *South African Geographical Journal*, 87(2): 104-114
- Morris, A. 1998. Continuity or Rupture. *Social Research*, 65(4):763-775
- Murray, M. 2004. The Spatial Dynamics of Postmodern Urbanism: Social Polarisation and Fragmentation in São Paulo and Johannesburg. *Journal of Contemporary African Studies*, 22(2) [Online]. Available: http://www.cubes.wits.ac.za/docs/martin_murray_joburg_sp.pdf [2006, September 15]
- Myburgh, D.W. 1996. The Transformation of Social Space in the Tygerberg, Cape Town. In *Contemporary City Structuring: International Geographical Insights*. R. Davies, Ed. Cape Town: Society of South African Geographers. 200-209
- Myburgh, D.W. 1998. Urban Settlement in the Tygerberg, 1945-1995. In *The Tygerberg: the story of the Tygerberg Hills and the towns of Parow, Bellville and Durbanville*. N. Du Plessis, Ed. Cape Town: Tafelberg. 67-90
- Newmarch, J. 2006. Khayelitsha- turning townships into suburbs. *The Property Magazine*. July 2006. [Online]. Available: <http://www.thepropertymag.co.za/pages/452774491/articles/2006/July/Foresight-Khayelitsha.asp> [2006, October 19]

- O'Loughlin, J. & Friedrichs, J. 1996. Polarisation in Post-Industrial Societies: Social and Economic Facts and Consequences. In *Social Polarization in Post-Industrial Metropolises*. J. O'Loughlin and J. Friedrichs, Eds. Berlin: Walter de Gruyter. 1-18
- Old Mutual Property Group. 2006. *R83 million expansion for Cape Town Industrial Park*. [Online]. Available: <http://www.eprop.co.za/news/article.aspx?idArticle=7620> [2006, July 25]
- Oldfield, S. 2002. Local state restructuring and urban transformation in post-apartheid Cape Town. *GeoJournal*, 57: 29-37
- Oldfield, S. 2004. Urban Networks, community organizing and race: an analysis of racial integration in a desegregated South African neighbourhood. *Geoforum*, 35: 189-201
- Pearce-Oroz, G. 2005. Causes and Consequences of rapid Urban Spatial Segregation: The New Towns of Tegucigalpa. In *Desegregating the city: ghettos, enclaves and inequality*. D. Varady, Ed. Albany: State University of New York Press. 108-124
- Prinsloo, D.A. & Cloete, C.E. 2002. Post-apartheid residential mobility patterns in two South African cities. *Property Management*, 20 (4): 264-277
- Property24. 2006. *Northern Suburbs A Favourable Market*. [Online]. Available: <http://www.property24.com/Property24/news/FullArticle.asp?articleid=3629> [2006, July 25]
- Republic of South Africa, Central Statistical Service. 1980a. *Population Census 1980, Geographic Distribution of the Population with a Review for 1951-1980*. Report No. 02-80-13. Central Statistical Services, Pretoria.
- Republic of South Africa, Central Statistical Service. 1980b. *Population Census 1980, Occupation by Statistical Region and District*, Report No. 02-80-05. Central Statistical Services, Pretoria.
- Republic of South Africa, Central Statistical Service. 1991. *Population Census 1991, Occupation by Development Region, Statistical Region and District*, Report No. 03-01-08 (1991), Central Statistical Services, Pretoria.
- Robins, S. 2002. At the limits of spatial governmentality: a message from the tip of Africa. *Third World Quarterly*, 23(4): 665-689
- Rode's Report. 2004a. *Rode's Report on the South African Property Market: Industrial rentals and vacancies: 1*. [Online]

- Available: http://www.rode.co.za/publications/demos/RR_2004_1_-_10_-_Industrial.pdf
[2006, April 19]
- Rode's Report. 2004b. *Rode's Retail Report of South Africa: New shopping centres: 3*.
[Online] Available: http://www.rode.co.za/publications/demos/RRR_2004_3_-_3_-_New_Shoppi.pdf [2006, April 19]
- Rost, L. 2006. Kraaifontein, north of the N1 Spatial Framework. [Telephonic Interview, 11 December]. Cape Town. (Unpublished).
- SA Good News. 2006. *Eskom gives free fluorescent lamps in W Cape*. [Online]. Available: http://icms.iac.iafrica.com/pls/cms/iac.page?p_t1=1464&p_t2=3370&p_t3=0&p_t4=0&p_dynamic=Y&p_content_id=179267&p_site_id=77 [2006, November 14]
- Saff, G. 1994a. *Residential Segregation in South Africa and the United States: Evaluating the Sustainability of Comparative Research*. University of Cape Town: Centre for African Studies
- Saff, G. 1994b. The changing face of the South African city: From urban apartheid to the deracialisation of space. *International Journal of Urban and Regional Research*, 18(3): 371–391
- Saff, G. 1998. *Changing Cape Town: Urban Dynamics, Policy, and Planning During the Political Transition in South Africa*. Lanham: University Press of America
- Salcedo, R. & Torres, A. 2004. Gated Communities in Santiago: Wall or Frontier? *International Journal of Urban and Regional Research*: 28(1): 27-44
- Sassen, S. 1994. *Cities in a world economy*. Thousand Oaks: Pine Forge Press
- Seekings, J. & Nattrass, N. 2005. *Class, race, and inequality in South Africa*. New Haven: Yale University Press
- Selod, H. & Zenou, Y. 2001. Location and Education in South African Cities under and after Apartheid. *Journal of Urban Economics*, 49: 168-198
- Smith, E. 2006. Recent Spatial Trends in post-Fordist Cape Town. M.SocSci Thesis. Department of Sociology, University of Cape Town.
- South African Cities Network. 2004. Urban Economy Trends and the State of the Productive City. In *State of the Cities Report 2004*. South African Cities Network

- Spinks, C. 2001. A new apartheid? Urban spatiality, (fear of) crime, and segregation in Cape Town, South Africa. *Development Studies Institute Working Paper Series* No. 01-20. [Online]. Available: www.lse.ac.uk/collections/DESTIN/pdf/WP20.pdf [2006, February 16]
- Statistics South Africa. 2004. *Census 2001: Concepts and Definitions*. [Online]. Available: <http://www.statssa.gov.za/census01/html/C2001Concepts.asp> [2005, September 1]
- Statistics South Africa. 2006. *General Household Survey: July 2005*. Pretoria: Statistics South Africa
- Turok, I. 2001. Persistent Polarisation Post-Apartheid? Progress towards Urban Integration in Cape Town. *Urban Studies*, 38(13): 2349-2377
- Turok, I. & Watson, V. 2001. Divergent Development in South African Cities: Strategic Challenges Facing Cape Town. *Urban Forum*, 12(2): 119-138
- Van Kempen, R. & Marcuse, P. 1997. A New Spatial Order in Cites? *American Behavioral Scientist*. 41(3): 285-298
- Viola, W. 2004. *Somerset West: Gateway to the Cape Metropole*. The SAMCO Report 2004/5. [Online] Available: <http://www.eprop.co.za/news/article.aspx?idArticle=4077> [2006, June 6]
- Waniez, P. 2003. *Philcarto Version 3.03 for Windows: Users Manual*. [Online]. Available: philgeo.club.fr/
- Watson, V. 2000. *Urban Integration and the Cape Metropolitan Area: Report to the Unicity Commission*. Cape Town: The Unicity Commission
- Western, J. 1996. *Outcast Cape Town*. Berkeley : University of California Press
- Wilkinson, P. 2000. City Profile: Cape Town. *Cities*, 17 (3): 195-205
- Wilson, J.W. 1987. *The Truly Disadvantaged: the inner city, the underclass and public policy*. Chicago: University of Chicago Press