

AGGLOMERATION OF CORPORATE HEADQUARTERS LOCATION IN THE METROPOLITAN AREAS: A CASE STUDY OF PUBLIC LISTED FIRMS

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ABSTRACT

This paper examines location factors of Corporate headquarters (CHQs) in the South African context with a focus on companies listed on the Johannesburg Stock Exchange (JSE). The study pays attention to the changes in metropolitan municipalities that likely influence CHQs location decisions, and in so doing, it seeks to understand how the social, spatial, and economic past likely influence corporate headquarters location choice. The framework adopted in this study is that CHQs agglomerate in particular metropolitan areas due to forces that change with the changes in the environment. Using the spatial deviational ellipse, the paper claims that the agglomeration of CHQs in South Africa resembles the economic, political, and spatial history of the country.

Keywords: Corporate Headquarters, Metropolitan Municipalities, Clustering, Agglomeration, Spatial Deviational Ellipse

INTRODUCTION

Metropolitan areas are economic hubs in which services are concentrated more than in other areas concentrated. These areas are of strategic importance for national growth and development and for competitiveness in the globalizing world (see Klaesson, Johannson and Karlsson, 2013; Kresl and Ietri, 2012). From a sectoral perspective, some argue that diversification and not specialisation tends to enhance economic growth (Glaeser, Kallal, Scheinkman and Schleifer, 1992, Jacobs, 1969, 1984; Quigley, 1998); however, others tend to view the specialisation of a metropolitan area as a major contributor to economic growth (Henderson, Kuncoro and Turner, 1995). Corporate headquarters (CHQs) location pattern is interlinked with economic activity, and therefore CHQs tend to prefer to locate in metropolitan areas. However, certain metropolitan areas attract more CHQs than others or attract certain types of industries. It is no wonder spatial economists generally tie headquarters location with metropolitan area specialisation (see Marshall, 1890; Schumpeter, 1942; Romer, 1986; Porter, 1990; Drennan et al., 2002).

Due to global competition metropolitan areas strive not only to attract CHQs into their locations, but also to retain them. This comes as no surprise, considering that governments at national, regional, and local levels generally perceive CHQs as drivers of economic activity as CHQs tend to stimulate wealth and job creation through employment of high-skilled professionals and other available labour; they purchase high-end professional services such as auditing, management consulting, and financial services, and they also give other indirect economic benefits to their locations (Bloom and Grant, 2011). Baumol et al., (2007) noted that there is direct relationship between the success of particular firms located in particular locations and the attraction of labour force, entrepreneurs, services and suppliers. More firms spring up in areas that prove to be successful and where there are necessary supporting facilities for the business to thrive and be competitive. Therefore, governments tend to offer incentives to attract headquarters and especially the headquarters of big companies, as these tend to attract investors, and thereby improving the economic outlook of the metropolitan area.

South Africa is a unique country due to its political past, which has influenced the social, economic and spatial distribution of activities. It is also a developing country that has little information on CHQs location decisions. Previous studies that were conducted in other countries¹ may give some insight into the behaviour of CHQs, but such studies do not fully explain the South African case given its unique history. Apartheid created institutionalised regional disparities in terms of infrastructure and economic specialisation that influence the concentration of CHQs. However, the dynamics in certain cities or metropolitan municipalities may change and have changed over time. These changes may affect CHQs location decisions. Over the years, the South African government has tried to restructure the fragmented socio-economic and spatial settings of the past to increase

¹ Sigler et al. (2016) indicated that most studies imanates from the developed countries.

investment in the country (National Planning Commission, 2012). Pillay and Geyer (2016) suggest that policy makers do play a role in facilitating the location of CHQs and companies in general. At the same time, developers, investors and companies may also influence the location of CHQs. At different levels, the different role players need to be understood so that no one miss the opportunity to optimise on brand advantage, maximise returns on investment, optimising on the market share, and also that the government not miss the critical investment that can make a particular metropolitan area competitive.

Considering the relative importance of CHQs in any country's economic outlook, this study's focus is on CHQs location within the South African metropolitan landscape. The focus of this paper is on CHQs location of companies listed on the Johannesburg Stock Exchange, and its argument is that corporate headquarters in South Africa are mainly concentrated in five metropolitan municipal areas—Johannesburg, Cape Town, eThekweni, Ekurhuleni and Tshwane—which reflects on the one hand the uneven spatial development that resulted from apartheid spatial planning and on the other hand the concerted efforts by the current regime to sustain development in the key economic areas. However, this paper assumes that there are many complex factors that influence CHQs location choices and decisions and that a country's social, economic and political environment also plays a crucial role.

This paper makes use of the dataset obtained from the Johannesburg Stock Exchange (JSE) as of 21 September 2016. There were 483 companies listed on both the Main Board and AltX by that date. Companies whose CHQs are not based in South Africa are not considered in this paper. In addition, companies which are not based within the eight metropolitan municipalities will be noted; however, they do not form the core of this paper.

This paper is structured as follows: The first part of the paper looks at the spatial history of South Africa influenced by the apartheid cities. Thereafter a review of how the apartheid system has influenced the current spatial patterns. Then, the paper looks at the spatial distribution of CHQs of the listed companies in the JSE. An analysis of the factors that contributed to this spatial pattern is discussed and the conclusions drawn therefrom.

SPATIAL HISTORY

South Africa's Metropolitan Areas and the Apartheid Cities

In the South African context, the classification of certain areas as metropolitan areas reflects the post-apartheid spatial restructuring of the landscape as a means of dealing with the social, economic, and spatial injustices inherited from the colonial-apartheid era. South Africa currently has 284 municipalities that are divided into three categories:

- Category A – metropolitan municipalities (metros) (8)
- Category B – local municipalities (226)
- Category C – district municipalities (44)

This paper only focusses on the Category A municipalities, the metros. The *White Paper on Local Government* (Republic of South Africa, 1998:51) defined the metropolitan areas as follows: "Metropolitan areas are large urban settlements with high population densities, complex and diversified economies, and a high degree of functional integration across a larger geographic area than the normal jurisdiction of a municipality." These metros are also known as unicitys, which have the exclusive executive and legislative authority within their jurisdiction. In the transitional phase from the apartheid state to the democratic state, the metros were configured as shown below in **Table 1**:

Table 1: First metropolitan configuration in South Africa.

| Western Cape | Gauteng | Kwazulu Natal |
|-------------------------------|---|---|
| Cape Metropolitan Area | Greater Johannesburg Metropolitan Council Greater Pretoria Metropolitan Council Khayalami Metropolitan Council Lekoa / Vaal Metropolitan Council | Greater Durban Metropolitan Area |

In 1999, the Municipal Demarcation Board was given the mandate to work on the boundaries of the local government for the 2000 elections.² This mandate also implied that the demarcation board had to transform the apartheid settlement patterns and mix the population as they created the different areas. The metropolitan areas noted in **Table 2** were created around the existing cities. In 2011 two more municipalities were deemed Category A metros: Buffalo Metro and Mangaung Metro. This has increased the metros from six to eight.

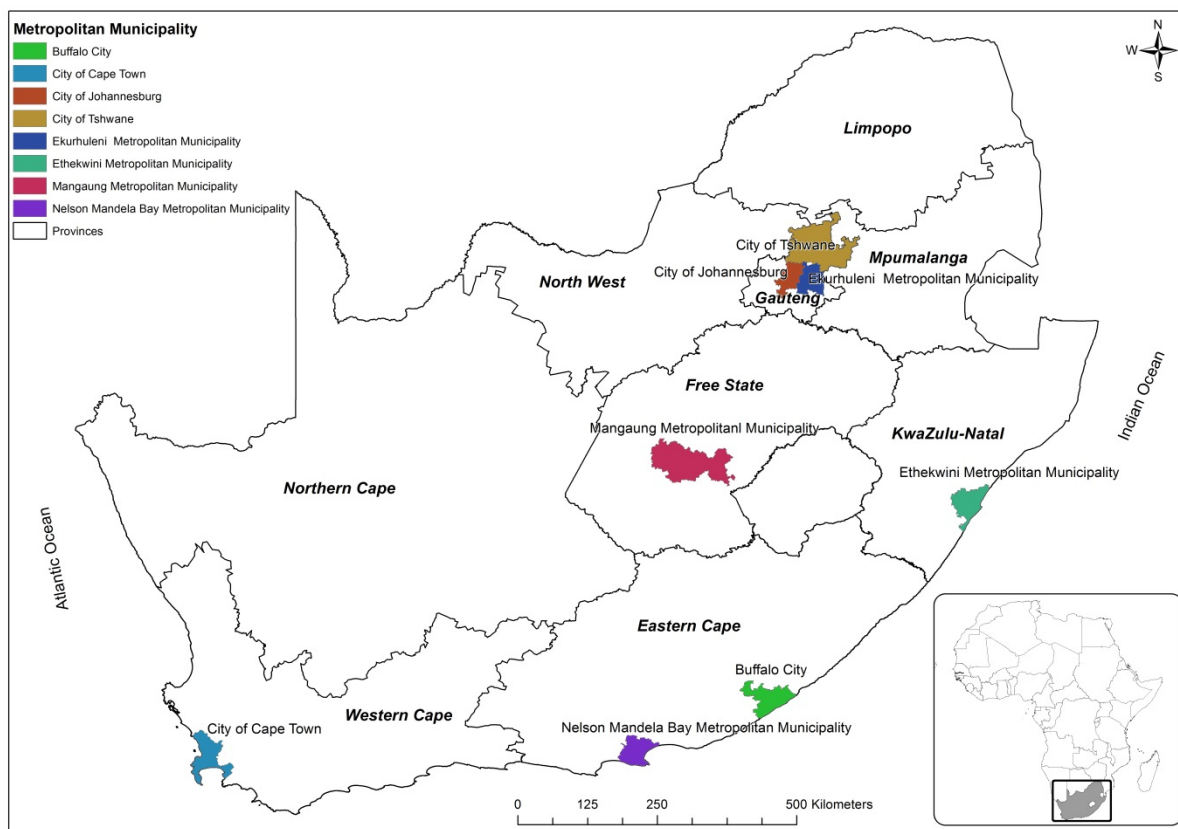
Table 2: Current metro configuration

| Cities | Metropolitan Area | Year of Establishment |
|-----------------------|-----------------------------|------------------------------|
| Cape Town | Cape Town Metro | 2001 |
| Durban | eThekweni Metro | 2001 |
| Ekurhuleni | Ekurhuleni Metro | 2001 |
| Johannesburg | Johannesburg Metro | 2001 |
| Port Elizabeth | Nelson Mandela Metro | 2001 |
| Pretoria | Tshwane Metro | 2001 |
| Bloemfontein | Mangaung Metro | 2011 |
| East London | Buffalo Metro | 2011 |

There are three metros located in close proximity with each other (City of Johannesburg, Tshwane and Ekurhuleni), with the rest of the metros spread throughout the country. Apart from the metros, South Africa is also divided into nine provinces—Limpopo, Gauteng, Mpumalanga, Northwest, Free State, KwaZulu-Natal, Northern Cape, Eastern Cape, and Western Cape. One notable feature is that there are three metros concentrated in Gauteng, and four provinces (Limpopo, Mpumalanga, Northwest, and Northern Cape) without a metro within their region (**Error! Reference source not found.**).

² The establishment of the Municipal Demarcation Board was catered for in the 1996 constitution, and the board was formally established in 1999.

Figure 0: The location of Provinces and metros in South Africa



The Footprint of Apartheid Cities in the Metros

There is a strong footprint of apartheid spatial economy in the current spatial configuration of South Africa's metros. The eight metros are aligned to the colonial-apartheid cities. The colonialists developed the cities in order to serve the interests of the settlers and the empire. Below, we briefly discuss the development of these cities around which the metros are configured.

In the initial phase, the colonialists mainly entered the foreign lands through the coastal line—this due to the mode of transportation, sea travel. Consequently, the first cities in South Africa were developed along the coastal line:

- *Cape Town*: At the Southern tip of Africa, the first cohort of settlers arrived in 1652 and established a refreshment station. The area subsequently evolved into an area of more economic activity as the settlers started farming in the area. Cape Town eventually became the first city of South Africa.
- *Port Elizabeth*: In 1820 the British established a settlement at Algoa Bay, which subsequently became known as Port Elizabeth. With the establishment of a railway network linking Port Elizabeth with Cape Town and Kimberly, the harbour in Port Elizabeth proved strategic, and it propelled the area to develop into a city. Port Elizabeth remains a major sea port and is also the home of the motor industry, housing General Motors and Volkswagen, and tyre companies such as Firestone, Continental and Dunlop.
- *Durban*: In 1824, the British in their bid to control the eastern coastline established a settlement along the shore of Natal Bay. Durban started as a trading station and also functioned as a harbour. The boom in the sugarcane industry in Natal also served to enhance the significance of the Durban harbour. Durban is among the leading seaport cities in Africa, making it a key area for the entire Southern Africa region.
- *Buffalo City (East London)*: In 1836 the British, due to security concerns in the coastline, sent some of their military personnel to the Buffalo River area. They started trading in the area, and eventually they established a settlement there. The place was initially named Port Rex and was later renamed to East London; however, the place is now known as Buffalo City.

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It is important to note that the four cities mentioned above are all located along the eastern coast of the country. This somehow implies the importance of sea transportation in the formation of these cities.

The cities inland were established due to military and economic factors. Three cities eventually developed inland:

- *Bloemfontein*: The city of Bloemfontein started as an outpost of the British army in 1846 and afterwards came to serve as a capital of the Orange River Colonies. Agriculture and mining became the dominant economic activities in the area. Bloemfontein is currently the judicial capital of South Africa, as it hosts the Supreme Court of Appeal.
- *Johannesburg*: The discovery of gold at the Witwatersrand gold reef in 1886 saw the development of Johannesburg into a major economic hub. The need arose to build a railway line from Cape Town to Johannesburg via Bloemfontein to have a linkage to the economic activities inland.
- *Pretoria*: Pretoria was founded earlier than 1886, with the first farms just before 1855, and it soon became the administrative capital when the Union of South Africa was formed in 1910. All these cities developed during the colonial period in the service of the colonial empires and colonial settlers.

The development of these enclaves was tied with the colonial project of land dispossession which eventually saw the black majority left with 13% of the land and the white minority having 87% of the land. The colonial expansion of the Dutch and the British in South Africa (and elsewhere in Africa) left the native land-rich societies as land-poor societies in the service of the colonialists. Through colonial expansion the colonialists guaranteed themselves access to the raw materials, thereby increasing investments and opening up new attractive markets for the colonial capitalists. Investment in distant lands by both imperial governments and private investors were attractive, as it offered two main advantages: high profitability and security provided through legalised political domination (Marseille, 1984).

The Promotion of Bantu Self-Government Act of 1959 was supposed to seal the land dispossession project. The indigenous people were required to have citizenship in their ethnic “homelands” or “Bantustans” or “African reserves” (Bophuthatswana, Ciskei, Gazankulu, Kangwane, Kwandebele, KwaZulu, Lebowa, Qwaqwa, Transkei, and Venda), which were supposed to become independent countries—a status which was only acquired by four of them, Transkei (1976), Bophuthatswana (1977), Venda (1979), and Ciskei (1981). The ideology of racial separation and spatial separation was intended to serve the white economy; however, the blacks had to pay a huge price for the maintenance of the white economy and white supremacy, as they had to settle for less—13% of land in the African reserves—and to live in the sanctioned areas at the periphery of white towns and cities. To be black was to live outside of white privilege and was to be faced with the constant reminders of exclusion on the basis of race.

It is also noteworthy that no area within the former homelands has developed into a metro, while all the previously white cities are now hosting metros. This is not surprising, as the black majority were forced to hold the short end of the stick. The dismantling of the colonial-apartheid system meant that the black masses now have free access and the right to occupy areas that were previously only white areas. However, the political freedom did not automatically amount to a complete undoing of economic segregation, spatial exclusivity, and elite privilege.

During the colonial-apartheid era, the agglomeration of CHQs had to do with the state forces and the racialized urban planning of South African cities. The CHQs were predominantly located in the cities and not in those zones that were regarded as homelands. Some would regard this as a “historical accident,” meaning that it was in those white cities where there was potential for the companies to invest and locate. However, the colonial project was not an accident of history; rather it was a project that was aimed at servicing the interests of colonial settlers and the colonial empire. The Johannesburg Stock Exchange (JSE) was established in 1887 to cater to the gold rush, as it became a platform for shares trading in the mining industry in the Rand area. This institution continued to strengthen over the years and is currently ranked at twentieth in the world.

Agglomeration economies in the metros

The metros are often described in terms of their dominant economic activities. This refers to the economic concentration of activities within the region (Marshall, 1890). This economic concentration is referred to as *agglomeration economies*, which usually lead to the development of larger cities. CHQs of the same or different industries or sectors may choose to agglomerate to share infrastructure and the labour pool, as well as knowledge spillover and matching business requirements for labour (O’Sullivan, 2012; Storper, 2010; Turok, 2012). It is important to understand this localisation, as well as urbanisation economies, to explain the nature of

clustering within a city. Scott (1982) argues that businesses tend to be attracted to areas in which businesses have already been established. There is potential for increase in innovation and productivity where firms are agglomerated (Porter, 1998). CHQs share business services with each other and also perform various tasks that require the same expertise, thereby warranting their agglomeration. Straus-Kahn and Vives (2009) observe that CHQs tend to locate or relocate to the metropolitan areas with airport facilities, low corporate taxes, low average wages, and a high level of business services, same-industry specialization and agglomeration of CHQs. A study by Harrison et al. (2008) finds that access to amenities and employees are some of the reasons companies decide to locate in certain areas. Access to major highways, as well as the image and the visibility of the company, were seen as important factors in the clustering of companies (Rogerson, 1998). Recently, Stahl (2014) has argued that the agglomeration of CHQs in close proximity to capital cities is to enable them to influence the policy-making processes. Agglomeration economies may aid in explaining the high concentration of CHQs in the inland metros. Taking into consideration that these areas were active economically, this may have acted as a pull factor for more companies to locate there. This concentration can either be diversified or specialized.

The metros may specialise in particular industries, but when it comes to CHQs, they are usually diverse within a particular location. This may be because corporations generate spillover effects (Storper, 1997; Oinas, 1997; Yeung, Poon and Perry, 2001) that attract other industries offering complementary services. The spatial concentration of CHQs makes the metros to be economically influential and powerful nationally (Chandler, 1990; Rice and Pooler, 2009; Rice, 2010; Tonts and Taylor, 2010).

Some of the CHQs are located where they are because they are seeking natural resources, markets, efficiency or strategic assets. In terms of natural resource seeking, the location of CHQs may be influenced by the resources in the metro. These resources may be human, physical or natural. Some of the resources are location bound while some may shift over time. The physical and natural resources include but are not limited to infrastructure and minerals. Usually these are the types of resources that are in situ and cannot be transferred to another metro. The human capital is the labour force in the area, which can change over time depending on the mobility of the population. On the market seeking side, companies focus on access to the market. In terms of efficiency and strategic assets, companies are more focussed on being competitive.

The level of infrastructure

South Africa is regarded as one of the most urbanised countries in Sub-Saharan Africa, with the second largest economy in Africa, as measured by the Gross Domestic Product. The Bank of International Settlement, quoted in Nyasha and Odhiambo (2015, 94), notes that “the South African financial system is by far the largest, most developed, and most sophisticated in Africa, and it compares well with the financial systems of the developed world.” Over the years, the country has undergone a process of reforming both the banking and stock markets sector to make it competitive and to attract investment into the country. In addition, the country is also home to the world’s twentieth-largest stock exchange, as measured by market capitalisation, and also the largest exchange in Africa.

South Africa resembles a modern economy with a hierarchy of cities: “metropolitan cities, secondary cities, large towns and smaller service centres which were connected by a network of road and rail, but these spatial arrangements were layered together with spatial patterns that reinforced extreme social inequalities and highly uneven access to the economy” (Harrison and Todes, 2015:8). Although the government is trying to reverse this fragmentation to distribute infrastructure evenly across the country, it will take time. Hence the concentration of economic activities in certain cities.

Apart from apartheid, the distinctive mineral extraction from different parts of the country has facilitated the fragmented infrastructure development. The large-scale mining expedited the massive investment in infrastructure and development of related support industries in the country (Turok, 2014). At the same time, the growing mining operation enabled the investment in transport and communication infrastructure. These included the railway line to transport goods and services to the harbour, the airports and the neighbouring countries (**Table 3**). The railway line also linked different cities and many mining plants. The growing human mobility also facilitated the network of roads linking the different cities as well as the countryside. As a result, the country boasts a well-developed transport infrastructure.

Table 3. Some of the airports and ports in South Africa

| <i>Airports*</i> | | <i>Ports*</i> |
|---|---|---|
| <i>National Lines</i> | <i>International Lines</i> | |
| <u><i>Bloemfontein Airport</i></u> | <u><i>Cape Town International Airport</i></u> | <u><i>Port of Cape Town</i></u> |
| <u><i>East London Airport</i></u> | <u><i>King Shaka International Airport</i></u> | <u><i>Port of Durban</i></u> ³ |
| <u><i>George Airport</i></u> | <u><i>Kruger Mpumalanga International Airport</i></u> | <u><i>Port of East London</i></u> |
| <u><i>Hendrik Van Eck Airport</i></u> | <u><i>Lanseria International Airport</i></u> | <u><i>Port of Mossel Bay</i></u> (only for crew movement) |
| <u><i>Kimberley Airport</i></u> | <u><i>OR Tambo International Airport</i></u> | <u><i>Port of Port Elizabeth</i></u> |
| <u><i>Lanseria Airport</i></u> | <u><i>Pilanesberg International Airport</i></u> | <u><i>Port of Richards Bay</i></u> ⁴ |
| <u><i>Mthatha Airport</i></u> | <u><i>Polokwane International Airport</i></u> | <u><i>Port of Saldanha Bay</i></u> (only for crew movement) |
| <u><i>Pietermaritzburg Airport</i></u> | | <u><i>Agriport in Durban</i></u> |
| <u><i>Port Elizabeth Airport</i></u> | | |
| <u><i>Richards Bay Airport</i></u> | | |
| <u><i>Skukuza Airport</i></u> | | |
| <u><i>Upington Airport</i></u> | | |
| <u><i>Wonderboom Airport</i></u> | | |
| *There are more ports and airports apart from the list above. | | |

South Africa, in particular the city of Johannesburg is the highest ranked city in Africa and it competes with developed countries in terms of serviced office space (Turok & Borel-Saladin, 2013). The country also boost with a combination of both world class and average infrastructure in different parts of the country.

DATA AND METHODS

Data Sources

The data was obtained from the Johannesburg Stock Exchange on 21 September 2016. It comprised all listed companies, accounting to 483. After accounting for double listing, 355 companies remained. Only 285 companies had their CHQs in South Africa. Out of the 285 CHQs, 18 are located outside the metros, leaving a total of 267 of those CHQs located within the metros. Those CHQs outside the metros are located within the following provinces: Kwazulu-Natal (3), Western Cape (9), Gauteng (4), and Mpumalanga (2). Most of these CHQs are resource-oriented firms choosing their location based on the natural resources within the Provinces. Out of the 18 CHQs, 11 are in the Manufacturing and two (2) in the Mining and Quarrying industry. It is also important to note that the majority of these CHQs are in close proximity to either national roads or inputs. In accordance to the JSE listing, the companies are categorised as follows (**Table 4**):

³ One of the largest shipment terminals in Sub-Saharan Africa and also rated the fourth-largest container terminal in the Southern Hemisphere.

⁴ One of largest coal exporters in the world.

Table 4: Distribution of CHQs

| SIC | Total September listing 2016 | CHQ in South Africa | CHQs within the Metros | Associated Industries |
|--|------------------------------|---------------------|------------------------|---|
| Finance, insurance, real estate and business services | 162 | 123 | 120 | Support Services, Travel & Leisure, Banks, Equity Investment Instruments, Financial Services, Life insurance, Non-equity Investment, Non-life insurance, Real Estate Investment, Software and Computer Services |
| Community, social and personal services | 12 | 11 | 10 | Personal goods, Health Equipment & Services, Pharmaceutical & Biotech, |
| Construction | 19 | 18 | 18 | Construction & Material |
| Electricity, gas and water | 4 | 2 | 2 | Oil & Gas Production |
| Manufacturing | 66 | 65 | 54 | Industrial Engineering, General Industrial, Electro & Electrical Equipment, Media, Leisure Goods, Food Production, Auto & Parts, Industrial Metals & Mineral, Forest & paper, Chemicals, Beverage, |
| Mining and quarrying | 47 | 29 | 27 | Mining |
| Transport, storage and communication | 20 | 14 | 14 | Fixed-Line Telephone, Mobile Telecommunication, Industrial Transportation |
| Wholesale and retail trade, catering and accommodation | 25 | 23 | 22 | General Retail, Food & drug Retail |
| Total | 355 | 285 | 267 | |

Analytical Techniques

The concentration of CHQs was measured through the use of the spatial deviational ellipse (SDE). Lefever (1926) and Furfey (1927) were amongst the first scholars to discuss the SDE and its application in the spatial analysis of the geographical units. It is unlikely to have a uniform concentration of CHQs across space; some areas might have higher concentration than others. To understand the concentration or distribution, two principal points are important, those being the central tendency and the dispersion (Lefever, 1926). To determine the central tendency, Lefever (1926) suggests that it can be calculated the same way as the mean, while dispersion can be measured through standard deviation. Furfey (1927:94) suggests that “the central tendency gives the middle point around which the separate units are grouped.” The dispersion measured through standard deviation distinguishes between units that are closely clustered together around the centre and the ones that are scattered. It is the measuring of dispersion that is calculated through the use of the standard deviational ellipse (Lefever, 1926). There are three parameters for the SDE: The angle of rotation from the point of origin, spatial mean, and standard deviation along the *x*- and *y*-coordinates. These parameters are essential to construct the SDE for each type of observation.

For the angle of rotation equation, find the mean centre to transform the coordinates in the region towards it, and rotate the coordinates clockwise around the new mean by a certain angle. This will help determine the standard deviation along the x - and y -coordinates from the spatial mean (Eq. 1–3). The axes of the ellipse can be determined with or without the weight, although the weight may provide a more realistic directional distribution (Margai and Oyana, 2015).

The angle of rotation θ

$$\tan \theta = \frac{(\sum_{i=1}^n x_i^2 - \sum_{i=1}^n x_i^2) + \sqrt{(\sum_{i=1}^n x_i^2 - \sum_{i=1}^n x_i^2)^2 + 4(\sum_{i=1}^n x_i y_i)^2}}{2 \sum_{i=1}^n x_i y_i} \quad (1)$$

Where x_i' and y_i' are the deviations of x - and y -coordinates from the spatial mean.

The standard deviation along the x -axis is given by

$$\sigma_x = \sqrt{\frac{\sum_{i=1}^n (x_i' \cos \theta - y_i' \sin \theta)^2}{n}} \quad (2)$$

Standard deviation along the y -axis is given by

$$\sigma_y = \sqrt{\frac{\sum_{i=1}^n (x_i' \sin \theta + y_i' \cos \theta)^2}{n}} \quad (3)$$

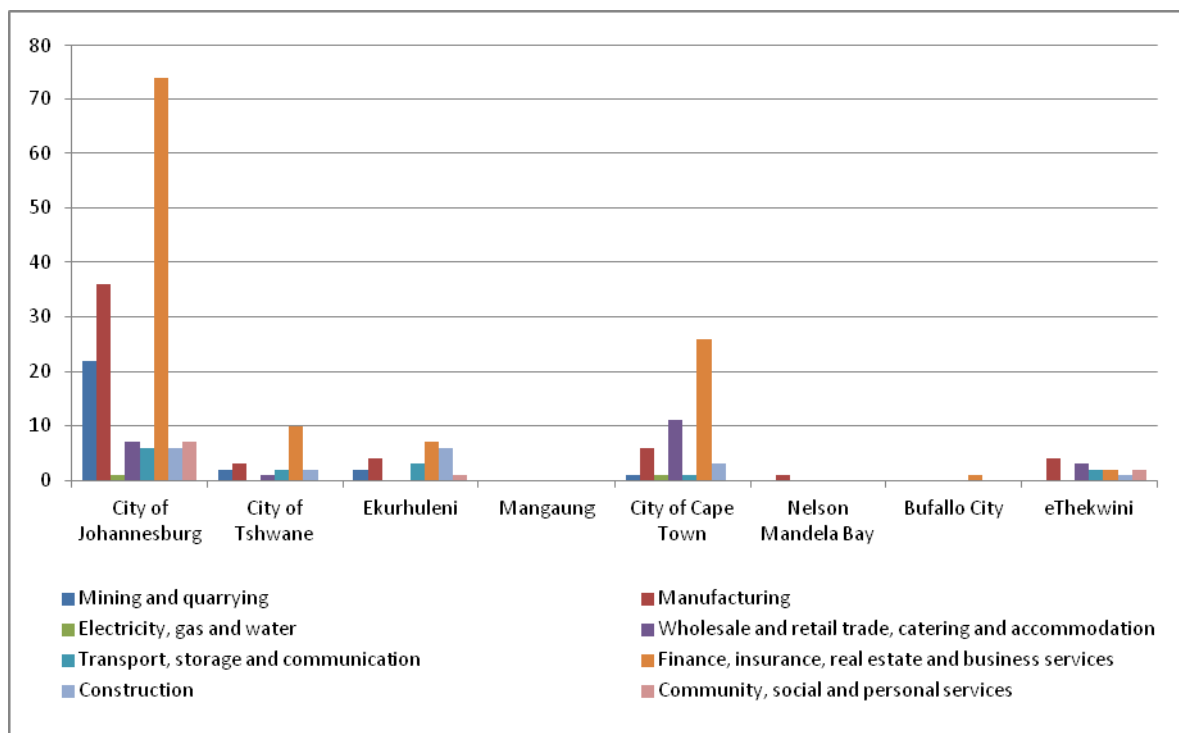
DISCUSSION

The extent to which diversity or specialisation of economic activity in the metro influence headquarters location is the subject of debate (Hoover, 1948; Richardson, 1969; Quigley, 1998; Beaudry and Schiffauerova, 2009).

The overall distribution of the 267 CHQs in the eight metros is as follows (see also **Figure 1**):

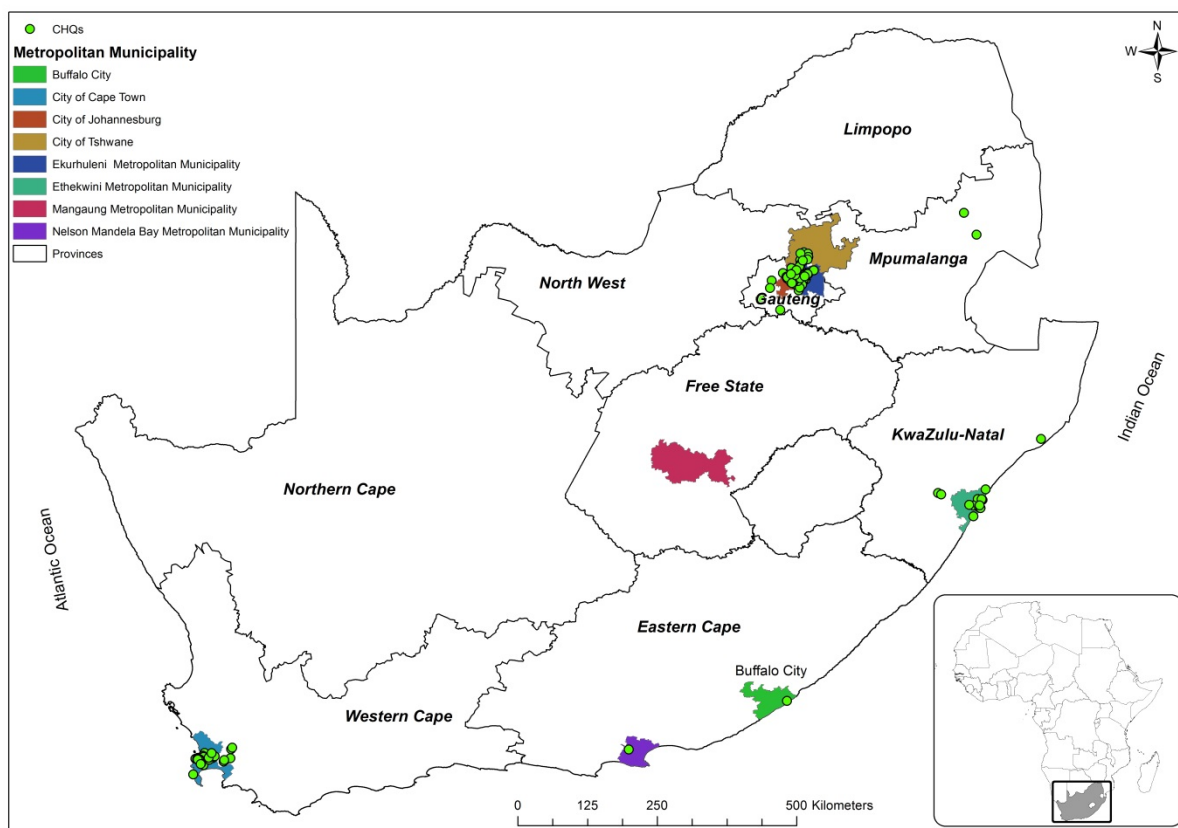
- *Inland metros*: Johannesburg (159), Tshwane (20), Ekurhuleni (23) and Mangaung (0).
- *Coastal metros*: Cape Town (49), Nelson Mandela (1), Buffalo (1), and eThekwini (14).

Figure 1: The distribution of CHQs in South Africa across metros



Distribution of CHQs inland versus coastal: The highest concentration of CHQs is in the inland metros, with 202 CHQs accounting for 75.7 % of CHQs, as compared to the coastal metros, with 65 CHQs accounting for 24.3 %. This serves as an indicator that most economic activity is happening within the inland metros rather than coastland ones. However, this does not imply that CHQs in the inland metros are evenly distributed. The two coastal metros of Cape Town and eThekwni have more CHQs in their areas than most of the inland metros, with the exception of the City of Johannesburg, which has the highest number of CHQs within its borders, with 159 CHQs accounting for 59.6% of the CHQs (Figure 3). It worthy to note that Johannesburg has the highest number of CHQs across all sectors with the exception of the Oil and Gas sector, in which it has one HQ, same as Cape Town.

Figure 3: The spatial distribution of CHQs in South Africa



Distribution of CHQs inland: The corporate headquarters of the inland metros are concentrated in one province, Gauteng, which has three metros. The City of Johannesburg, as already noted, has 159 CHQs accounting for 59.6% of CHQs; Ekurhuleni has 23 CHQs accounting for 8.6% of CHQs in its location, Tshwane with 20 CHQs accounting for 7.5 % of CHQs, and Mangaung with no CHQs. Three of the inland municipalities—Johannesburg, Tshwane, and Ekurhuleni—are all within Gauteng Province, which is the economic hub of South Africa and the smallest province in the country in terms of landmass. The three metros are in close proximity with each other, and they even share borders. Therefore, it can be reasonably assumed that the three metros would share positive externalities with each other. However, this has not translated into CHQs being evenly distributed in the three metros.

Distribution of CHQs along the coast: CHQs in the coastal metros are distributed mainly in two municipalities, Cape Town and eThekwni. It should be noted that none of the coastal provinces has more than one municipality in its vicinity except Eastern Cape Province, which has Buffalo City and Nelson Mandela Bay metros. The Eastern Cape Province, although it hosts two metros, has only two CHQs located there. Thus, the two metros within the Eastern Cape Province account for the lowest number of CHQs as compared to other provinces.

A number of observations can be made regarding the concentration of CHQs in comparing the inland and coastal metros. There is a high concentration in the inland metros as compared to the coastal. However, the concentration in the inland metros is in three metros—City of Johannesburg, Tshwane and Ekurhuleni—whereas in the coastal metros, there is high concentration in the City of Cape Town and eThekwni metros.

CHQs have agglomerated in one area, following a certain trend across all metros. The spatial directional trend analysis using standard deviational ellipses at 1, 2 and 3 standard deviations indicates that CHQs in Gauteng (City of Tshwane, Ekurhuleni, and City of Johannesburg), Western Cape (City of Cape Town) and in KwaZulu-Natal (eThekweni) are clustered and aligned along national roads; that is, most of CHQs are located along N1 in Gauteng and in the Western Cape, and along N2 in KwaZulu-Natal (eThekweni: Figures 4–6).

The standard deviational ellipse can be used for a set of geographical units, which is regarded as points that are set in two-dimensional space (Gong, 2002). The radius of the curve shows the distribution of the points along the orientation. Figures 4–6 indicates that the longer the curve, the higher the likelihood of the geographical points spreading sparsely along the radius.

Figure 4: Spatial directional trend for City of Johannesburg, Tshwane and Ekurhuleni

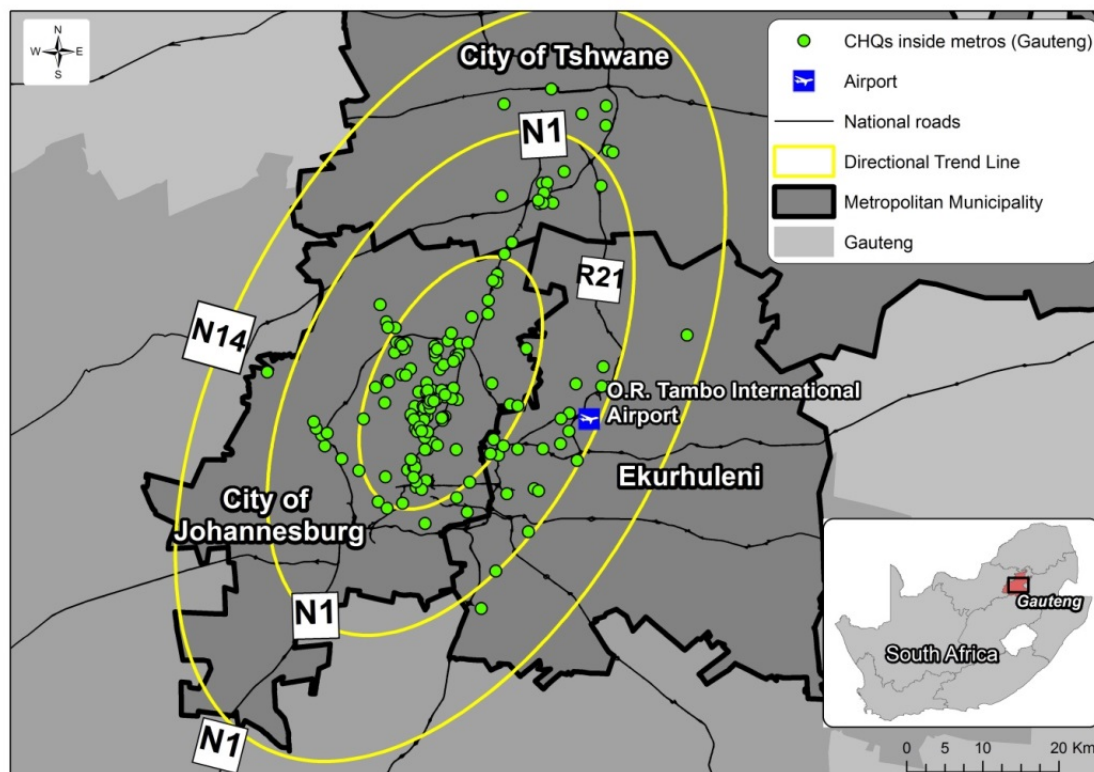


Figure 5: Spatial directional trends for City of Cape Town

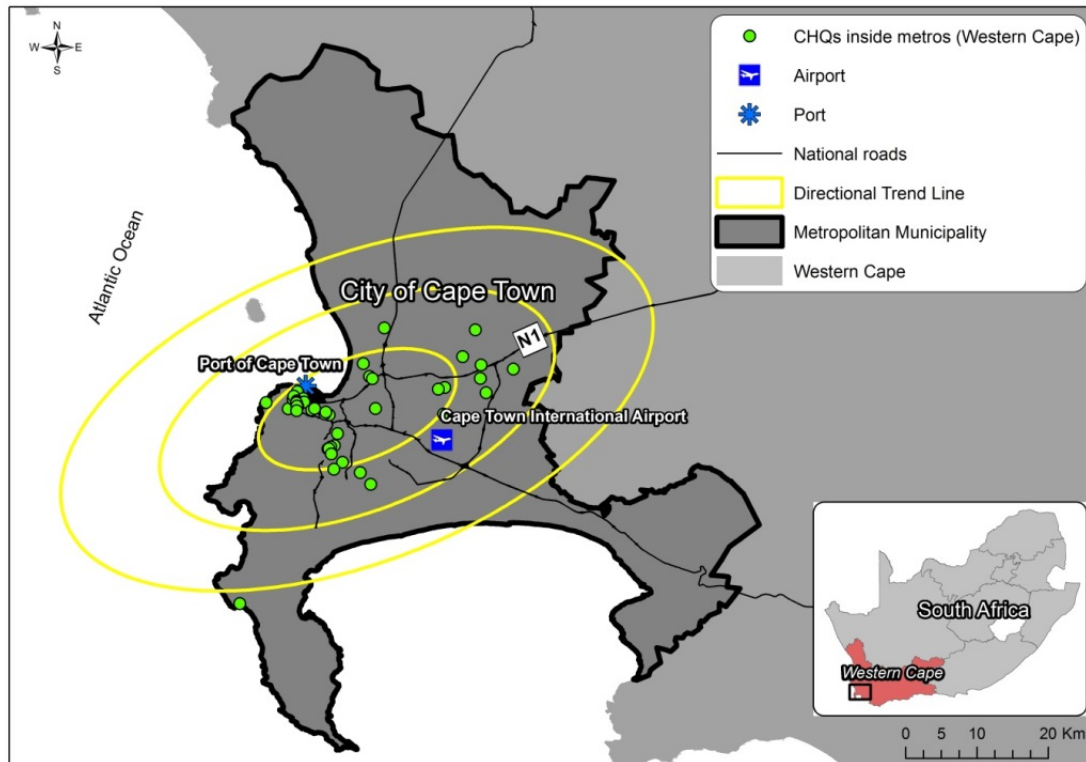
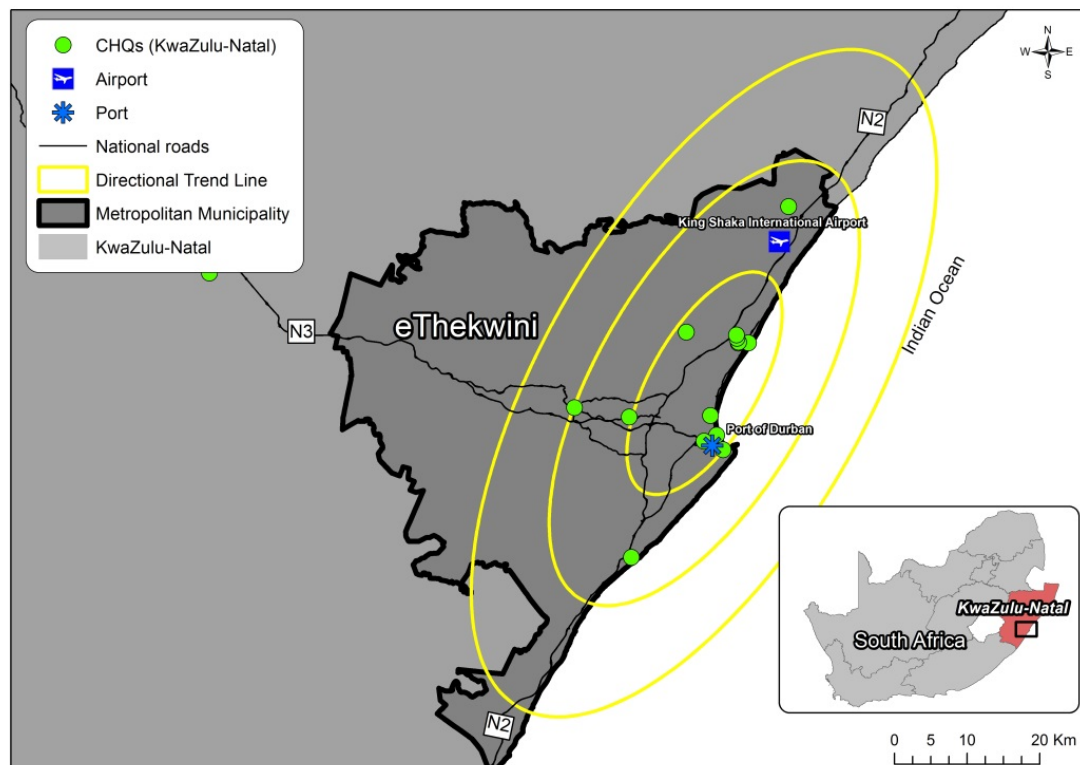


Figure 6: Spatial directional trends for eThekweni



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So far, the analysis reveals that the city of Johannesburg is the key metro in hosting CHQs in the country. Although some key issues were seen in terms of knowledge spillover, following the necessary skills, further investigation is essential into finding out the factors that determine the choice of this location by different industries.

Diversification is the phenomenon that is prevalent in the following metros: City of Johannesburg, Tshwane, Cape Town and eThekweni. These metros contain a wide range of unrelated sectors; however, in all these metros certain industries tend to dominate. The advantages of diversification is that the economy is not based on one sector. This might be the reason for the City of Johannesburg to be leading economically, as it hosts most of the CHQs across the industries.

The distribution of CHQs across the different metros in South Africa sheds some light on the spatial, social, political and economic past of the country. The CHQs are concentrated in the areas that were white in the days of the Republic of South Africa, while the Bantustans and the homelands host none of the CHQs. It is the same case with the townships: there are no CHQs located within their boundaries. Major companies who came to supply the necessary resources needed to support the mining located in close proximity to the mines. In the same way, other companies located next to the coast for easy transportation and later on next to the airport for easy linkages with the international markets. The current spread of CHQs tells a story of the colonial history of the country. The past of the country is still in play in the current South African economy. The distribution of CHQs in South Africa speaks to the ramifications of the political past of the country.

The Republic of South Africa boasts first-world infrastructure, while the other parts of the country have third-world infrastructure. The location of CHQs has followed the infrastructure that is readily available. The only metro that does not host any CHQs of the listed firms is Buffalo City. The area has well-established infrastructure but instability during the apartheid period, and the sanctions affected the area, which resulted in companies leaving the area around the Port of East London and the airport.

CONCLUSION

It is not a surprise therefore to see the concentration of CHQs in certain regions or metropolitan areas. Johannesburg, Cape Town and Durban were the major cities during the apartheid period, and a lot of investment went into these cities. It is not a surprise that these three cities dominate in the percentage of CHQs located within their jurisdiction. City of Johannesburg, City of Tshwane and Ekurhuleni all fall under what was then Johannesburg, while eThekweni is in Durban and City of Cape Town. Therefore, CHQs tend to locate in areas with well-developed infrastructure. In terms of human capital, it can take both directions, where people are attracted to come to the areas because there are employment opportunities, or where people were already there waiting for more companies to come so that they could get jobs. The same applies with quality office space provided in the areas. Further research is needed to unpack CHQs location in each metro, looking at the behaviour of industries of different sectors.

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