

Life in a Changing Urban Landscape

Proceedings of the
IGU Urban Geography Commission
(Urban challenges in a complex world)

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University of Johannesburg
Johannesburg
2014

Life in a Changing Urban Landscape: Proceedings of the IGU Urban Geography Commission (Urban Challenges in a Complex World), Johannesburg and Stellenbosch, 21 – 26 July 2013.

Cover: Momcilo Stamenkovic

ISBN 978-0-86970-769-2

Printed by: 4Colour Print

Johannesburg

2014



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Introductory review



Venice (Source: Nico Kotze)

Life in a changing urban landscape: an introductory review

Gustav Visser

The Urban Commission of the International Geographical Union (IGU) is designed to encourage geographical research on the urban challenges emerging in an increasingly complex urban world and to further the exchange of findings among urban geographers from across the globe. Urban places with their distinctive processes and problems are major features of contemporary urban geographies. The Urban Commission aims to use a comparative global context to focus on urban properties, the social, economic and environmental issues they pose, and to evaluate the utility of political and societal solutions to these problems. From 21 to 26 July 2013, the Urban Commission of the IGU held a conference in Johannesburg and Stellenbosch, South Africa, hosted by the Department of Geography, Environmental Management and Energy Studies, University of Johannesburg and the Department of Geography, University of Stellenbosch.

IGU Commission meetings are designed to provide focused discussions on particular sub-disciplinary areas of current importance in the Geographical sciences in small group formats. These small meeting formats provide the opportunity to more comprehensively engage scholars and their research. In addition, these gatherings generally present a number of fieldtrips that highlight issues of importance and interest in the host country. The 2013 Johannesburg/Stellenbosch meeting was somewhat unusual being presented in two different parts of South Africa. On the one hand, the context was Africa's leading economic metropolis – Johannesburg and on the other, Stellenbosch – a university town in the Western Cape Winelands. The Commission meeting was well-attended with 65 presentations equally divided between the two locations. Similarly the delegates had the opportunity to participate in fieldtrips to South Africa's iconic township Soweto, Cape Town's CBD and the Stellenbosch Winelands. Nearly 20 different countries were represented at the conference, with papers describing the challenges of urban areas spanning both the developed North and developing South.

Thematically the Commission meeting provided insights into a diverse range of urban issues ranging from statistical modelling to the uneven development of urban spaces, second homes, sexuality and space issues, SMME development and environmental impacts of energy sources in townships. In terms of geographical focus, similar diversity was registered. Countries as diverse as Brazil, China, Germany, India, Poland and South Africa were brought into the same analytic frame of discussion and debate.

The collection of papers assembled in this volume provides a selection of papers presented at this meeting. These contributions are loosely arranged around five themes of review and analysis. The first concerns urban systems, policy frameworks and change in a number of different urban contexts. The second sheds light on issues of contestation in urban environments, and the third the role of "the cultural" in re-imagining urban spaces. The fourth section provides a collection of case studies dealing with fine-grained analyses of a number of different urban processes in cities and towns across the globe. Finally, a range of issues related to the informal economy and urban ecology comes into view.

We would like to take this opportunity to extend our thanks to the many people involved in this Commission's conference and the reviewers of the papers assembled in this publication.

The papers contained in this proceeding have been subjected to an academic review process. Each paper was reviewed by two anonymous referees. As an editorial collective we thank the following colleagues who assisted in reviewing the contributions in this volume. Nico Kotze would like to thank Proffs. Kevin Mearns (Unisa), Cecil Seethal (UFH), Dr Jayne Rogerson (UJ), Ms Tracey McKay (Unisa) and Ms Liz Block (UJ) for their contribution in reviewing the papers. Ronnie Donaldson acknowledges the generous support of Dr Manfred Spocter (US), Dr Pakama Siyongwana (NMMU), Ms Amanda van Eeden (US), Ms Lodene Willemse (US), Mr Danie du Plessis (US) and Mr Herman Geyer (US). Gustav Visser acknowledges Dr Malene Campbell (UFS), Mr Jan Cloete (UFS), Drs Gijsbert Hoogendoorn (Wits), Jennifer Houghton (UKZN), Ruth Massey (UFS) and Ms Anita Venter (UFS), for their contribution in reviewing a set of papers.

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I. Urban systems, policy and change



London (Source: Nico Kotze)

Spatial modelling of urban change using satellite remote sensing: a review

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Abstract: Urbanization is one of the most evident human-induced global changes. Population growth is an important factor that contributes to change in any urban system. Although urbanization has been an issue of concern, its rate is of a more serious concern. Despite its economic importance, urban growth has a considerable impact on the surrounding environment. Addressing the various challenges posed by urbanization process requires spatio-temporal analysis of cities and regions. This is because cities are dynamic so also are the processes that are shaping cities globally and locally. Researchers and city planners have assessed urbanization processes through the lens of remote sensing and Geographic Information System (GIS). Recent advances in RS and GIS tools with varying analysis techniques have enabled researchers to model urban change effectively. Using a critical review approach, this paper contributes to the growing bodies of knowledge by reviewing published studies that made use of satellite RS and GIS in understanding the dynamism of urban areas through change detection and urban modelling.

Introduction

Urban areas are regions with a high level of spatial dynamism where their size is rapidly increasing. Urbanization is one of the most evident human-induced global changes worldwide. In South Africa, urbanisation levels reached 56% in 2001, resulting in a 4.3% increase from 1996 to 2001 (Kok and Collinson, 2006). The growth of urban areas depends on numerous factors including social, economic, demographic, environmental, geographic, cultural, and others. Therefore, modelling such a dynamic system is a challenging task.

Population growth is one of the most important factors that contribute to any urban system change. The expansion of a city beyond its periphery requires population growth spatially distributed. Growth in population contributes to urban change by absolute growth, which increases urban areas, and changes the dynamics of urban demography. Of that urban population, the numbers residing in small cities generally swells at a striking rate, and in parallel, there is usually an associated decrease in household sizes and a related increase in the number of housing units (Qiu, *et al.*, 2003).

Remote sensing (RS) and Geographic Information Systems (GIS) techniques are some geospatial tools being widely used to assess natural resources and monitor spatial changes. Land use/cover (LULC) change dynamics can be analysed using time series remotely sensed data and linking it with socio-economic or biophysical data in GIS (Moeller, 2004). The incorporation of RS and GIS enables unique analyses involving environmental changes and these include land cover mapping, detecting and monitoring over time, identifying land use attributes, and change hot spots. With the advancement of technology, reduction in data cost, availability of historic spatio-temporal data and high resolution satellite images, GIS and RS techniques are now useful research tools in spatial change and modelling (Feng,

2009). This review focuses on published studies that have been conducted using satellite remote sensing data in urban change detection and modelling. In addition, the paper considers the cellular automata and Markov models used in urban growth.

Urban growth and sprawl

Urban growth varies in definition across countries and fields of studies. It shall be considered for this review as the increasing physical transformation of urban land into other structures such as buildings in response to population increases. It could be planned or unplanned. This review focuses on the unplanned growth, also referred to as sprawl.

Urban sprawl refers to uncontrollable, irresponsible and poorly planned expansion of an urban area into rural land destroying green spaces, increasing traffic, contributing to air pollution, leading to congestion with crowding and does not contribute significantly to national income. The direct implication of urban sprawl is change in land-use and land-cover of the region since sprawl induces an increase in built-up and paved areas (Bhatta, 2012; Mohammadi, *et al.*, 2012). Urban sprawl can be considered a significant and growing problem that entails a wide range of social and environmental issues (Araya and Cabral, 2010).

Researchers have been challenged with the definition of urban sprawl as it can be considered from different perspectives. According to Bhatta (2012) sprawl may either refer to: certain patterns of land use, or processes of land development, or causes of particular land-use behaviours, or consequences of land-use behaviours.

Urban sprawl can be measured through the use of indicators selected according to the specific area of study. These indicators include low-density or single-use housing; development at substantial distance from urban areas; development in radial, stripped or isolated emanating from urban areas; development into protected or agricultural land; and others. Researchers have established multi-dimensional indicators through GIS analysis or descriptive statistical analysis to measure urban sprawl (Fina and Siedentop, 2008; Schneider and Woodcock, 2008). RS and GIS can be applied separately or in combination for application in studies of urban sprawl (Wei, *et al.*, 2006; Huang, *et al.*, 2007; Yu and Ng, 2007; Mahesh, *et al.*, 2008).

Understanding the geographic locations of urban growth points is an essential aspect in urban studies. Researchers require monitoring systems to enable them spatially locate initial seed points and the development type resulting from them. These systems can be used for planning purposes and a detailed reporting of overall urban growth. They include geospatial tools which can enable the comparison of different cities by their growth levels (Moeller, 2004).

Urban change detection and modelling

Urban change detection involves the identification of missing regions in one image corresponding to appearance or disappearance of objects, motion of objects or shape changes of objects in an urban environment and surroundings. This change has traditionally been detected by defining a threshold. The threshold can be chosen empirically as in specific applications or commonly-used automatic thresholding methods classified into two bases: gray-level distribution and spatial properties (Rosin, 2002). A review of image difference followed by threshold-based method has been proposed (Radke, *et al.*, 2005).

A spatial data analysis method that comprises exploratory data analysis and spatial logistic regression technique is used to seek and model major determinants of urban growth of Wuhan City in China (Cheng and Masser, 2003). In identifying spatio-temporal trends and dimension of urban form in Dhaka metropolitan area, Landsat images were classified using index-based expert process (Basak, 2006). The study was further modified by including socio-economic data for the evaluation (Dewan and Yamaguchi, 2009). A supervised classification algorithm and the post-classification change detection technique in GIS were applied. The accuracy of the land cover maps ranged from 85% to 90%.

Remote sensing techniques have also been used to quantify and map the detected changes in urban areas. Landsat Thematic Mapper (TM) imagery was used to quantify forest cover change in the Sundarbans of Bangladesh from 1989 to 2000 (Emch and Peterson, 2006). They applied the Normalized Differential Vegetation Index (NDVI), maximum likelihood classification and sub-pixel classification image processing techniques. While Griffiths, *et al.* (2010) on their part mapped the urban growth of Dhaka megacity region (1990 to 2006) using multi-sensoral data. They used a Support Vector Machine (SVM) classifier and post-classification comparison to reveal spatio-temporal patterns of urban LULC changes.

Predictive models have been developed that exploit the relationships between nearby pixels both in space and time (when an image sequence is available); and methods that are based on the fact that the decision rule is casted into a statistical hypothesis test (Araya and Cabral, 2010). Remotely sensed information is very useful in describing and modelling urban development process.

The predictive power of models such as the Cellular Automata (CA) based approach has been successfully validated for urban land use change (Araya and Cabral, 2010; Tewolde and Cabral, 2011). Cabral and Zamyatin (2006) implemented three land change models to forecast the urban dynamics in Sintra-Cascais municipalities of Portugal, for 2025. The models are CA-Markov chain model (CA-Markov), CA-Advanced and Geomod. The authors used image segmentation and texturing procedures to classify the Landsat images of 1989, 1994 and 2001. In predicting the urban growth of Sydney, Lahti (2008) used the CA model Metronamica, developed by the Research Institute for Knowledge Systems in the Netherlands. Wang and Mountrakis (2011) developed a GIS-based modelling framework called Multi-Network Urbanization (MuNU) model, which integrates multiple neural networks, to predict growth as in Denver Metropolitan Area.

An integrated Artificial Neural Networks and CA (ANN-CA model), was introduced for simulating the land-use map (Li and Yeh, 2000). The proposed model was implemented in China using satellite images. SLEUTH urban growth model is necessary to simulate the historical growth pattern of an area. SLEUTH model incorporates Slope, Landuse, Exclusion layer (where growth cannot occur), Urban, Transportation and Hill-shade data layers. SLEUTH uses a modified CA to model the spread of urbanization (Kashem, 2008). The integration of satellite RS and GIS can be an effective approach for analysing the spatio-temporal patterns of LULC change (Mubea, *et al.*, 2010). They combined satellite RS, GIS and Markov chains stochastic modelling techniques to analyse and project LULC changes. The results indicated that there has been a notable and uneven urban growth with substantial forest loss.

Remotely sensed data for change detection

Remote sensing is characterized by spatial, temporal, and spectral heterogeneity of urban environments (Herold, *et al.*, 2002). It is irrefutably a modern science, which studies the earth's changing environment, through remote sensing tools such as satellite imagery and aerial photographs. It is an appropriate source of urban data to support studies of urban growth as it provides a unique perspective on growth and land-use change processes (Lillesand, *et al.*, 2008).

Effective analysis and monitoring of land cover changes require a substantial amount of data about the Earth's surface. This is most widely achieved by using remote sensing tools. Remote sensing provides an excellent source of data, from which updated LULC information and changes can be extracted, analysed, and simulated efficiently. LULC mapping, derived from remotely sensed data, has long been an area of focus for various researchers (Herold, *et al.*, 2002; Yuan, *et al.*, 2005; Oluseyi, 2006; Mubea, *et al.*, 2010). Monitoring these changes and planning urban development can be successfully achieved using multi-temporal remotely sensed data, spatial metrics, and modelling (Araya and Cabral, 2010).

Remote sensing data derived from satellite sensors such as Landsat can provide information about the areal extent, conditions, boundary and monitoring of urban changes. Recent studies make use of data from different sensors to measure changes in landmass and population size. Ade and Afolabi (2013) used TM, ETM+ and Nigersat 1 data to analyse the physical expansion of Jos city. Importantly, remotely sensed imagery provides an efficient means of obtaining information on temporal trends and spatial distribution needed for understanding, modelling, and projecting land change (Epstein, *et al.*, 2002). It is consistent over great areas, time, and can provide information at different geographic scales.

Remote sensing analysis and modelling of urban change

Understanding the urban patterns, dynamic processes, and their relationships is a primary objective in the urban research agenda with a wide consensus among scientists, resource managers, and planners, because future development and management of urban areas require detailed information about ongoing processes and patterns. These patterns can be systematically mapped, monitored and accurately assessed from satellite data along with conventional ground data. RS and GIS techniques may be used as efficient tools to detect, assess and map land use changes (Araya and Cabral, 2010). In order to detect and evaluate urban changes, Reveshty (2011) applied image differencing, principal component analyses as well as fuzzy ARTMAP for classification. Results for the different dates are compared which reveal significant changes. For predictions into future scenarios, the combined CA with Markov chain analysis was employed.

The built-up area in an urban setting is generally considered as the parameter of quantifying urban sprawl (Epstein, *et al.*, 2002). It is quantified by considering the impervious or the built-up as the key feature of sprawl, which is delineated using toposheets or through the data acquired remotely. Mohammadi, *et al.* (2012) used Shannon's entropy, which reflects the concentration of dispersion of spatial variable in a specified area, to measure and differentiate types of sprawl. The measurement is based on the notion that landscape entropy or disorganisation increases with sprawl.

The spatial phenomenon in urban growth modelling is simulated geometrically using techniques of CA. The CA technique is used extensively in urban growth models and simulation. The challenge is that the models fail to interact with the causal factors driving the sprawl such as the population growth, availability of land and proximity to city centres and highway. Cheng and Masser (2003) modelled the urban growth pattern for Wuhan city in China considering the causal factors. This method was challenged in not being able to spatially pinpoint accurately where sprawl could occur. This challenge could be addressed by applying neural network to remotely sensed data especially for classification and thematic representation (Wang and Mountrakis, 2011).

Cellular Automata

Urban growth modelling is getting more attention as an emerging research area in many disciplines. This is because of the recent dramatic increase in urban population that has increased pressure on infrastructure services (Batty, 2005). In recent years, there has been a prolific application of CA models to urban systems. The models are impressive in terms of their technological evolution in connection to urban applications (Yang and Lo, 2003).

CA enables the understanding of the urbanization phenomenon and the exploration of what-if scenarios. It constitutes a possible approach to urban growth modelling by simulating spatial processes as discrete and dynamic systems in space and time that operate on a uniform grid-based space (Araya and Cabral, 2010). The ability of CA to represent complex systems with spatio-temporal behaviour, from a small set of simple rules and states, makes it suitable for modelling and investigating urban environments (Tewolde and Cabral, 2011).

CA simplifies the simulation of complex systems wherein basic elements of the city are represented in two distinct but related ways: through cells which represent the physical and spatial structure of the city, and through agents, which represent the human and social units that make the city work (Cabral and Zamyatin, 2006). CA models are attractive for simulating urban systems since local action gives rise to global forms emerging spontaneously with no hidden directives for the macrostructures. CA algorithm offers an interesting and innovative approach for simulation of urban systems.

Markov Model of Change Detection

The Markov model is an application that can be used to predict future changes based on the rates of past change. It is based on the probability that a given piece of land will change from one mutually exclusive state to another (Wijanarto, 2006). It functions by creating a transition matrix of pixels in each class for two time periods – basically the same as the cross-tabulation matrix that is used for accuracy assessment. The main diagonal of the matrix contains pixels that have not changed, while other cells contain pixels that have changed. In order to generate probabilities of change between classes, each cell value is divided by its row total. This results in the probability that a given class in date 1 will convert to another class in date 2 out of all possible changes (Lillesand, *et al.*, 2008).

Therefore, the Markov model analyses a pair of land cover images and outputs a transition probability matrix, a transition area matrix, and conditional probability

images. The transition probability matrix shows the probability that one land -use class will change to the others. The transition area matrix tells the number of pixels that are expected to change from one class to the others over the specified period. The conditional probability images illustrate the probability that each land cover type would be found after a specific time passes (Reveshty, 2011). The number of possible states is either definite or denumerable and for LULC, the states of the system are defined as the amount of land occupied by various LULC (Mubea, *et al.*, 2010).

A Markov model applies contiguity rule like a pixel near to an urban area is most likely to be changed into urban area. The Markov and CA models can also be used in combination to predict land cover change (Reveshty, 2011; Ahmed and Ahmed 2012). In applying the following models: Stochastic Markov, CA-Markov and Multi-Layer Perceptron Markov, Ahmed and Ahmed (2012), chose the latter as best-fitted model to make a single land cover map for future prediction which aggregates all the Markovian conditional probability images. This prediction is performed by a stochastic choice decision model. In order to regularise and detect irregularities in images such as noise a patch-wise Markov random field framework is applied as opposed to the pixel-wise model.

Conclusion

Urban growth is an unstoppable process in development which can only be managed through proper planning. The planning process can only start by identifying the growth points within urban areas. Satellite remotely sensed data has proven essential in this identification and mapping process of such growth.

Numerous works have shown that satellite remote sensing has the potential to provide accurate and timely geospatial information describing urban changes. Although LULC changes have in the past been monitored by traditional inventories and surveys, satellite remote sensing can be more effective as it can provide greater amounts of information along with advantages of cost and time savings for extensive areas.

Advances in satellite-based land surface mapping are contributing to the creation of considerably more detailed urban maps, offering planners better understanding of urban growth dynamics and sprawl. Recently, the implementations of these techniques to quantify, analyse, and model the urban growth dynamics has been successful as illustrated by this review. Therefore being useful to town and regional planners.

Acknowledgement

The authors wish to show gratitude to the Department of Geography, Environmental Management and Energy Studies of the University of Johannesburg for financial support to the IGU 2013 conference. We also acknowledge the input of the anonymous reviewers.

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Changes in the historical layout of cities in Turkey related to modernisation movements and the dissemination of foreign planning concepts

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Abstract: Economic, cultural, and social modernisation processes, in association with the urbanisation process, have resulted in modern buildings and establishments. These developments have caused a measure of transformation and change in the spatial developmental aspects of countries and in the development of their urban spaces. Particular concepts and techniques related to interventions into the urban space that were developed in some Western countries have been disseminated to other Western and non-Western countries, and have resulted in changes to their urban structure and layout. The effects of the modernisation process have been perceived in terms of the transformations that have occurred in the urban spaces of Turkey and revealed in the changes in its historical urban patterns. Newly-forged relations with foreign countries have brought with them new investments in infrastructure in the form of railway stations, harbours, post offices and entrepôts and new and reformed governmental institutions in Turkey. Western-inspired urban planning principles have been put into practice and images of Western cities and the results of contemporary technology are now reflected in the new developments and reconstructions. More modernised operations have led to the destruction of historical and archaeological sites in most of the cities of the country. This paper analyses the effects of the modernisation movements on urban concepts, planning techniques and the urban fabric in the context of developing urban patterns by dividing the process into five periods. These include the Tanzimat, 1839-1923; Republican, 1923-1950; multi-party, 1950-1980; neo-liberal, 1980-2000 periods, and subsequent to 2000, the globalisation period,. Of great relevance to the methodology of the work is the literature study that was conducted, as well an archival search for plans and photographs.

Introduction

Modernity is a distinct and unique aspect of social life which characterises modern societies. Modern societies began to emerge in Europe from about the 15th century and came to be associated with industrialism in the 19th century (Hall, 1992). In other words, the concept of modernity attained its current level in terms of its content at the conclusion of the Industrial and West-centric Enlightenment Movements (Aritan, 2001).

Turkey began its movement towards modernisation with the Tanzimat Charter in the 19th century. Sustained external pressure was an important incentive for the internal administrative and legal reforms during the Tanzimat Period (Zürcher, 1998). The Tanzimat Charter was steeped in Western ideas and looked to Europe as its model and inspiration. The basic changes in Turkey were observed after the Republican Period in the form of successive waves of influence emanating from reformers and radicals (Lewis, 1968). During this period, Atatürk, emphasised the necessity of modernisation and westernisation in the creation of a nation (Migdal, 1999). Many traditions were taken from the Western World, including laws and regulations related to city planning issues (Çelik, 1992).

During the 1950-1960 period, in which a pluralist, multi-party system was established, the flow of foreign aid to Turkey, the arrival of Western experts from various international organisations, and Turkey's aspiration to become "the little America", accelerated the political and military integration of Turkey into the Western Alliance and the country's financial dependence on the United States of America (USA) (Bozdoğan, 2002; Tekeli, 1999). Following the military coup of 1980, Turkey became closely linked to the USA, but after 2000, the country entered an era marked by economic progress, which is generally defined as globalisation. Urbanisation, together with its associated economic, cultural, and social modernisation processes, was responsible for the construction of new buildings and for the establishment of new institutions. These in turn caused a measure of transformation and change in the spatial developmental aspects of the country, and also led to the development of urban spaces (Nasr and Volait, 2003). Particular concepts and techniques that had been developed in some Western countries over the previous two centuries and that related to interventions into urban space, spread to other Western and non-Western countries. Several known examples include the Haussmannism of Paris; the City Beautiful Movement and the Garden City Movement of England; and the Delimitation of Neighbourhood Units of the USA.

There is evidence all over the world, and primarily in the countries of the Mediterranean Basin, of the transfer of ideas on the built environment, and more particularly on the historical development of colonial and postcolonial city planning concepts and techniques and architecture (Nasr and Volait, 2003). Recently, the United Nations, the World Bank and the European Union have also played an important role in disseminating planning ideas and practices from the developed to the developing world and its member states (Ward, 1992). In Turkey, many traditions, including laws and regulations related to city planning issues were taken from the Western World (Çelik, 1993). From the advent of the Republican Period, modernisation movements gained momentum with the result that in the 19th and especially the 20th centuries, certain planning processes were implemented as a matter of course in Ankara, İstanbul, İzmir and other big cities by foreign planners working in Turkey. Over the years, individual ideas and innovations have been received as substantial packages contributing to effective planning. German and French planning practices in particular were used and applied without adapting them to the traditional urban pattern. After 2000, the accession of the European Union (EU), economic liberalisation, the massive incidence of privatisation, the empowerment of local autonomous institutions, and economic effectiveness, resulted in projects related to image making, place marketing, and urban regeneration.

This paper analyses the effects of the modernisation movements and the dissemination of ideas and concepts on the developing urban pattern in an historical context, especially in the case of İstanbul. In so doing, it divides the process into five phases, namely the Tanzimat, Republican, multi-party, neo-liberal and lastly the globalisation periods. The methodology of the work leaned heavily on a literature study, as well as an archival search for plans and photographs.

Effects of the modernisation movements on the traditional urban pattern during the Tanzimat Period

The first attempts related to the Western-style city planning applications could be observed at the beginning of the Reform Period, which started in 1839 with the

Tanzimat Charter. Classical Ottoman/Islamic urban images were transformed into a more cosmopolitan generalisation through the superimposition of Western forms and the adoption of elements from Western models. One of the aims of the Tanzimat Charter was to bring order to cities. Birinci Ebniye Nizamnamesi (The First Building Regulation), which included new techniques such as parcellation and the widening of streets during the reconstruction phase, was issued in 1848. In 1856, expropriation regulations, an important means for implementing city plans, were issued (Yerasimos, 1996).

As the Turkish city was rebuilt and reorganised to cope with the greater flow of traffic that filled its streets, so the whole country was transformed by establishing a new network of railway lines and roads (Lerner, 1958). One of the important concepts embodied in the plans of that time was to regularise the streetscape and to determine the absolute boundary of the buildings with the street line (Tekeli, 1980; Çelik, 1993). Once the applications had been analysed, it became clear that the former historical tenets were being eliminated at the hands of the modernist movement; historical monuments were being cleaned and their surroundings cleared, and large squares were being constructed (Dumont and Georgeon, 1992; Yerasimos, 1996). The rules of Haussmann were rigorously applied during the process of widening the streets (e.g. Divanyolu Street). Not only houses, but also several shops and historical monuments (such as mosques, historical baths, and inns) were demolished (Çelik, 1993). After these applications, further interventions such as the development of Beyazıt Square, and the establishment of Unkapanı Street, Azapkapı-Karaköy Street, and the Beyazıt- Aksaray tram line were undertaken.

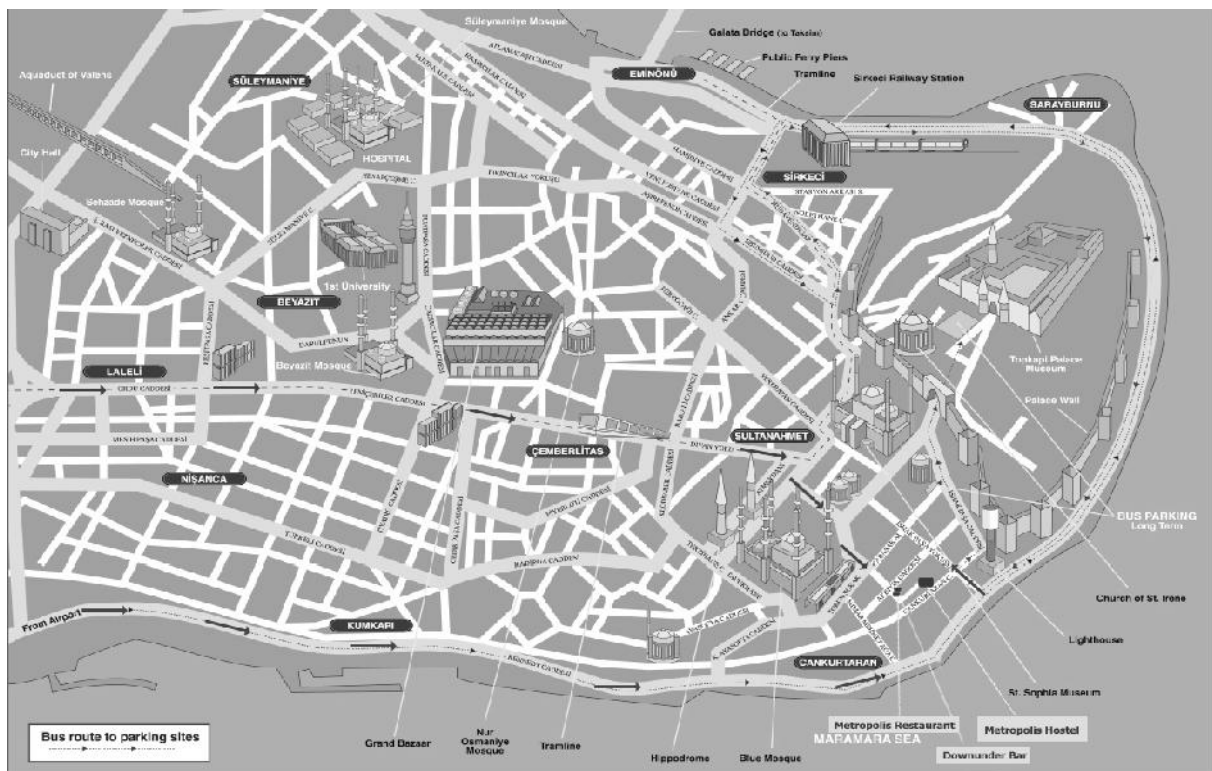


Figure 1: A map showing the layout of İstanbul, and amongst others Divanyolu Street and the historical monuments (Source: Ribeiro, 2012).

Since the urban areas were being extended into the less-developed more open spaces, containing amongst others cemeteries, many of these were demolished and transformed into parks or alternatively moved to the peripheral areas. The relevant designs were based on equivalent Western models (Akdoğan, 1962). The Armenian cemetery in Taksim was removed for the purpose of constructing Şehit Muhtar Avenue (Ziyaoğlu, 1971). The surroundings of the main monuments were cleared in order to provide unobstructed views of these monuments. This was an idea borrowed from the contemporary Western Urban Conservation concept, and in particular, from Haussmann, who claimed that monuments were glorified through isolation. Joseph Antoine Bouvard, who was the head architect of Paris, had prepared a plan to beautify İstanbul in 1902. He tried to bring geometric order by using the south-west-facing entrance of the Sultan Bayazıd Mosque to determine the orientation of a diagonal avenue.

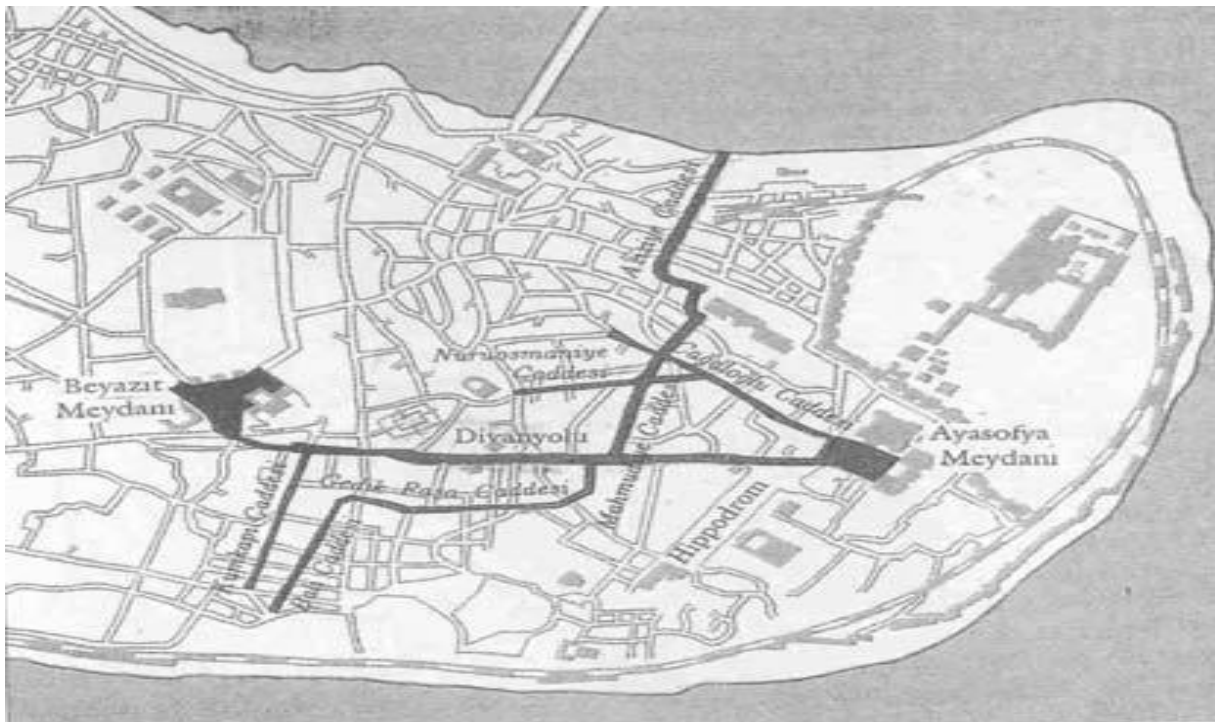


Figure 2: The regularised streets in İstanbul after the Hocapaşa Fire (Source: Çelik, 1993:57).

Auric, the head engineer of the Lyon Municipality who had been appointed to the İstanbul Şehremaneti (Municipality), proposed the construction of a number of tunnels and a suspension bridge between Süleymaniye Mosque and Galata. The local plans for the former fire-ravaged areas in Aksaray, Çırçır, İshakpaşa and Beyazıt had also been prepared during this period (Ergin, 1922).

The main themes that were employed in the urban planning of İstanbul from 1838 to 1911 were illustrated in Von Moltke and Bouvard's plans. The proposed image envisaged in these plans was reminiscent of European cities such as Paris, with their straight, wide streets leading to the historical monuments, regularised embankments and large public squares. The application of the Haussmanian approach to the city of İstanbul, caused the destruction of many of the historical works and also, on a different level, of the introverted life-style which had been fostered by the former layout of the city. The attempts at modernising the urban structure first materialised

in the municipal model presented in 1857 through the French Model. İstanbul was divided into fourteen districts and the only municipalities that had been established were the sixth (Pera), the ninth (Büyükdere), and the 14th (Princes' Island) districts. The city walls of Galata were demolished in 1865. It appears that the administrators, having been influenced by the demolition of the city walls in Vienna, preferred to do the same and also built a ring road in their place.

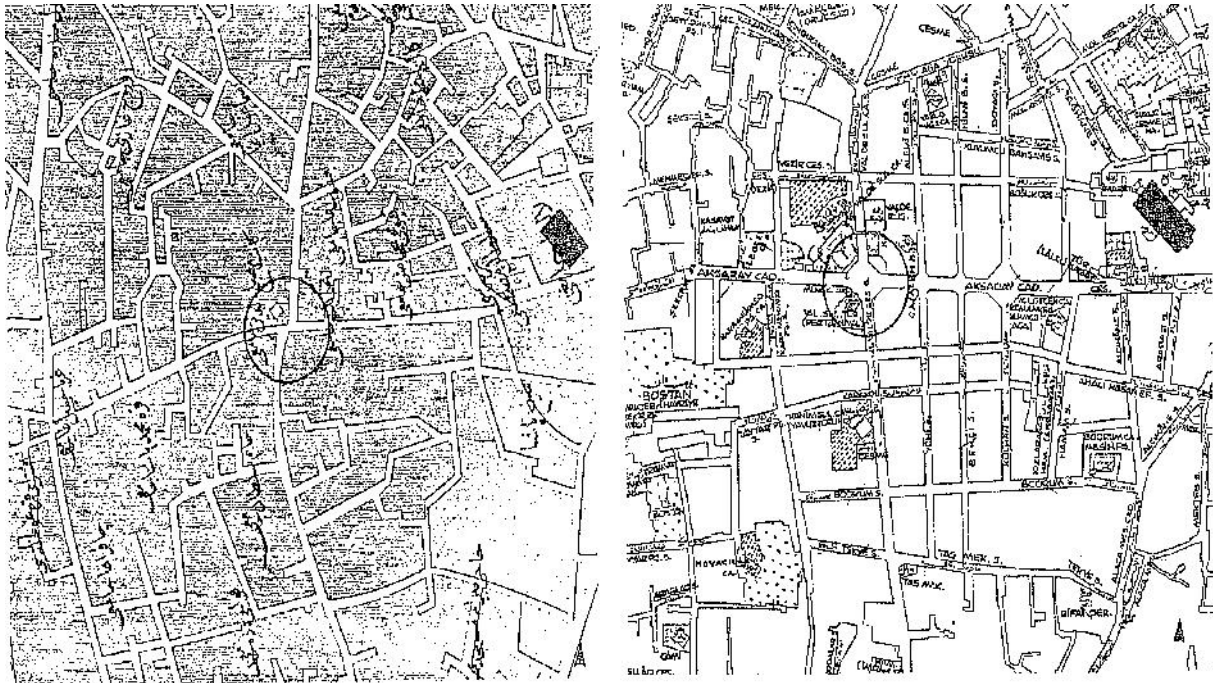


Figure 3: Aksaray Square in 1850 and 1870 (Source: Çelik, 1993: 54).

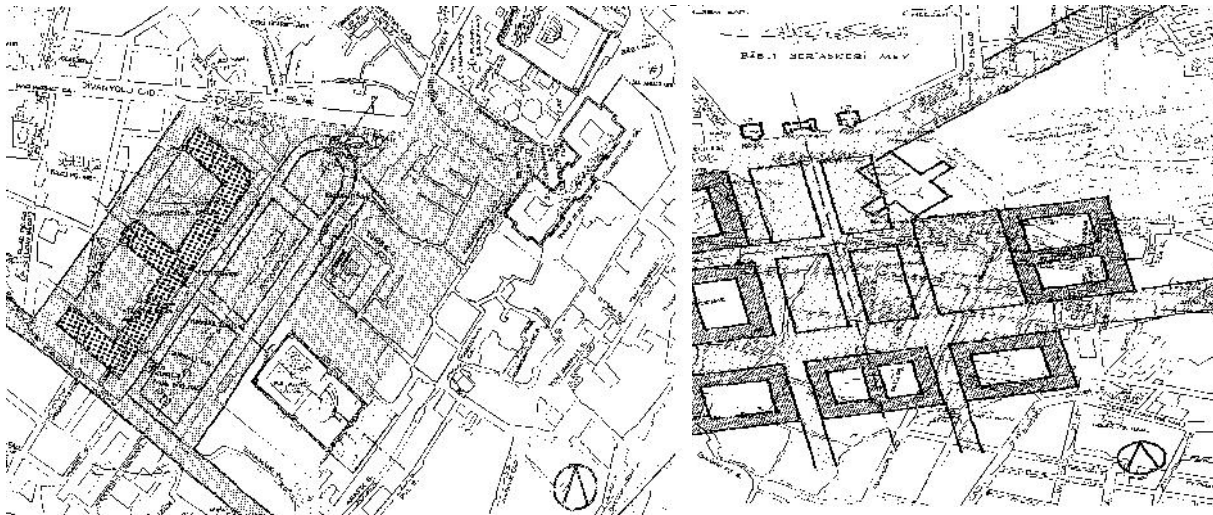


Figure 4: Proposal of Bouvard's for Hipodrom and Beyazıt Square. (Source: Çelik, 1993:113, 118).

Effects of the modernisation movement on the traditional urban pattern from the Republican Period to the Multi-Party Period: 1923-1950

The declaration of the Turkish Republic in 1923 terminated the role that İstanbul had fulfilled as capital city up until then. The new capital city was Ankara. Technical,

administrative, legal and educational reforms based on European models were now being pursued. The planning visions for Ankara, İstanbul, İzmir and some of the other big cities held by foreign planners such as Herman Elgötz of Germany, Alfred Agache, J. H. Lambert, and Henri Prost of France, could now be realised. Individual ideas or innovations could also be considered as substantial packages contributing to effective planning practices. Town squares were enlarged and new roads were built. Demolition was undertaken for the first time without first being prompted by fire damage (Öz,1987; Yalçın,1997).

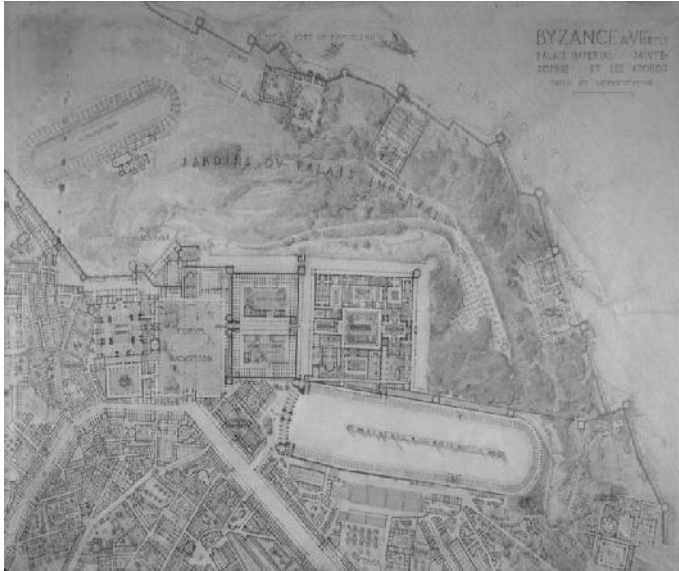


Figure 5a: Before the project (Source: Académie d'architecture/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle. 343 AA 68 and 343 AA 302).



Figure 5b: Completion of the project. The development of the square in front of the Hagia Sophia Mosque is in accordance with Beaux-Arts principles (Source: Académie d'architecture/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle. 343 AA 68 and 343 AA 302).

The construction of multi-storey apartment houses and high-rise buildings reminiscent of Western cities such as Paris and Vienna was realised, but depended on economic, institutional and social changes. More than 1 440 apartment houses were constructed in İstanbul in 1927. This number had increased to 3 090 apartments by 1935 (DİE, 1931, 1936). Once the apartments had been constructed, it was only natural that the plots would have to be combined so that the organic texture of the historical sites, the size of the plots and their shapes were changed.



Figure 6: Transportation Network proposed by the Prost Plan (Source: Bilisel, 2011:107).

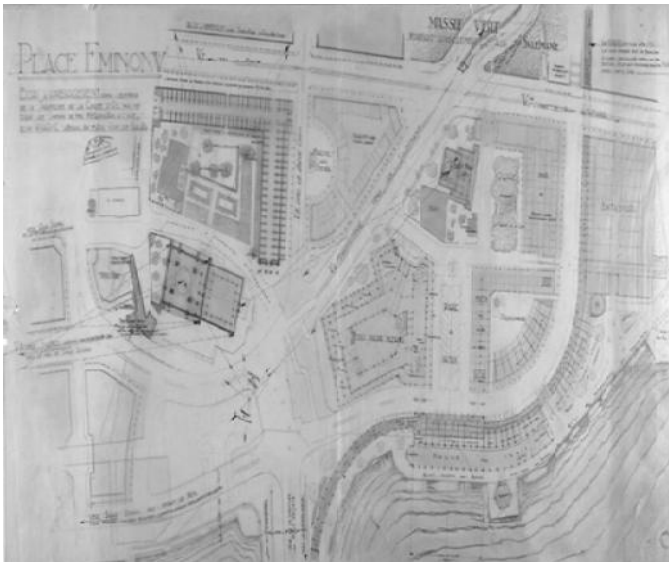


Figure 7: Eminönü Square Plan - December 1943 - January 1944 (Source: Académie d'architecture/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle. 343 AA 136).

New green areas were established and public squares were renewed in İstanbul. The Haydarpaşa shore-line and the landing pier were built, and the square in front of

the pier in Kadıköy was enlarged (Cumhuriyet Devrinde İstanbul, 1949). The shores of the Golden Horn were reorganised to provide an area for the development of national commerce and local industry. Eminönü Square, part of the historical city, was enlarged by demolishing a series of blocks, while the Spice Bazaar was restored by clearing the surroundings. Beyazıt and Unkapanı Squares were reorganised and the environs of Medrese cleared (İstanbul Belediye Mecmuası, 1929). Taksim Square and its environs were redesigned to assume a circular form, and a statue cast by the Italian sculptor, Canonica, was placed in the centre of the square. Military barracks in Taksim were demolished to allow for access to the İnönü Promenade area. The transformation of the traditional urban centres into modern ones, as well as the enlargement of the city centres and the construction of new types of buildings such as banks, insurance companies, hotels, and office buildings, are some examples of the transformations that took place in Turkey at this time. The final result was that the image of the city reflected the ideals of a typical European urban settlement.

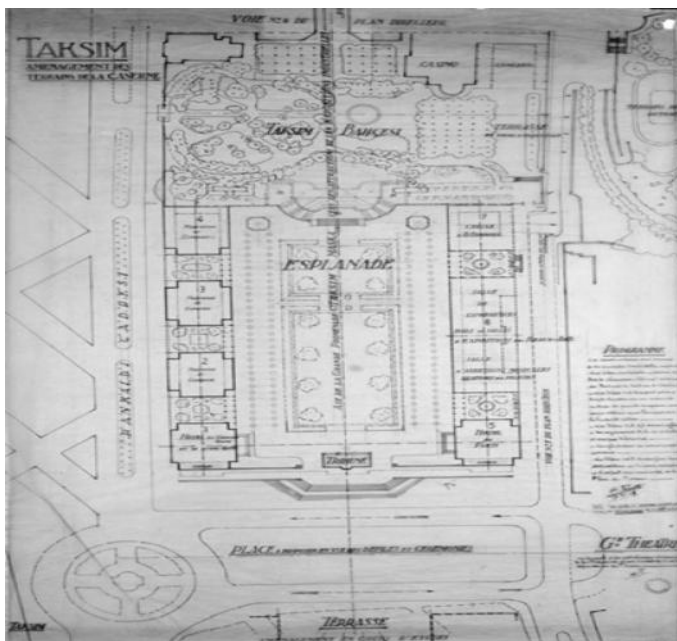


Figure 8: The redesigned version of Taksim Square and the Destruction of the Military Barracks (Source: Académie d'architecture/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle. 343 AA 123).

Impacts of the modernisation movements on the traditional urban pattern: 1950-1980

Liberalisation was underway during the regime of the Democratic Party, which won the elections of 1950, and on the appointment of Adnan Menderes as the prime minister of Turkey. In accordance with the Marshall Aid Programme, the state-interventionist policies of the 1930's were abandoned in favour of liberalisation (Keyder, 1987). Influenced by their political objectives, the Democratic Party Government of Menderes conducted radical reconstruction operations and İstanbul became a city clearly showing signs of immediate change. The reconstruction operations were designed to transform the old city into a modern city with modern blocks, wide boulevards and streets. In their turn, these innovations precipitated a boom in the automobile industry and contributed to the destruction of the old city. Blasting operations using dynamite destroyed centuries-old monuments in the

vicinity, whilst all the roads were levelled with total disregard for the city's topography. İstanbul was turned into a large construction site, not only through the roads that were being constructed and the office blocks that were being erected on a large scale, but also through the redevelopment of neighbourhoods and districts.



Figure 9: Destruction of the City Fabric in İstanbul (Source: Collection of German Archaeology Institute).

Visions with images of Western city architecture and layouts, as well as contemporary technology, in mind, affected the appearance of the new developments and the nature of the reconstruction operations. These urban interventions, conducted between 1956 and 1960, reflected the modernism, professed by Robert Moses and defined in detail by Berman (Berman, 1983), and addressed three main objectives:

The first objective was to ease the transportation problems in the city by establishing squares, intersections, and by widening the main arterial routes. The old urban fabric was completely destroyed, except for small-scale historical buildings. Such significant destruction was unusual in Turkey, but was accepted in the name of modernisation.

Beautification of the city by widening the roads and creating large recreational areas and by cleaning areas around the mosques and the squares, was the second objective. This idea was borrowed from contemporary Western urban conservation concepts, and in particular, from Haussmann. He claimed that monuments are glorified through isolation and disregarded the dominant character of the squares and their surroundings (Tekeli, 1994).

Finally, the restoration and conservation of the mosques and other religious buildings was the third objective associated with these reconstructive operations. These objectives were in conformity with the approach of the Prost Plan (Tekeli and Ortaylı, 1978). Restoration and conservation operations focused on preventing negative reaction to the demolition of historical works during the reconstruction operations. In his turn, Prime Minister Menderes used religious sentiments to obtain political support for these initiatives.



Figure 10: Before and after the Construction of Atatürk Boulevard in İstanbul (Source: Fonds Henri Prost. Académie d'architecture/Cité de l'architecture et du patrimoine/ Archives d'architecture du XXe siècle. 343 AA 65/1 and 343 AA 306).

Impacts of the modernisation movements on the traditional urban pattern: 1980 - 2000

From the early 1980s, Turkey entered an era marked by economic progress that may be defined as that of “globalisation”. Emanating from the neo-liberalisation process during this period, socio-economic, political, and cultural changes were clearly apparent. Policies were based on, amongst others, privatisation, the deregulation of state power, flexibility, and capital mobility. Changes in economic policy affected the spatial distribution of capital. The integration of the country into the world market and the necessity for introducing new institutions in keeping with the global economy led to important changes in the settlement structure of the country. Istanbul was gradually converted into a city of speculative capital of huge proportions for remaking the commercial and residential landscapes of the city.

The development of new sub-centres and residential areas, the movement of trade, the relocation of high-income groups, and cultural metamorphosis, also caused deterioration in some of the districts in İstanbul. Beyoğlu and other neighbourhoods were degraded into blighted zones. Telecommunication and road networks were modernised with the introduction of a Second Bosphorus Bridge and a ring road around İstanbul to ease the traffic congestion between Europe and Asia. The aforementioned was constructed between İstanbul and Ankara. The Golden Horn was cleaned up and new sewerage system projects were implemented. The innumerable workshops and warehouses located along the banks of the Golden Horn which had crowded the shoreline since Byzantine days were cleared and replaced with parks and green areas. Counter-proposals to preserve the urban fabric were overruled by the city's administration, its philosophy being that the nineteenth century was not historically important to İstanbul.

The construction of skyscrapers was also encouraged in the Levent and Maslak districts of the city (Tekeli, 1994). Many skyscrapers and office buildings were constructed without considering the appearance and silhouette of the city. Besides destroying the image of the city, these applications also resulted in the demolition of many historical buildings and monuments.

The Tourism Incentive Act of 1982 attracted international investment, which resulted in the implementation of nearly forty projects in the city between 1984 and 1993. These included the construction of hotels and business centres.



Figure 11: Tarlabası before and after the Regeneration Project (Source: Ünlü and Tonbul, *et al.*, 2004).

Impacts of the modernisation movements on the traditional urban pattern: post 2000

Currently, Istanbul is undergoing a massive influx of foreign investment as economic and political barriers dissolve. With the perception of land as an economic commodity and a relatively nascent real estate industry, new developments are booming on both sides of the Bosphorus (Turan, 2011). Two urban trends distinctive of this period are urban renewal/regeneration, and large-scale urban developments by 'elitist' architects such as Zaha Hadid, Ken Yeang, and Kisho Kurokawa.

The delimitation and development of independent gated suburban communities and shopping areas are currently being explored at unprecedented scales. As a result of this aspirational shift, the built landscape of Istanbul's central neighbourhoods is rapidly changing. New boulevards and cross-city tunnels such as the undersea Marmaray tunnel, new arterial highways, and a proposed third bridge across the Bosphorus bear testimony to this. The madness of shopping malls in Turkey is one of the most discussed of subjects. As of June 2012, there were 313 shopping malls in Turkey, with 107 of them in Istanbul alone.

"Urban renewal" projects, many of which are sanctioned and administered by TOKİ, Turkey's housing development administration, remain popular. Referring to the semi-legal housing units that have mushroomed within the majority of Istanbul's central city neighbourhoods during the last half century, Turkish Prime Minister, Erdoğan, recently made the statement: "We will destroy half of Istanbul's buildings".. Architecturally, historically-developed patterns of both formal and informal typologies are being lost and replaced by more westernised, bland, middle-class models. Infrastructural projects such as the undersea Marmaray tunnel, new arterial highways, and a proposed third bridge across the Bosphorus Strait, indicate that transportation linkages to the growing corners of the city limits are inadequate (Geyman, 2011).



Figure 12: Regeneration Project of Kartal, designed by Zaha Hadid, and Skyscrapers (Source: Dossick, C. S. et al. 2012).

Conclusion

The dependency of social, economic and cultural changes on modernisation processes and movements has affected the development of cities, in the context of this paper, in Turkey in particular. Apart from this, some functions and proposals presented in city plans and reconstruction applications have also contributed to changing the life-style, habits and housing environments of the inhabitants of Turkey. Visions bearing images of Western cities in mind and the implementation of contemporary technologies have seriously affected the realisation of modern developments and the implementation of modern reconstruction operations. The destructive effects of those development plans embodying modernistic designs have accelerated the demolition process by altering the texture of local housing sites, the environs of historical monuments and decimating the natural environmental values held by the people. In the process of establishing wide boulevards, many of the monuments have been degraded into mere sites marked by colossal focal points where crossroads intersect. The areas surrounding the main monuments have been levelled and cleared in order to provide unobstructed views of these monuments – an idea borrowed from contemporary Western urban preservation concepts and in particular, from Haussmann. This perspective has caused the destruction of many historical works and the introverted life-style that emanated from the former layout pattern or texture. Such large-scale destruction has been accepted under the label of modernisation. After the 1980s, large-scale municipal projects were supported by foreign investment which erased much of the nineteenth century urban fabric. Telecommunication and road networks were modernised and İstanbul was converted into a large construction site, not only through the construction of roads and large-scale office block projects, but also through the redevelopment of neighbourhoods and districts. These applications have destroyed the face of the city and also resulted in the demolition of many historical buildings and monuments. Without a doubt, the transformation of cities cannot be and should not be thwarted. However, the

decisions made by the politicians shaping such transformation, should be questioned.

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Smart cities and regions in Europe

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Abstract: According to European Strategy 2020 (next EU2020), “Smart Growth” involves developing an economy based on knowledge and innovation. This implies action in education, research and development R&D promotion, innovation and digital society. The term “Smart” has been popularised over the last few years in Europe with expressions such as Smart Cities, Smart Mobility and Smart Regions, concepts that have been applied within many contexts. This paper will focus on the European urban and regional dimension of the “Smart” concept, taking into account the main targets and objectives suggested by the EU2020 Strategy. In general, the capital cities and large urban conglomerations are those which stand out as centres of human resources in science and technology, register the lowest rates of school dropouts, and use advanced services over the Internet. However, it is possible to appreciate clear differences among cities in Europe.

Introduction

In light of the economic crisis that has been affecting several European nations since 2008, the European Commission advises supporting smart growth based on research and innovation. Its framework document is European 2020 Strategy (next EU2020), which insists on the need of supporting *smart growth*, an expression that has been popularised through concepts such as Smart Cities, Smart Mobility and Smart Regions, and which requires the development of an economy based on knowledge and innovation (European Commission, 2010a). Only in this manner will it be possible to obtain greater productivity and increase global market share. Moreover, it is understood that Smart Growth will help generate employment and, at the same time, improve job quality (Lois, *et al.*, 2012).

Cities have suffered most as a result of the recession because they concentrate the highest population densities, the main economic activities, and the centres of specialization and innovation (Perlo, 2011). For many, the process of transition toward Smart, Inclusive and Sustainable Growth requires great efforts, which is why the European's Commission Directorate-General for Regional and Urban Policy is considering strengthening the urban dimension of regional policy (European Commission, 2009, 2010, 2011a).

Smart growth and smart cities

Many definitions have been given for the term Smart City. Some maintain that it is a developed urban area that creates sustainable economic development and high quality of life by excelling a multiple key areas (economy, mobility, environment, people, living and government). Excelling in these areas can be done through strong human capital, Social capital and/or ICT infrastructures (Cambridge Business Dictionary, 2013). Others suggest that the Smart City is an ecosystem whose elements must be managed efficiently in order to improve productivity, make new business models and new habits to the citizen who will play a key role (Morcillo, 2013). In this article, however, it is the wish to centre the debate on those factors that

configure it. They are all intimately related — which is why their analysis must be based on a systematic approach — and have been grouped into six large blocks or axes referring to competitiveness (Smart Economy), social and human capital (Smart People), citizen participation (Smart Governance), transportation and new technologies (Smart Mobility), natural resources (Smart Environment), and quality of life (Smart Living) (Figure 1).

The term Smart City refers to competitive cities distinguished by the presence of “smart industry”; in other words, factories and business parks in the Information and Communications Technology (next ICT) sector, as well as factories using ICT in their productive processes and benefitting from R&D. Cities with Smart People are defined as those with low school dropout rates, a high percentage of the population with university level studies, and optimal infrastructures in education and R&D. Urban spaces with Smart Governance are those efficiently offering all necessary basic and social services. Cities with Smart Mobility are those which support ICT as strategic tools for communication as well as for smart and sustainable transportation. Finally, Smart Living cities are those which combine all the factors providing quality of life for their citizens. Aspects related to health and access to decent housing are part of the basic needs of all people.

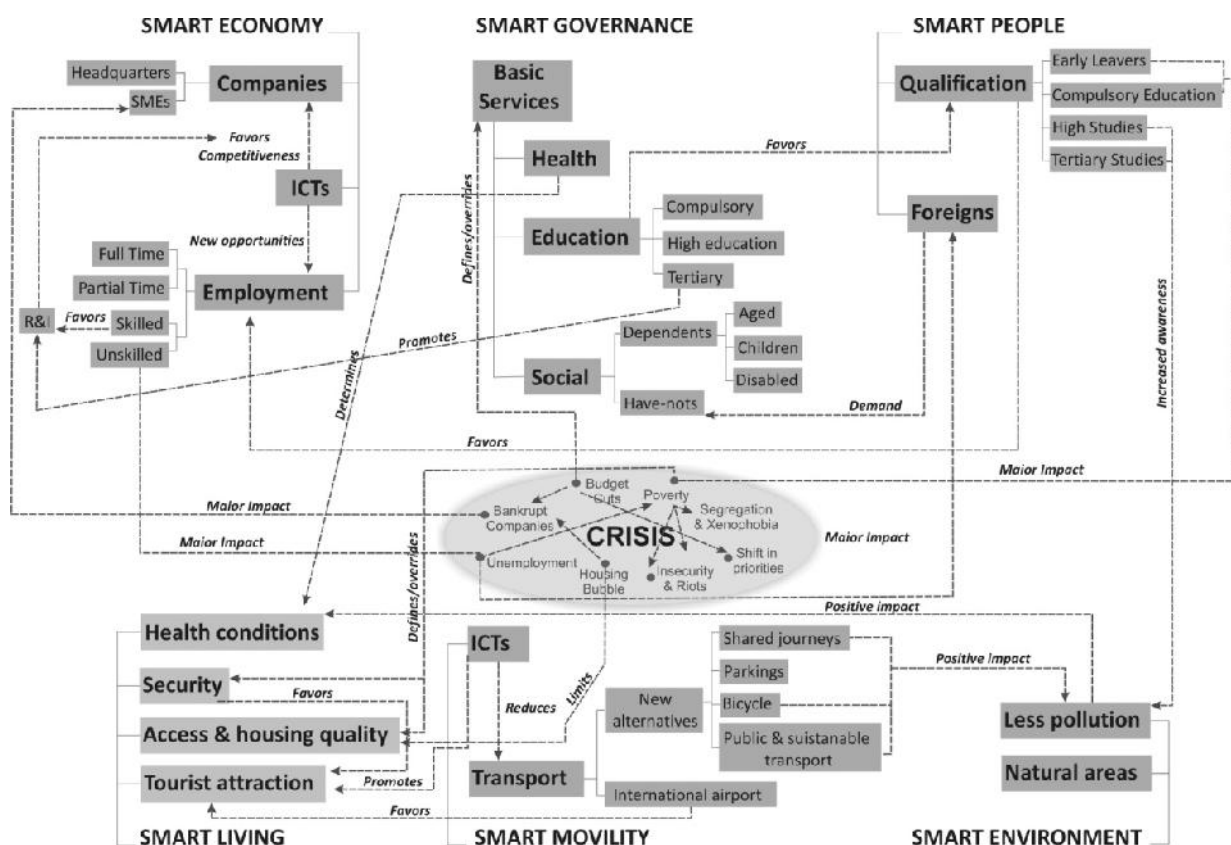


Figure 1: Relational model of factors which define a Smart City (Source: Compiled by the Authors).

Smart cities in Spain and Germany

Although, as it has been seen, the European Union is taking active steps in order to support sustainable and inclusive economic growth within all its member states, the fact is that a great disparity exists in levels of development and competitiveness among them. In terms of growth, the nations of Central Europe (with Germany at the forefront) are clearly differentiated from those of the southern periphery, among which is Spain — countries whose pre-crisis growth was based on credit and speculation, without an industrial or export base (Committee of Regions of European Union, 2013). Confronted with this dualism and wishing to approach the study of European Smart Cities, it has been decided to select one country from each group (Germany and Spain) to investigate their levels of being Smart Cities. Taking into account that they have had different growth strategies, the efforts that each will have to make for the purpose of achieving Smart Cities will be quite different.

A study by Ballester Lafuente (2012) shows the reality of these two nations in terms of competitiveness. It explains that although both countries are currently at the highest possible level of development, certain differences exist between them, making Germany the model to follow. On an institutional level, both have worsened slightly in most aspects (protection of the rights of property and intellectual property, the toughness of auditing and information standards), while at the same time the public's trust in politicians has eroded due to numerous scandals. When it comes to infrastructures, Germany has some of the world's best, while Spain has improved in the last few years its roads, railways and airports, as well as its electric power supply, an area in which Germany has only maintained the same level. With regard to macroeconomics, Germany ended the first semester of 2013 with a budget surplus of 8.5 billion Euros (0.6% of GDP), while Spain had a public deficit of almost 12.6 billion Euros (1.19% of GDP). Both countries are well positioned in the fields of education and healthcare, but show great differences in employment levels. In 2012, Germany had an unemployment rate of 5.5%, while Spain's unemployment rate was 25% (Eurostat, 2012).

Within the urban sphere substantial differences are also found among both countries. Germany is characterized by a polycentric urban organization in which cities hold great economic power, not only because industries are located there, but also because their organizational infrastructures provide them with generous budgets. Spain, on the other hand, does not have a balanced polycentric model; thus, it is observed a number of urban agglomerations with a concentration of economic power and, therefore, great capacity of autonomy and decision making; while the great majority of small and medium sized cities are limited to a regional or local economy (Serrano Martínez, 2000). Taking this situation into account, it is easy to understand why German cities have greater possibilities of scoring well in all Smart levels, since by maintaining their economic strength they are guaranteeing the income level and standard of living of their citizens, while at the same time favouring the creation of research and development centres and the improvement of services (healthcare, education, social, etc.)

Methods of analysis

To study the Smart level or degree of Spanish and Germany cities, it was developed a Principal Components Analysis (PCA) performed on the basis of a weighted assignment of all the variables making up a Smart City (Smart Economy, Smart

Governance, Smart People, Smart Living, Smart mobility and Smart Environment). It was integrated a total of sixty-six variables into the following factors (components):

Smart Economy: The first component deals with *economic activity*. Within a context of economic crisis, companies have difficulties in paying their taxes and loans. Occasionally, this results in companies going out of business or actions to regulate employment reducing work schedules or personnel. The achievement of the status of Smart City requires smart growth, which means supporting job creation and favouring the setting up and consolidation of competitive businesses. This requires assisting in the creation of businesses in the areas of ICT and digital society, as well as supporting entrepreneurial R&D and the search for new business opportunities.

The second component is the *flexibility-transience of the labour market*. A city with a Smart Economy invests in the creation of quality employment. Labour instability limits the capacity of consumers and the access of entrepreneurs to subsidies and credit, negatively affecting quality of life and hindering the start up or expansion of businesses. The groups most affected are the youth, women, workers over 45, and the handicapped.

Finally, the *unemployment* component allows to observe its incidence among the youth, which results from their limited professional experience. In an ever more competitive labour market, young people with a good educational level or with professional training will have greater possibilities of finding well-paid employment. Cities with a Smart Economy, therefore, support the training, education and academic qualification of their citizens, actively taking steps to reduce school dropout rates and supporting R&D as a tool to guarantee competitiveness.

In the *Smart Governance* block, the first component was denominated *ageing*. This factor is found in relation to the advent of unipersonal homes inhabited by the elderly and is linked to another component, *dependency*, because with the passage of time these people become more dependent. Furthermore, regarding dependency, it is observed an increase in single-parent homes which require social services for childcare. In relation to third component called *emigration and poverty*, indicates that a non-European population (regardless of whether originating from countries with high or low Human Development Index) is the sector most affected by unemployment and poverty, especially within the context of the current economic crisis. Good governance should pay greater attention to those who require new and more services, and also support employment in the public administrations (education and healthcare) to guarantee proper functioning (Lee, *et al.*, 2009).

The *Smart People* block is directly related to the component of the population's *education and training*. A well-educated population will have greater possibilities of finding good employment. This is the reason why a Smart City takes steps to reduce school dropout rates and supports quality education.

Among the components which were defined for *Smart Mobility*, the first was the environment. It is fundamental to develop and promote public transportation because of its impact in reducing environmental pollution (especially in major urban areas with large numbers of commuters and excessive use of automobiles), thus also achieving a Smart Environment. Many European cities have begun restricting automobile access to the town centres (by way of tolls or fees, costly parking, etc.; some companies with private car parks rotate their use among employees because there isn't sufficient space for all). Finally, the component of *sustainable transportation*

emphasises the importance of using alternative fuels for public transportation and also the use of bicycles as ways of reducing environmental impact.

In the *Smart Living* block, one of the main components is inequality. The variables which stand out are the percentages of social housing, burglaries and green zones. The explanation is that the State must guarantee access to housing; in fact, this is stated in the constitutions of both Spain and Germany (González Ordovás, 2011). But social housing projects are occupied by low income families, and these suffer the effects of social problems. It is also true, however, that the layouts of these projects favour the creation of green zones, which is undoubtedly a positive element because these areas become playgrounds and leisure spaces for children and adults, and also help reduce rates of environmental pollution. On the other hand, cities with high population densities which have undergone accelerated urban growth lack green zones, something which undoubtedly reduces the quality of life of its citizens. In regard to *cultural offer*, we concentrate on the importance of theatres and libraries. The higher the educational level of the population, the greater the interest shown for cultural activities. Finally, we must refer to the component related to a city's *tourist appeal*, which can be linked to the offer of museums (since cultural tourism goes hand in hand with urban tourism), and *security*, since cities with high levels of crime and insecurity experience a reduction in tourism. Finally, within the Smart Living block, and keeping in line with components referring to Smart Governance, the component related to *healthcare services* is of major relevance, due to its effect in the reduction of mortality rates and also because it guarantees the population's social welfare.

In the *Smart Environment* block, the existence of large green zones is of greatest relevance because they help reduce the number of days in which the concentration of ozone exceeds 120 µg/m³ inside city areas.

Once the factors/components were found and their correlations analysed, a weighted average was set up among them, obtaining a score for every city within each Smart block. As an example, the following is the formula used for the Smart Governance block:

$$\text{Smart Governance}_k = \sum_{i=1}^3 p_i \cdot F_{ik} \quad (\text{Eq. 1})$$

Where p_i is the weight given to factor i , and F_{ik} is the factorial score obtained for each city k in factor i as a result of the analysis of principal components. Subsequently, for the purpose of elaborating a summarized score indicating each city's final Smart City value, the following expression was defined for each city k :

$$\text{Smart City}_k = \sum_{i=1}^6 w_i A_{ik} \quad (\text{Eq. 2})$$

Where w_i is the weight given by the experts to each of the six attributes Smart i (Economy, Governance, People, Living, Mobility, Environment) (Table 1), and A_i is the score obtained for each city in each attribute i following the methodology described above. The process was concluded by ordering all the cities for each one of the Smart blocks and for the final Smart City score.

Smart city ranking

In Table 2 it can be observed a greater representation of smart cities in Germany than in Spain, a fact that certainly to obey that while Germany is characterized by a polycentric urban model, it has not been developed in Spain. Furthermore, the

concentration of richer regions lays in the Alpine Arc and the Rhine Valley, including several regions of Germany. German cities have a large advantage, occupying nine of the first ten positions of the Smart Cities ranking; and in addition those cities with populations below 200,000 have obtained the best scores. Only Berlin (with a population of over three million), and Dresden and Seville (with populations of over 500,000), appear among the top ranking cities.

Table 1: w_i value attributed based on priorities established by EU2020.

Smart Block	w_i
Economy	30/100
Governance	10/100
Environment	20/100
Mobility	15/100
People	20/100
Living	5/100

(Source: Compiled by the Authors).

The top ranking city is Frankfurt (Oder). Located on the River Oder, across the border from Poland, it is home to Viadrina European University. In second place is Göttingen, a city with a long university tradition, where more than 40 Nobel Prize winners have lived and taught. Darmstadt, Potsdam and Augsburg occupy the remainder of the top five positions. Darmstadt has undergone much growth in recent years and is an important industrial, scientific and educational centre. The city is also well-known for its architecture, art and literature. Potsdam is a city which clearly invests in sustainable growth. Three quarters of its area is taken up by green zones and lakes. Augsburg forms part of the Community of Ariane Cities, an institution promoting economic cooperation among cities, as well as encouraging research and interchange of knowledge in the field of aerospace technology. Dresden has 63% of its area classified as green zones, one of the highest in Europe. Berlin is an important centre in the fields of culture, art, technology and industry. The Berlin-Brandenburg region is one of the most innovative in the European Union. Companies such as Siemens and Air Berlin have their headquarters there.

Seville is Spain's highest ranked city. As part of its support of sustainable mobility, Seville has built a seventy-seven kilometre network of bicycle lanes for the purpose of integrating bicycles into its system of urban mobility as a safe and competitive means of transport. This project has been awarded several international prizes. Seville is also collaborating with a number of companies to develop innovative projects in the fields of waste management, water recycling and electrical power supply for industries.

If it is analysed each of the six blocks making up a Smart City, it is observed that in the Smart Governance block the highest ranking cities are Stuttgart, Potsdam and Hamburg. In Smart Economy, the Spanish cities of Madrid, Murcia and Málaga are in intermediate positions, while the German cities of Leipzig, Berlin and Dresden are the most competitive. In the Smart People block, Spain has obtained the top ranks, with Santiago de Compostela in first place, followed by Santa Cruz de Tenerife and Badajoz. Among the German cities, only Göttingen and Mainz are among the top

ranking cities. In the Smart Mobility block, the top ten cities are all German, with Hamburg, Bremen and Darmstadt being the ones that have invested most in sustainable transportation. Hamburg has 11,657 kilometres of bus lines with 10,426 stops that were utilized by 656 million passengers in 2009, and 99% of residents have access to public transportation at less than 300 metres from their homes (European Commission, 2011b).

In the Smart Living block, Santiago de Compostela is the only Spanish city among the top positions, while Weimar, Bonn and Schwerin are the ones that offer the best quality of life for its citizens. In the Smart Environment block, we find more equilibrium between Spanish and German cities, with Augsburg, Seville, Zaragoza and Frankfurt occupying the top ranks.

Table 2: Ranking of Smart Cities in Spain and Germany.

City	Country	Population	Smart City
Frankfurt (Oder)	Germany	61.286	1
Göttingen	Germany	121.455	2
Darmstadt	Germany	142.310	3
Potsdam	Germany	152.966	4
Augsburg	Germany	263.313	5
Seville	Spain	699.759	6
Dresden	Germany	512.234	7
Berlin	Germany	3.431.675	8
Erfurt	Germany	203.333	9
Leipzig	Germany	515.469	10
Hamburg	Germany	1.772.100	11
Frankfurt am Main	Germany	664.838	12
Freiburg im Breisgau	Germany	219.665	13
Málaga	Spain	566.447	14
Kiel	Germany	237.579	15
Las Palmas	Spain	381.123	16
Sta. Cruz de Tenerife	Spain	221.956	17
Saarbrücken	Germany	176.749	18
Hannover	Germany	519.619	19
Rostock	Germany	201.096	20
Mainz	Germany	197.623	21
Magdeburg	Germany	230.047	22
Murcia	Spain	430.571	23
Zaragoza	Spain	666.129	24
Madrid	Spain	3.213.271	25
Schwerin	Germany	95.551	26
Köln	Germany	995.420	27
München	Germany	1.326.807	28
Badajoz	Spain	146.832	29

Weimar	Germany	64.938	30
Karlsruhe	Germany	290.736	31
Alicante/Alacant	Spain	331.750	32
Regensburg	Germany	133.525	33
Düsseldorf	Germany	584.217	34
Toledo	Spain	80.810	35
Barcelona	Spain	1.615.908	36
Halle an der Saale	Germany	233.013	37
Palma de Mallorca	Spain	396.570	38
Santiago de Compostela	Spain	94.339	39
Nürnberg	Germany	503.638	40
Dortmund	Germany	584.412	41
Hospitalet de Llobregat(L')	Spain	253.782	42
Koblenz	Germany	106.293	43
Bonn	Germany	317.949	44
Córdoba	Spain	325.453	45
Stuttgart	Germany	600.068	46
Bielefeld	Germany	323.615	47
Wiesbaden	Germany	276.742	48
Valencia	Spain	807.200	49
Bremen	Germany	547.360	50
Oviedo	Spain	220.644	51
Essen	Germany	579.759	52
Logroño	Spain	150.071	53
Trier	Germany	104.640	54
Coruña, A	Spain	245.164	55
Mönchengladbach	Germany	258.848	56
Bilbao	Spain	353.340	57
Bochum	Germany	378.596	58
Vigo	Spain	295.703	59
Pamplona/Iruña	Spain	197.275	60
Valladolid	Spain	318.461	61
Vitoria/Gasteiz	Spain	232.477	62
Santander	Spain	182.302	63
Gijón	Spain	275.699	64
Mülheim a.d.Ruhr	Germany	168.288	65
Moers	Germany	106.645	66

(Source: Compiled by the Authors).

Conclusion

In general, City Rankings are considered a valuable instrument for evaluating the attractiveness of urban areas. Cities are evaluated based on economic, social and geographic criteria to analyse which are better or worse in specific aspects. This working paper is simply an early approach to the study of Europe's Smart Cities, and it may serve to help to understand what is occurring with the cities — to understand their strengths and our weaknesses. However, the most important thing is not to know which city scores higher or lower, but to be able to consider which aspects should be taken into account in future strategies of development, and to analyse more deeply those cities which are more competitive with the purpose of learning from them.

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Macrocephalic growth of capital cities in West Africa's urban system

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Abstract: A team of geographers and other social scientists have been working continuously since 2010 under the coordination of the University of Santiago in several West African countries. These are mostly French-speaking countries (Senegal, Mali, Burkina Faso and Niger), and one is Portuguese-speaking (Cape Verde). The capital cities of all these countries have grown dramatically when compared to the rest of their urban systems, systems which are dependent on territorial, regional, provincial or island divisions within each nation. The capital cities concentrate foreign direct investment (FDI), attract migration from the rural countryside (often accelerated by political and military tensions or crises of subsistence), exemplify the potential of the weaker but emerging and growing economies, and become the gateway for companies, workers and foreign official delegations. In a context of intense urban growth, capital cities bring together all the strengths and problems afflicting West African society. The dynamism of these cities is more significant than that of the provincial and regional capitals (where the number of large buildings is limited; problems of insecurity are modest; there are no major speculation processes; and the local people are still surprised by the arrival of outsiders). We will focus our annual contribution to the conference of the IGU Urban Commission, held in Johannesburg, on this duality of the city in one of Africa's poorest emerging areas.

Introduction

Since 2010, we have had the opportunity to cooperate with projects in West Africa (Lois, 2011). In these projects we have looked at the landscape, the internal structure, and the pace of urban life in several capitals in this region (particularly Bamako, Dakar and Praia; less deeply in Ouagadougou and Niamey). Despite transportation problems and the poor state of the communications network, we have been able to visit other less important cities which are not undergoing growth processes, such as Koulikoro and Ziguinchor, or cities turned into small tourist resorts, such as Espargos in Ilha do Sal. Starting out with this first-hand knowledge and the significant growth and activity emerging from the urban world throughout the whole region, we would like to analyse a group of less studied West African cities in a conference to be held precisely here in Johannesburg.

In the following pages, we will focus on four different issues and a final conclusion. First, the existing continuity between the city networks created by colonisation, and the consolidation after independence of these five West African countries (Cape Verde, Senegal, Mali, Burkina Faso and Niger) (Figure 1). Second, the strong urban boom experienced by these territories, a growth that still responds to the better living conditions offered by cities and, most notably, those serving as national capitals (Santos, 1989; Dubresson and Raison, 1998). Third, we will try to characterise the urban macrocephaly in the whole of this regional space by using traditional measurement systems (Zipf, 1949; Capel, 1974; Bailly, 1978; Carter, 1981). Finally, and before concluding, we would like to delve deeper into dynamism—the representative urban lifestyle of these sprawling cities—as a testimony of an emerging reality which, in the near future, will have to rise to the challenge of

organising city space and reducing the serious problems that accompany rapid transformation (Pacione, 2001).

The territorial and urban system: from colonisation to independence

Despite attempts by the imperialist European powers to divide Africa towards the end of the nineteenth century, and the improvement of the colonial administration systems during the first half of the twentieth century, the penetration of European nations into many parts of West Africa had been minor until the 1960s. The colonising nations used major port cities as anchor points for territorial domination (in this sense, the role of Dakar, Abidjan and Saint-Louis was crucial for the French for the French), but effective presence inland was much more difficult (Ki-Zerbo, 1980; Coquery-Vidrovitch and Moniot, 1985). This fact justifies the following three issues: 1) the effective control of the territory was unquestionable in a number of coastal regions, such as the archipelago of Cape Verde, or the Senegalese coast (where the inhabitants of Dakar, Gorée, Rufisque and Saint-Louis obtained the right to French citizenship), but was greatly reduced in the rest of the territory (all of Mali, Niger and the so-called Upper Volta in those days); 2) the cities could be large in port areas and medium in the interior areas (of the five countries studied, only Dakar had more than 200,000 inhabitants in 1950, while other cities had fewer than 100,000 residents); 3) there was a well-structured urban network in regions close to the sea, while in the interior only isolated nuclei managed to maintain commercial functions and fairs, together with certain administrative or military garrison activities (Figure 1).

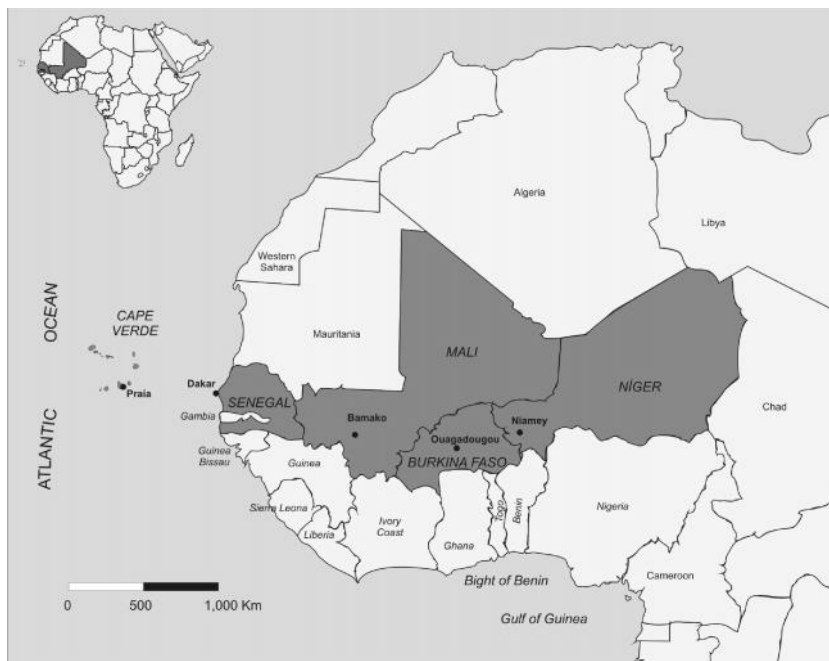


Figure 1: West African countries and capital cities (Source: The Authors).

The process of independence was conceived as a series of events carried out by the urban middle classes and intellectuals, and heavily concentrated in major cities. In French West Africa, this was the case in places such as Dakar, Conakry and Abidjan, and much later in Bamako, Ouagadougou and Niamey. In the case of the later Portuguese decolonisation, there were virtually no urban emancipation movements in Cape Verde (French colonies became independent between 1958 and 1960, while Portuguese colonies had to wait until the Revolution of 1974). The

anti-colonial guerrilla movement dominated much of the rural areas in Guinea Bissau; while in Praia and Mindelo (the two main towns in Cape Verde) the colonial officials simply left, thus the few members of the Party of Independence for Guinea and Cape Verde (PAIGC) had to take responsibility for governing (Madeira, 1995; Almeida, 2003). There was, therefore, only one genuine decolonisation debate in Senegal (which would come later to Mali and would be more radical), but it was overtaken by the circumstances of Guinea Bissau and Cape Verde. The weakness of the urban areas was also responsible for the low penetration of the anti-colonial slogans.

A logical territorial organisation has followed independence, basically using the structures generated by the colonial powers. This situation justifies the maintenance of a highly polarised urban system, doubtlessly owing to power structures that reinforce the role of the capital cities (Pourtier, 2009). In fact, the model of the centralised states of France and Portugal are reproduced in the new West African states which are the object of our study. Power is concentrated in the capitals of Senegal, Cape Verde, Niger and Burkina Faso. Capitals that, despite their demographic significance, currently house numerous administrative buildings, bank headquarters, stadiums, palaces, conference centres and important hotel infrastructures, together with a continuously upgraded road network. This demonstrates the enormous symbolic role reserved for the capital as an expression of an increasingly rich and powerful country. In fact, in Senegal a significant part of the population resides in Dakar and its surrounding region (Diop, 2002). In Cape Verde, Praia has continued to grow, surpassing the economic and demographic weight of its rival city, Mindelo. In Niger and Burkina Faso, Niamey and Ouagadougou (urban cores with a determined expansion strategy) are the only gateways from abroad. The exception to this rule is Mali, where ethnic and territorial contrasts between north and south have been resolved by a highly decentralised organisation of the territory; although, as we shall see, Bamako continues to be the nation's dynamo. In fact, it aims at becoming a regional metropolis for West Africa's interior (if the recent internal conflict permits it) (Sanankoua, 2007; Pameiro, Lois, Faty and Cisse, 2011).

The enormous growth of the capital cities: the appeal of the urban world

In this section we will provide a set of numerical values regarding the growing number of inhabitants in the major cities of Cape Verde, Senegal, Mali, Niger and Burkina Faso, and what this has meant in recent decades. However, together with the unquestionable validity of objective records, we shall study the enormous appeal the urban world holds for very poor societies, which are still hegemonic in West Africa. The classical theories of the urbanisation process remain valid in these countries, where we cannot question the fact that people live better in cities than in rural areas. Big cities are linked to a greater chance of finding work or just the chance of making a living (selling in a market, day work at construction sites or in transport terminals, washing cars, etc.) (Pacione, 2001). The city provides competitiveness, social mobility and entrepreneurship, something impossible for rural groups still subjected to strict rules. All cities are presented as extremely attractive, especially for young dynamic individuals who benefit from anonymity and urban freedom and less family or group control, thus allowing them to develop their own life models. Moreover, it is possible to obtain a salary or regular income in the cities, something very difficult in rural areas (Hammerz, 1980, Santos, 1989, Fournet-

Guerin, 2011). Although foreign visitors to West Africa can find themselves overwhelmed by the number of people moving, talking or selling on the streets, this hustle, to some extent, is indicative of the real chances of progress for individuals coming from very poor societies. It is an idealisation of the urban lifestyle and serves to maintain a strong rural exodus.

Table 1: Evolution of the main urban areas of West African countries

	Bamako		Dakar		Niamey		Praia		Ouagadougou	
	Pop.	%	Pop.	%	Pop	%	Pop.	%	Pop.	%
1950	89	1.92	201	8.32	24	0.97	17	11.33	33	0.77
1960	130	2.47	349	11.45	58	1.78	25	12.50	59	1.21
1970	222	3.68	610	14.89	129	2.94	40	14.76	115	1.98
1980	489	6.74	957	17.68	274	4.67	58	19.60	265	3.67
1990	746	8.60	1.405	19.40	432	5.55	71	20.82	537	5.76
2000	1.142	10.11	2.029	21.34	680	6.23	106	24.42	921	7.49
2010	1.932	12,57	2.926	23.53	1.22	7.88	132	26.83	1.91	11.60

(Source: United Nations, except for Praia [INECV]).

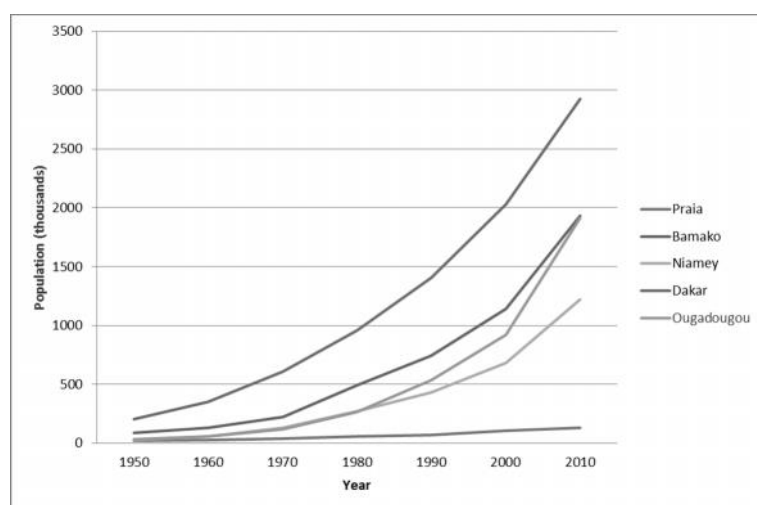


Figure 2: Evolution of the main urban areas of West African countries (Source: United Nations, except Praia INECV).

Decennial data going back to 1950 have been consulted to quantify the growth of capital cities in West Africa in recent times (Table 1 and Figure 2). The increase in the number of inhabitants in the main towns during the last sixty years is shown. The values used are those regularly published by the UN, an institution that has done a commendable job of unifying statistical standards worldwide (UN, 2011). This source could not be consulted for Praia due to its small size, so the data for the main urban center of Cape Verde has come from the country's National Institute of Statistics (INECV, 2011). As shown, in the five cases studied the population has multiplied during this long period (by eight in Praia, by fifteen in Dakar, and by twenty or more in Bamako, Niamey and Ouagadougou). In fact, small, main interior nuclei of West

Africa have been transformed into capital and millionaire cities in a growth process that is still far from slowing down. Their historic centers are now just a small cluster of overcrowded old houses with the traditional markets and some businesses which have seen better times. In Dakar, as we shall see, the existence of a central city was consolidated between 1950 and 1960, justifying the relatively minor population growth of the time, although the existence of a genuine process of metropolisation, extending to the regional level, is observed in this capital. The urban space of Dakar and its suburbs may now be approaching some five million people.

The strong population momentum recorded in the five capitals is translated into a significant increase in their share of the total number of people accounted for in their respective countries. Bamako, Niamey and Ouagadougou had less than 2% of the population in the colonial territories administrated in 1950; the share had risen to 3-7% in 1980, and it is approximately 10% at the current time. Meanwhile, Dakar and Praia have always played an important role in their nations' population, as they are linked to the sea. These cities currently account for about one quarter of the total population of Senegal and Cape Verde, and their relative importance continues to be affirmed.

Table 2: Annual growth year-on-year of the main urban areas of West African countries

	Praia	Bamako	Niamey	Dakar	Ouagadougou
1950-59	4.71	4.61	14.17	7.36	7.88
1960-69	6.00	7.08	12.24	7.48	9.49
1970-79	4.50	12.03	11.24	5.69	13.04
1980-89	2.24	5.26	5.77	4.68	10.26
1990-99	4.93	5.31	5.74	4.44	7.15
2000-09	2.45	6.92	7.97	4.42	10.74

(Source: United Nations).

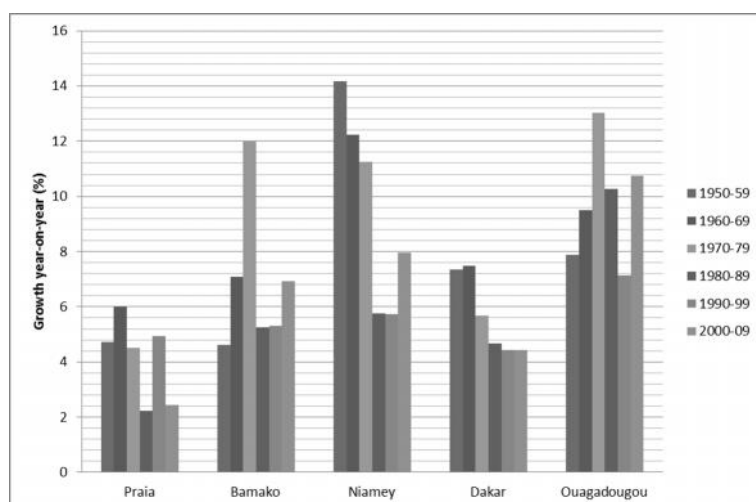


Figure 3: Annual growth year-on-year of the main urban areas of West African countries (Source: United Nations)

If we focus strictly on the dynamics of growth, Table 2 and Figure 3 provide us with a range of interesting information. First, the rate of population growth of the capitals always exceeds that of their respective nations, which in any case is high. Niger stands out as one of the countries with the highest population growth rates in the world, above 3% per year throughout the second half of the twentieth century, and 4% since 2000. These spectacular figures stand out over those of Senegal, Mali and Burkina Faso, which in the twenty-first century have exceeded a 3% annual increase. We have, in general, reached a stage where benefits tend to be reinforced. The minor decline in birth rates is matched by advances in the reduction of mortality due to an emerging healthcare system, which has managed to control a number of epidemics and catastrophic causes of death. The cities of Africa have grown over 5% annually, with the exception of Dakar (increases from 4.4% to 4.6% since 1980, which is perhaps compensated by a greater dynamism in its peripheries). In this model, only Praia and Cape Verde show a different profile. There are some irregular growth rates in this archipelago, between 1% and 3% annually, reflecting individual demographic behaviour. The population of the capital, Praia, always increases above those of the rest of the country, although it is not comparable to its counterparts in West Africa. Praia gained a 6% annual population in 1960, 4.93% in 1990, but in the last few decades has stood at 2.45%, less than half of Bamako, Ouagadougou and Niamey.

Regarding the fastest growing decades for capital cities, we cannot confirm the existence of a common pattern in the examples studied. This fact, in our opinion, may be due to the influence of internal political or socio-economic events that justify different national dynamics, without forgetting problems in the quality of census data, a possible reality in West Africa. Thus, in Bamako the highest rates of increase were recorded once its role as the capital of a new state was established (from 1960 to 1980) and in the last decade (the strong growth of the country has reinforced the city's centrality). In Niamey a similar behaviour is also observed (consolidation of the capital until 1980, and intense dynamism since 2000), while in Ouagadougou patterns are completely different (the highest growth rates took place in the 1980s as a result of the Burkinabe revolution, and in the years since 2000). Finally, it has been said that Dakar is beginning to grow at slightly lower rates, perhaps as a result of its claim to being one of West Africa's great cities, something which generates intense urbanisation processes in its peripheries.

Urban Macrocephalic Systems: a case study

The highly polarised, strong urban growth of capital cities results in clear processes of urban macrocephaly (Zoido *et al.*, 2013). A nation's most important city exceeds the demographic weight of the remaining cities, which just happen to be sub-regional or provincial centres with tens of thousands of inhabitants. In fact, the capital extends its area of direct influence over the whole nation, while the other cities only ensure certain core functions within their limited administrative territory. The exodus from the countryside leads mainly towards the big capital, while other regional cities act as intermediate holding places for new residents. Not even cities with a long history such as Timbuktu, Mopti, Saint-Louis or Agadez are able to have a continuous dynamism across time, even after having benefitted from being important tourist destinations. The other cities are just modest examples of leading centres, with branches of central power, the installation of a basic network of public and private services, and spaces for fairs and periodic markets. In order to systemically analyse

these two fully differentiated levels of the urban world in West Africa, it was decided to apply the classic rank-size rule from the 1940s (Zipf, 1949), as many of the phenomena of city population expansion that we observe now in this region were studied decades ago in other areas of the world.

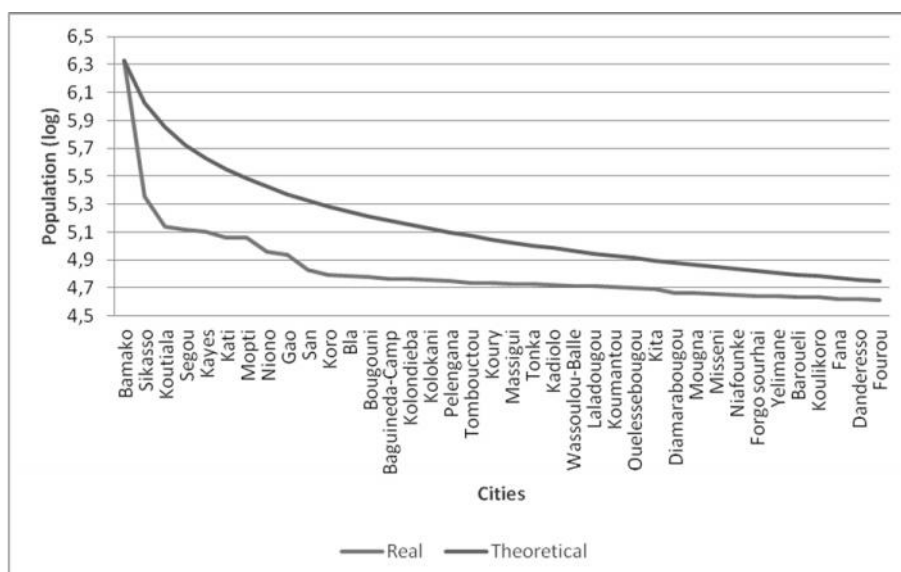


Figure 4: Rank-Size Rule applied to cities in Mali (Source: The Authors)

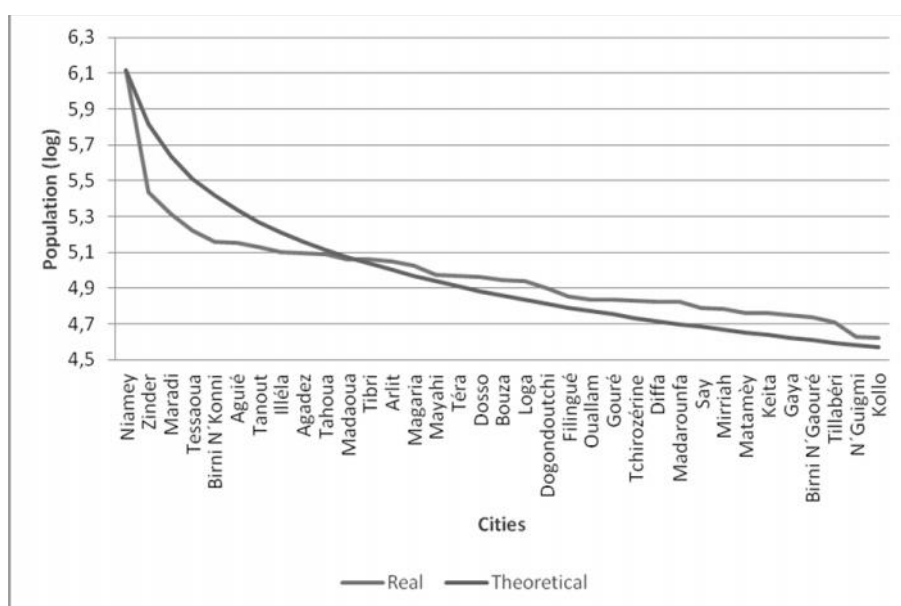


Figure 5: Rank-Size Rule applied to cities in Niger (Source: The Authors).

The problems of super urbanization and primacy of African cities (and the Third World in a wider sense) have been described by many classic writers of urban geography (Cohen, 1974; Gugler and Flanagan, 1978; Carter, 1981). We can now confirm that their observations are still valid, possibly within a context of reinforcement of the primacy and the dynamics of accelerated urbanization of capital cities. On a more general level, these theories express the application of Zipf's rank-size rule within a regional context of underdevelopment. Authors such as B. J. Berry, W.L. Garrison, M.F. Dacey and B.J. Garner have, of course, contributed to this theory (Berry and Garrison, 1958; Berry, 1961; Dacey, 1966; Garner, 1967). With the

rank-size rule we have a vertical model based on one main value of measurement (the population), which undervalues the importance of space as an explanatory variable of the processes (Garner, 1967; Capel, 1974). This fact is of lesser importance for the West African nations analysed because of the predominance of plains on their landscapes, making it possible to apply the readings of isotropic space without major difficulties. As previously explained, macrocephalic studies based on the rank-size rule provide only a momentary image (unstable across time) of the urban system's reality (Dziewonski, 1972). Nor do they introduce other analytical variables such as availability of services or a city's main economic activities. Nevertheless, we consider their application in this study to be relevant because the theories elaborated in the second third of the twentieth century are still useful for dealing with an initial approach to the study of urban systems in the very poor, fragile and mainly rural countries of West Africa.

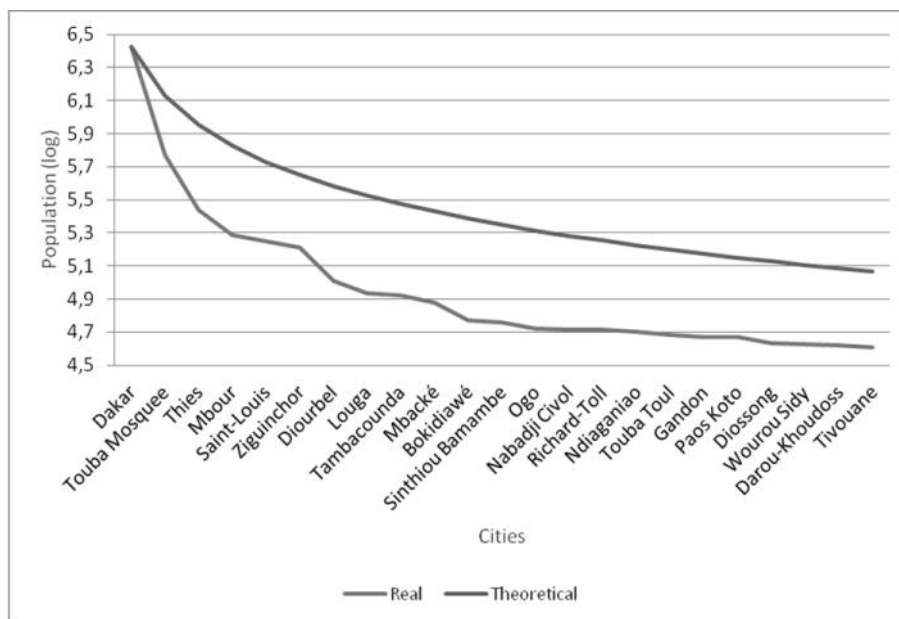


Figure 6: Rank-Size Rule applied to cities in Senegal (Source: The Authors).

Three graphs have been drawn (Figures 4, 5 and 6) which represent the application of the Rank-Size Rule to various national examples in West Africa. The expected theoretical distribution of the observed population is shown in these graphs, using, for this purpose, data provided regarding population in the major cities for 2009. The calculation of the expected population is obtained from the following formula (Brakman *et al.*, 1999):

$$\ln(m_i) = \ln(c) - q \cdot \ln(r_i)$$

in which m_i is the theoretical population of each city constituting an urban hierarchy, c is the population of the hierarchy's main city (which becomes a constant), q is a regressor (which for simplification purposes we shall consider to be equal to the unit), and r_i is the rank of city m_i within the urban hierarchy.

This model is a variant of Zipf's law (Zipf, 1949), an empirically based theoretical formulation which states that the size of cities is an inverse function with respect to the rank they occupy within the respective urban hierarchy. This regularity has been applied with satisfactory results in many countries (see Rosen and Resnick, 1980; Rozman, 1990; Krugman, 1996; Brakman *et al.*, 1999; Knudsen, 2001).

This theoretical population displays a curve, different in each case, which we have coloured in red in the graphs (theoretical), drawing out a second curve representing the logarithm of the population, which is in blue (real). The adjustment between both curves reflects an urban network's degree of equilibrium. The farther apart the curves are from each other, the greater the degree of equilibrium, this being an indicator of such phenomena as urban macrocephaly.

As an initial step we have defined those settlement structures that fit into the citizen category. In this preliminary process we realized that Burkina Faso and Cape Verde could not provide sufficient information for the construction of urban hierarchies because the existing administrative units coincide more with the provincial geographic notion than with the local entity itself, and because the small size of the country and its internal divisions (islands, municipalities) make it impossible to determine a sufficiently developed urban network for applying the rank-size rule. Regarding the territories where it has been possible to apply this rule (due to the correct adaptation of basic territorial units of information) we have proceeded to identify citizen settlements that constitute the respective networks, as specified below.

In Mali, we have considered the information available on population centres with 40,000 or more inhabitants because there is a fairly good consistency between local administrative units and settlements. Meanwhile, the population of Bamako has been estimated as the equivalent of its *cercle* (the sum of the existing municipalities throughout the city, Bamako I, II, III, etc.), and a number of municipalities which are considered as its suburbs (Kalabancoro, Dialakorodji, Soyaregoubou). For Niger, only those *communes* (municipalities) having 40,000 or more inhabitants and classified as urban have been taken into account. Rural *communes* with over 40,000 inhabitants were excluded when no important urban centres were found since they consisted only of large tracts of land with small and distant settlements. The population figures for Niamey and Zinder is the result of adding the various urban *communes* which make them up. Finally, in Senegal we have considered municipalities exceeding 50,000 inhabitants, based on the Dakar metropolitan agglomeration, which includes the *communes* of Guédiwaye, Pikine and Rufisque.

Looking at the graphs we can verify that the urban networks of the three West African countries studied are macrocephalic. Bamako, Niamey and Dakar far exceed the population of the cities placed in second position in the ranking (Sikasso, Segou and Kayes in Mali; Zinder, Maradi, Madaoua and Arlit in Niger; Touba, Thies and Saint-Louis in Senegal). It is possible that after this second step in the urban hierarchy we can find provincial and regional capitals of balanced size that give way to a third level with a greater number of cities with populations between 40/50,000 and 100,000 inhabitants. In fact, no city can compete with a great metropolis which absorbs much of the national urban growth; only modest regional centres develop due to their role as commercial, administrative or religious centres in areas where the attraction of Bamako, Niamey and Dakar do not directly interfere with those functions.

The way of life in West African cities

Along with the quantitative analysis of the urban network, this contribution should focus briefly on qualitative aspects of living conditions in the capital cities which are the subject of this analysis. This brief analysis presents the results of empirical

conclusions reached during three years of continuous work in this African region (Lois, 2010-2011 and 2012). We have had three objectives: 1) to review and analyse the urban planning documents of several urban districts in the cities under study; 2) to perform interviews of technical personnel and local political leaders regarding their area's economic base and main social problems; 3) to suggest a future model of management and good practices with the collaboration of professors and researchers of local universities. This work has been particularly intensive in the communes of Bamako II and III (Mali), Ziguinchor (Senegal), and Praia and Cidade Velha (Cape Verde). In the following paragraphs we list some of the conclusions reached.

First, it should be noted that the informal sector of the economy continues to have a very important role in generating employment and wealth. In this regard, African cities have evolved little since their analysis a few decades ago (Santos, 1973; Guglielmo, 1996; Dureau *et al.*, 2000). The number of permanent, stable jobs in administration, industry, trade and port activities, and all kinds of services has certainly increased. However, as the population has continued to increase, so has street selling, temporary work at building sites, unregulated domestic work and petty crime. The consolidation of numerous public and private companies cannot absorb the influx of so much new labour. In any case, if the economy grows in a determined way (as happened from 2000 to 2010) the material conditions of life in the city do improve. Also, a middle class gradually consolidates itself with purchasing power similar to that of other regions around the world. This encourages consumerism and contributes to the underpinning of a fragile socio-political structure. The members of this class (teachers, bankers, multinational employees, doctors, civil servants, etc.) have increased. They consume; they start living in houses, rental apartments or condominiums; they try to educate their children as a way of maintaining their social status, and they follow many behavioural parameters observed abroad.



Figure 7: Downtown Dakar (Source: The Authors).

From a morphological and spatial point of view, the main West African cities are still characterized by self-built structures, many of them built from inconsistent materials (wood, adobe, iron, etc.). Variations can be seen on the one hand between cities such as Praia and Dakar with their many well-built structures in the urban center, and on the other hand cities such as Bamako, Niamey or Ouagadougou which consist mainly of fragile and provisional structures (Figures 7, 8, 9 and 10). The recent

evolution of these types of cities (a period which can be narrowed down to the last fifteen or twenty years) reflects two processes that coincide in time, the first one being the continued expansion of urban space. If cities gain population at a fast pace, it is logical that there will be spatial growth through new neighbourhoods without neglecting the densification phenomena in previously defined areas (both historic and residential areas). The second dynamic relates to the height expansion of these capitals, where public buildings, major bank headquarters, emblematic companies, and cooperation agencies have taken up office space in tower blocks, following western urban models, and notably dominating the skyline. Therefore, the city is visually presented as a big extension of modest structures, dotted with important buildings designed by architects and authorised companies, standing out on the horizon and functioning as urban landmarks to guide pedestrians on their way (Figures 11 and 12).



Figure 8: Praia's Old Quarter (Source: The Authors).

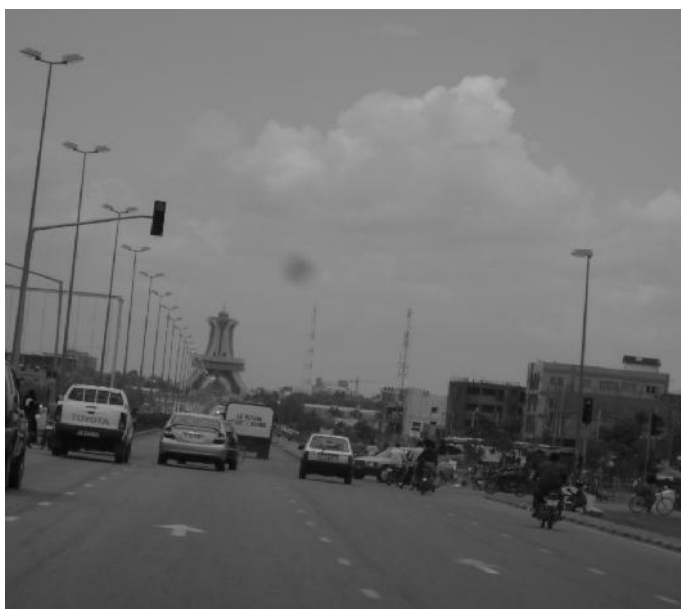


Figure 9: Downtown Ouagadougou (Source: The Authors).

As a final thought, one wonders what positive and negative aspects this model of urban life has brought upon capital cities. In the preceding pages we have noted that the classic conditions of individual freedom, anonymity, competitiveness and independence from family or group control hold strong appeal for the urban versus

the rural life. It should also be noted that the existence of large cities (with Dakar or Bamako as the most evolved examples) allows us to connect the respective countries with the global urban system, ease the entry of foreign investment and trading, and centralise export operations for the main resources of the territory.



Figure 10: Urban Landscape at Ziguinchor (Source: The Authors).



Figure 11: Urban Landscape at Bamako (Source: The Authors).



Figure 12: Urban contrast in Niamey (Source: The Authors).

Urban macrocephaly is associated with economic efficiency in conventional terms, but it generates urban congestion and poor public health. It increases risks of disaster due to uncontrolled construction, and also increases the impact of the political crises that occur regularly in this region. Thus, a boost to regional cities should be included as a priority in planning all future policies implemented in West Africa. The quality of life in the city is better, but dynamics with excessive concentration of urban growth must be avoided at all costs.

Conclusion

Studies on the urban geographical reality of certain regions in the world such as West Africa are still very limited. Therefore, new research is certainly appealing, even if only to show that the old instruments for measuring the level of equilibrium existing in the urban system of a nation (the rank-size rule) are perfectly applicable today to countries such as Senegal, Mali, Niger, Cape Verde and Burkina Faso. Capital cities concentrate the substance of a territory's population and economic growth. They define macrocephalic structures where the detailed analysis of the regional and provincial centres will provide another line of urban spatial analysis with enormous prospects.

This study has summarized the results of three years of continuous research in West Africa, an analytical project carried out together with colleagues in the countries and cities under study. The first idea that must be mentioned is the continued relevance of the classic concepts of urban primacy and macrocephaly first stated in the 1960s, which still allow for the characterization of cities in countries such as Senegal, Cape Verde, Niger, Mali and Burkina Faso. The application of the rank-size rule to these territories demonstrates the current validity of these traditional terms of geography. A second issue of interest refers to the strong appeal cities pose for considerable population groups in this area of West Africa. The rural exodus continues to be very important and is directed principally towards the main cities, in other words, capitals defined by their strong primacy. Third, great inequalities can be seen in population, prominence and functional organization of space between the capitals and the other leading towns of the urban system. This contrast between two well defined types of cities can be perfectly stated by applying Zipf's law as adapted by more recent authors. Finally, from the observation and direct analysis of urban dynamism, we can see a dual world within cities. A duality marked by poverty and the persistence of an informal economy on the one hand, while, on the other, the development of public and private functions of power with their appropriate buildings, and an emerging well-to-do class defining another part of this reality which has been the object of our research.

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The new concept of digital divide in urban area: the case of Galicia

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Abstract: The spread of new technologies has seen unusual developments throughout the world in the last decade. Taking into account the World Bank data, the number of internet users has globally increased fivefold in the last ten years. But this growth in the number of internet users has undergone varying intensities. The European Union has tripled the number of internet users in the last decade, while Latin America and the Caribbean increased tenfold, East Asia and the Pacific by seventeen, and by twenty-six in the Arab World. The dissemination process of the Information Society has marginalised different regions and social sectors and has led to what is known as the Digital Divide. Currently, the number of internet users are close to two thousand five hundred million, and from our point of view, the traditional Digital Divide in the early XXI century is giving way to a new second generation of Digital Divide. This separates citizens who make use of the network's basic services who use the advanced services, such as e-learning, e-commerce, telecommuting, electronic banking, and so on. The aim of this communication is to study the second generation of Digital Divide in the urban areas of Galicia, in the northwest of the Iberian Peninsula, and the penetration of the consumption of advanced internet services in this region.

Introduction

The internet could be defined as the network that interconnects the majority of computer networks (Castells, 2000), or as a way of connecting computers around the world (Cairncross, 2001) and one which accelerates and brings down the costs of communication (Davies, 2004). However, beyond this simple definition, all are consequences associated with the emergence of this tool. Since the introduction of the internet the space-time relationship has narrowed more than ever before. The classic concept of physical territory, displacement and distance, was replaced by the instantaneous transmission of information and the provision of advanced online services (Cairncross, 2001; Veltz, 1999, Ges, 1997). In the end, almost all interpretations have concluded that the recent technological advances in the means of communication are associated with contemporary globalization (Davies, 2004) and have brought about the formation of a large global network influenced by the flow of communication and economic, political, social and cultural interaction (Short and Kim, 1999). Notwithstanding, we now know that this opening is not global. Initially, the Information Society is essentially an urban phenomenon, led by metropolitan areas that have a greater capacity to receive and process information (Macía, 2007). In general, the cities have a hegemonic position over rural areas (Armas, 2009), although it is true that it is possible to find some exceptions in Europe, for instance, in rural Scandinavian regions such as the regions of Västerbotten and Norrbotten in Sweden (Lois, *et al.*, 2012).

Moreover, there are still considerable differences between countries and regions in the Information Society in Europe. An initial analysis exposes the digital divide between Northern and Central Europe and Southern and Eastern continental regions. In the Northwest of Bulgaria, for example, 66% of the population has never used a computer, while this figure stands at 32% in Galicia and only 1% in the region of Hordaland, Norway (Eurostat, 2011). Although it is true that Europe is moving towards convergence in the expansion of new technologies in territorial information

and communication technologies (ICT), it can still be said that distances are still very considerable.

Citizens have the ability to access a variety of services and opportunities, communicating with other citizens, interacting with government, associations, companies and banks, empowering work and distance learning, and so on. (Armas, *et al.*, 2011; Muhammad, 2007; Rhee, 2007). Nevertheless, following the first stage of ICT promotion and diffusion, one wonders what happens to the use it is given (Lois, *et al.*, 2010). That is, if people use computers and the Internet, what benefits do people draw from their use? The functions and services provided by the internet are innumerable, especially when highlighting e-government, e-learning, e-banking and e-commerce. It will be the use of the Smart Internet that makes the difference between the Digital City and the City of Knowledge. A society connected to the internet would put an end to the digital divide, but it would not stop a new gap appearing, the second generation of digital divide. This can only be overcome when citizens use the internet to their advantage (Macia and Armas, 2012).

In this paper the position held by the Galician cities in the Information Society and the contrast with certain rural districts are presented. Not only do we emphasise the spread, but also the use of the internet as a way to overcome the second generation of digital divide. Also, may we say, certain correlations between internet usage and a population with university studies have been uncovered.

The spread of the internet in Galicia

On a national level, Galicia occupies a marginal position in the use of ICT. The survey on information technology in households conducted by the INE showed that the percentage of households with a computer in Galicia was only 35.1%, far below the 54.7% in the Community of Madrid or the 45% state average in 2003. Specifically, Galicia occupied the penultimate position in the 2003 Spanish ranking, solely topping Extremadura. Moreover, the 2004 eEspaña report stated that internet access was only available in 16.9% of Galician households in 2003, compared with 32.7% in Catalonia, 32.2% in the Basque Country and the 25.2% national average. Some favourable data announced in the same year was that nearly 24% of Galician people were internet users, this dramatically improved on the meagre 2.5% in 1998 (Auna Foundation, 2004).

The percentage of internet users improved significantly five years later, covering 46.2% of the Galician population. The evolution is certainly very positive and dawns the progressive collapse of the digital divide in Galicia. If we look at counties and county groups, more favourable data is recorded in the regions of A Coruña and Betanzos (59.4%), Pontevedra (56.3%), Vigo (52.7%), Ferrol, Eume and Ortegal (52.5%), Barcala, Sar and Santiago (55.1%) and Ourense (51%). With the exception of Lugo, all of these counties or county groups are influenced by the presence of the seven cities in Galicia. Conversely, the regions of A Fonsagrada, Ancares and Sarria (25.8%), in the eastern mountains or in the proximity, represent the poorest results and confirm the paradigm of the digital divide in rural areas (IGE, 2008, see Table and Map 1).

The differences between urban and rural areas are even more significant if the analysis considers the percentage of city internet users. The values of the seven Galician cities range from the minimum percentage of Ourense (55.3%) and the maximum of Lugo (65.8%), values that confirm the distance that persist in urban

areas in respect to the rural spaces in Galicia (IGE, 2008, see Table 2). Interestingly, the differences between Ourense and Lugo are quite strikingly alike, because, a priori, both are cities with geographical similarities (located in Eastern Galicia and inland), both have similar population sizes (cities of around 100,000 inhabitants) and are economically comparable (dependant on the service sector).

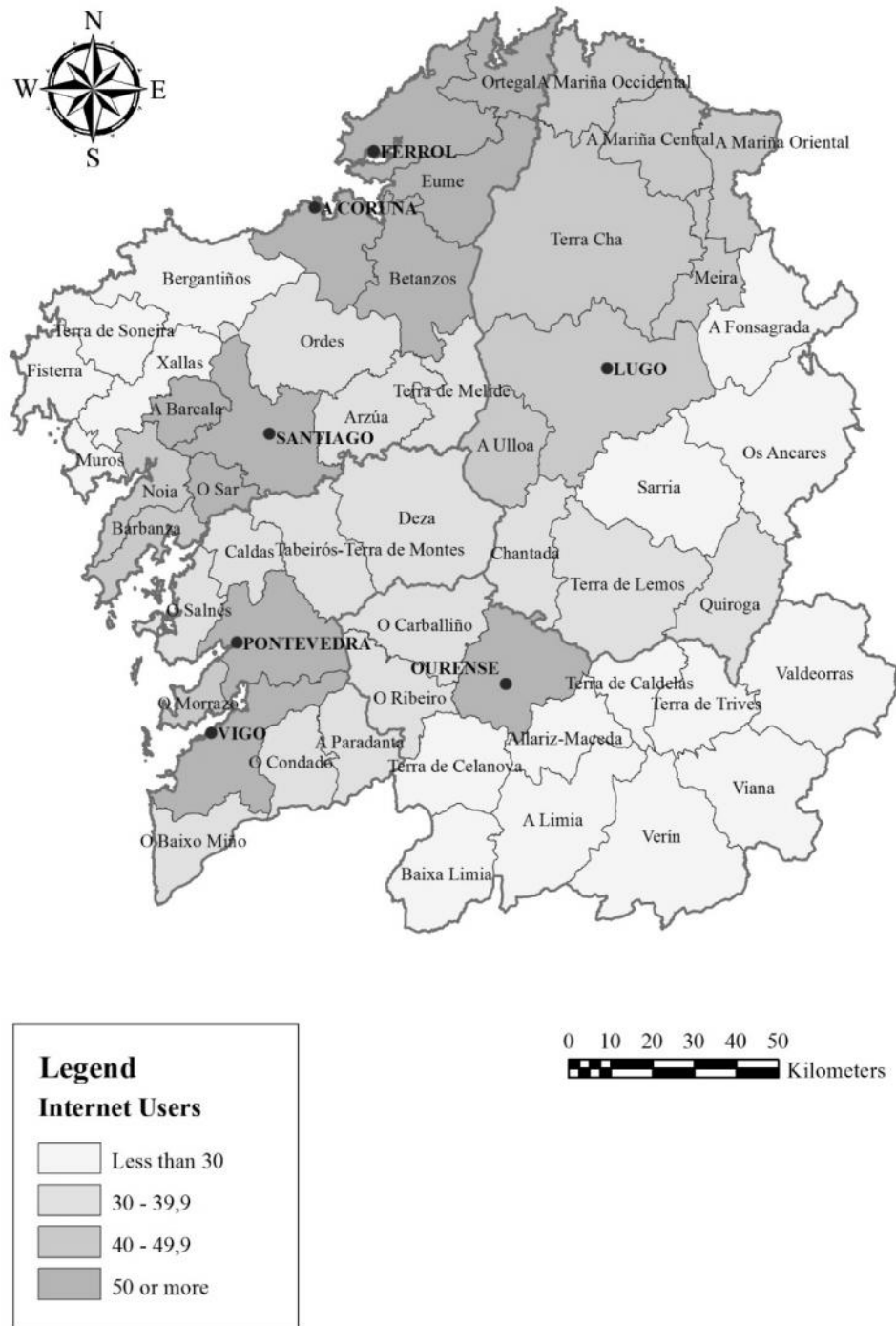


Figure 1: Internet Users in Galicia by Counties and County Groups (Source: Own elaboration from Survey on family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old).

Table 1: Internet Users in Galicia by Counties and County Groups

Geographical Areas	%
Province of A Coruña	
Counties of Arzúa, Ordes e Terra de Melide	34,4
Counties of Ferrol, Eume and Ortegal	52,5
Counties of Bergantiños, Fisterra, Muros, Soneira and Xallas	29,2
Counties of Barbanza and Noia	41,0
Counties of Coruña and Betanzos	59,4
Counties of Barcala, Sar and Santiago	55,1
Province of Lugo	
Counties of Chantada, Quiroga and Terra of Lemos	38,2
Counties of Fonsagrada, Os Ancares and Sarria	25,8
Counties of Ulloa, Lugo, Meira and Terra Chá	48,0
Counties of Central Mariña, East Mariña and West Mariña	45,8
Province of Ourense	
Counties of Carballiño and Ribeiro	33,5
Counties of Allariz and Maceda, Terra de Caldelas, Terra de Trives and Valdeorras	27,7
Counties of Limia, Baixa Limia, Terra de Celanova, Verín and Viana	26,5
County of Ourense	51,0
Province of Pontevedra	
Counties of Deza and Tabeirós-Terra de Montes	38,1
Counties of Paradanta, Baixo Miño and Condado	38,8
Counties of Caldas and Salnés	39,8
County of Morrazo	48,7
County of Pontevedra	56,3
County of Vigo	52,7
TOTAL GALICIA	46,2

(Source: Survey of family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old).

The correlation between internet users and population with tertiary education is quite clear in the Galician cities. This correlation is important insofar as it fits with two of the pretensions of Smart Cities that focus on human capital (Smart People) and ICT as strategic tools and transversal on all dynamics that configure Smart Cities (Centre of Regional Science, 2007). Correlation analysis has shown that the three

populations with the fewest users are precisely those cities with the worst academic results. Thus, Ourense, Ferrol and Vigo are apparently the worst Galician cities in the Information Society (IGE, 2008, see Table 2).

Table 2: Internet Users and Population with Tertiary Education and Vocational Training in Galician Cities

Cities	Internet	Education
Ferrol	56,9	28,6
A Coruña	63,0	35,6
Santiago de Compostela	60,8	39,4
Lugo	65,8	34,6
Ourense	55,3	27,5
Pontevedra	60,5	31,6
Vigo	58,5	26,7
GALICIAN CITY AVERAGE	60,0	31,5

(Source: Survey of family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old).

The initial data on the Information Society in Galicia seems to clarify three conclusions. Firstly, Galicia is advancing on a path of convergence with the rest of the regions in the European Union, although the differences are also evident in the more advanced European regions in the Information Society. Moreover, the digital divide is still evident between urban and rural areas. The Information Society is initially an urban process and certainly, Galicia does not seem to be an exception. Finally, the link between academic training and a greater willingness on the part of the population to use ICT seems obvious. Everything indicates that the social classes with tertiary education are more likely to surf the Internet.

The Galician cities are in a phase of overcoming the digital divide. Long gone are the statistics that placed Galicia first place as an unlatched society and outside ICTs. Nevertheless, having almost come through this stage, it is necessary to go further and to wonder about what the real use of ICT by the population is and, more specifically, the use of the internet. Since the beginning of the battle against the digital divide, some twelve years ago, there has been talk about the difference between potential and real users of the internet. The first group has been one with an internet connection at home, however, the latter group has also had a connection with the difference being that they use it, regardless of the technological tool they may have at their disposal (Armas, 2009; Macia, 2007). Hence, a new concern in ICT expansion policies was born. Although it is important to extend ICTs throughout the territory, it has been no lesser important to raise awareness to the valuable use of this technology.

Current needs are different. The first plans for the European Information Society (eEurope 2002; eEurope 2005) exposed basic ideas on connectivity (infrastructure expansion and lower connection prices). The Europe 2020 Strategy, signed in 2010, was earmarked as a challenge to create a single digital market based on high speed connections. It is clear that internet connectivity is growing every year and, in this

respect, the convergence with more advanced European regions is a much-heralded fact. For example, in 2008, and always in regard to the total population, 38% of Galician citizens were connected to the Internet, in comparison with 49% of Spaniards and 80% of Danes. Three years later, Galicia had improved by some 15 percentage points, Spain 13 and Denmark by seven (Eurostat, 2011). The convergence that breaks the digital divide is a reality in Europe.

But what happens with the advanced Internet services? The statistics reflect that lagging regions in the Information Society are converging on connectivity and, in parallel the second generation of digital divide is emerging, one that differentiates territories that make clever use of the internet. This is essential to check the true progress of a territory in the Information Society.

A new challenge for Galicia. Digital city to the city of knowledge

In this paper's introduction some of the changes that cause ICT in society were evaluated. Advanced services associated with the internet are part of the daily routine for many citizens who use the net to study, deal with the public administration, bank, hire services and purchase goods. In all, they are a series of tasks that drive the process, save time and money on travel and, therefore, improve the citizens' daily life. Knowing to what extent these advanced internet services are used for by citizens will show whether specific regions or cities are able to overcome the digital divide of second generation. Overcoming this represents the true immersion of a community in the Information Society.

In the Galician cities, some 60% of the population aged between 15-74 years old use the internet (IGE, 2008; see Table 3). This represents a moderately positive value that puts Galicia in an intermediate position in the Information Society. At this point, it is interesting to analyse what the Galician people use the internet for in cities, and, by way, check if the Galician cities are becoming real Knowledge Cities IGE statistics (2008) reflect that 43.9% of internet users use the net only for browsing (see Table 3). The data might suggest that they are users who browse aimlessly. This is to be understood not as a criticism but as a way of warning about an inefficient use of a strategic tool. This group includes all users who use the internet to communicate with others through email, discussion forums, online chats and, particularly, those using social networks (Facebook, Tuenti and Twitter among others). Also included are the users that visit sites (usually electronic newspapers), those downloading information and multimedia resources and, in general, all those who find the internet a suitable channel for fun and for "finding things".

In the second group, there are users that, in addition to surfing the internet, make use of advanced services in order to study, manage, hire services, make purchases, and so on. As was mentioned above, it will be the majority use of these services which will mark the transition from a Digital City to a Knowledge City. IGE statistics (2008) provide data on banking, commerce and electronic government or administration (see Table 3). This data is useful for obtaining an initial indication to what position the Galician cities stand in the Information Society.

Approximately one in five internet users connects to a bank. They usually do this in the form of transfers, credit card repayments, queries and checking personal account balances. These operations are generally rewarded by the banks in the form of commissions and better conditions for customers using electronic banking. This is certainly a valuable tool for citizens

Table 3: Advanced Uses of the Internet in the Galician cities

		Advanced uses of the Internet			
Cities	Internet	Browse	Bank	Commerce	Government
Ferrol	56,9	35,5	23,4	8,7	30,3
A Coruña	63,0	49,0	24,4	10,5	34,2
Santiago de Compostela	60,8	47,1	26,5	12,6	36,5
Lugo	65,8	38,8	20,0	9,3	25,8
Ourense	55,3	45,8	16,4	8,8	23,9
Pontevedra	60,5	39,9	20,5	10,1	28,6
Vigo	58,5	44,6	17,1	6,8	24,2
GALICIAN CITY AVERAGE	60,0	43,9	20,8	9,3	28,7

(Source: Survey of family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old. Percentages of total internet users).

Santiago de Compostela is a city at an advantage, with 26.5% of internet users using this service. Also, if we take as a reference the city's entire population (this data always relate to people from 15-74 years old), the result is that one in 16 citizens is an electronic banking user. Conversely, the City of Ourense presents the worst results, with only 16.4% of internet users using this service, less than a real user per ten inhabitants (IGE, 2008, see Table 3).

For Drucker (2001), the true impact of the new society will be e-commerce. In fact, companies are finding the internet to be a new medium with which to offer their products on the market and begin purchase and sale processes with suppliers and customers. On the other hand, many users are aware that making purchases on the web is cheaper. It may even be the only way to access a particular service, ensuring their participation as clients in a virtual environment. A good example is the airline Ryanair, it has no physical offices beyond airports and penalises customer acquisition of airline tickets if not bought via the internet.

The analysis of electronic commerce in Galicia is very clear. On the one hand, the digital divide of second generation in rural regions is evident. Furthermore, the delay in Galician cities can be seen in respect to Europe's leading regions in the Information Society.

The grouping of regions of A Barcala, O Sar and Santiago (12.0%), Betanzos and Coruña (11.6%) stand out over other groups and Galician regions in the percentage of e-commerce users. Highly delayed are rural counties, especially the cases of Allariz and Maceda, Terra de Caldelas, Terra de Trives and Valdeorras with only 2.1% of users (IGE, 2008; see Table 4 and Map 2). Rural areas walk slowly in the Information Society. The online population is much lower and there are few users who connect in order to purchase and sell on the net. The digital divide of second generation in rural Galicia is also a reality.

Table 4: Users of Electronic Commerce in Galicia by Counties and County Groups

Geographical Areas	%
Province of A Coruña	
Counties of Arzúa, Ordes and Terra de Melide	3,9
Counties of Ferrol, Eume and Ortegal	10,2
Counties of Bergantiños, Fisterra, Muros, Soneira and Xallas	9,4
Counties of Barbanza and Noia	8,6
Counties of Coruña and Betanzos	11,6
Counties of Barcala, Sar and Santiago	12,0
Province of Lugo	
Counties of Chantada, Quiroga and Terra de Lemos	4,7
Counties of Fonsagrada, Os Ancares and Sarria	6,0
Counties of A Ulloa, Lugo, Meira and Terra Chá	8,6
Counties of Central Mariña, East Mariña and West Mariña	9,4
Province of Ourense	
Counties of Carballiño and O Ribeiro	6,2
Counties of Allariz e Maceda, Terra de Caldelas, Terra de Trives and Valdeorras	2,1
Counties of Limia, Baixa Limia, Terra de Celanova, Verín and Viana	5,6
County of Ourense	8,7
Province of Pontevedra	
Counties of Deza and Tabeirós-Terra de Montes	6,1
Counties of Paradanta, Baixo Miño and O Condado	2,9
Counties of Caldas and O Salnés	8,8
County of Morrazo	4,6
County of Pontevedra	9,4
County of Vigo	6,0
TOTAL FOR GALICIA	8,4

(Source: Survey of family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old. Percentages on total internet users).



Figure 2: Users of Electronic commerce in Galicia by Counties and County Groups (Source: Own elaboration from Survey on family living conditions. New technologies module, 2008, IGE. Data refers to people aged 15 to 74 years old).

Galician cities respond better than rural areas, but what are the differences between them and what place do they occupy in a European context? In Santiago de Compostela, 12.6% of Internet users and 7.7% of the municipality's citizens carry out e-commerce, the best results in Galicia. The City of Vigo, with the biggest population and economic leader in the community, has curiously the worst results. Only 6.8% of Net users and 4% of citizens use the internet to buy and sell goods and services. The percentage differential between Santiago de Compostela and Vigo are remarkable and could even give rise to talk of a second generation of digital divide between cities (IGE, 2008; see Table 4 and Map 2).

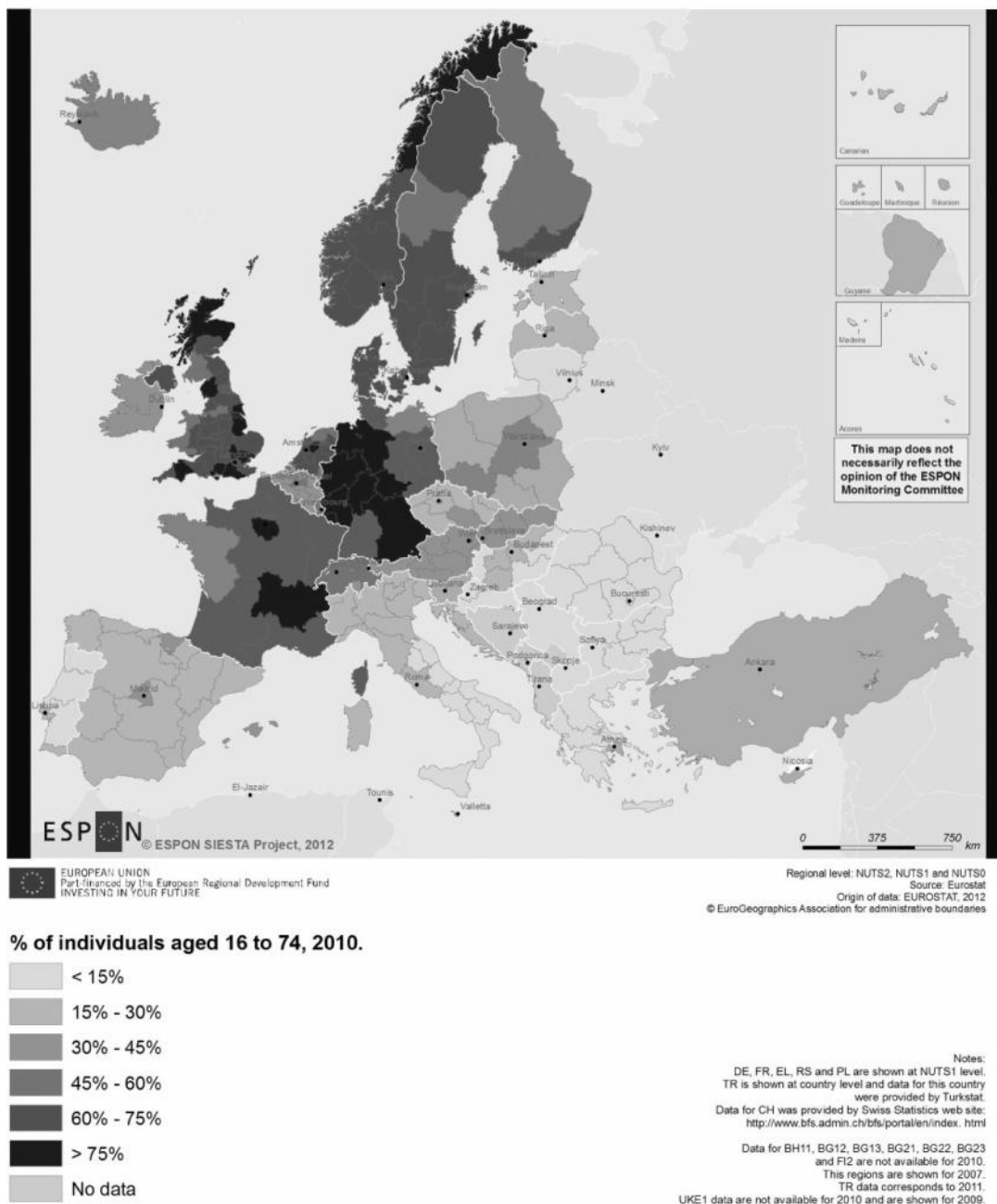


Figure 3: Users of E-commerce in the European Regions (Source: ESPON SIESTA Project, 2012. Individuals aged 16 to 74 years old who ordered goods or services over the Internet for private use, 2010).

In Europe's most advanced regions the situation is completely different. Europe is progressing at various speeds in the Information Society and, therefore, it is establishing a second generation of digital divide. This fact is easy to see on the European map, given that the population percentage of e-commerce users is much lower in the Mediterranean basin regions and Eastern Europe, especially in the cases of Greece, Serbia, Romania and Bulgaria (SIESTA ESPON, 2013; see Map 3). The comparative analysis between European regions clearly highlights Galicia, where only 16% (2008) and 23% (2011) of the population of 16-74 years old make use of electronic commerce. The European average is 35% (2012), but in regions like Bremen or Hovedstaden over 70% of the population takes part in electronic commerce (Eurostat, 2012).

One of several eEurope 2002 recommendations argued for the promotion of e-government. There has always been a clear commitment to bringing public administration closer to citizens, ever since the first plans to promote the Information Society in Europe.

The analysis of Galician users who consult, apply to and manage public administration information via the internet has improved on the previous percentage values but the hegemony of certain cities over others is still maintained as, once more, Santiago de Compostela presents better outcomes. In the Galician capital, 36.5% of internet users and 22.2% of citizens carry out various public administration tasks by using the internet as a communication means. The City of A Coruña, showing percentages of 34.2% of users and 21.5% of citizens, has very similar values to Santiago de Compostela. Conversely, the cities of Ourense and Vigo again show some delay in the dissemination of the Information Society amongst citizens, with only 13.2% and 14.2% of citizens using eGovernment respectively (IGE, 2008, see Table 3). The considered variables confirm a certain distance in the use of advanced internet services among the cities of Galicia.

Conclusion

Having overcome the digital divide that separates engaged spaces from the disengaged spaces, modern societies are facing a new challenge that responds to the term of second generation of digital divide, which refers to societies that do not use advanced internet services.

Galicia is on the way to overcoming the digital divide and is gradually converging with Europe's leading regions in the Information Society. However, the internal situation is very different and shows a clear digital divide between urban and rural areas. Indeed, the digital divide in rural regions in Galicia is still a reality.

Moreover, for the second time, Galicia has been late in incorporating in the Information Society. It is slowly converging in connectivity but is far away in terms of comparative statistics on the use of advanced internet services. This reality makes Galicia a space immersed in the second generation of digital divide, with a special emphasis on rural areas.

Finally, we can see some disparities among the Galician cities with respect to the use of advanced internet applications. Cities such as Santiago de Compostela clearly present better values than Vigo in the use of e-banking, e-commerce and e-government. One can even speak of a small second generation of digital divide within urban Galicia.

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Modeling urban change using cellular automata: the case study of Johannesburg, South Africa

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Abstract: Urbanization is one of the most evident human-induced global changes. Despite its economic importance, urban growth has a considerable impact on the surrounding environment. The most hazardous impacts caused by the informal and sometimes poorly planned developments are: the destruction of green spaces, increase in traffic, air pollution, congestion with crowding and lack of significant contribution to national income. Remote sensing provides an excellent source of data, from which updated land use/land cover information and changes can be extracted, analyzed, and simulated efficiently. Recent advances in computer models, GIS and remote sensing tools enable researchers to model and predict urban growth effectively. Cellular automata models have better performance in simulating urban development than conventional mathematical models. Johannesburg is the economic powerhouse of South Africa and it is the most populous metropolitan area. The city has experienced a significant growth in informal settlements. This growth has led to the loss of vast expanses of land, thus reducing the land available for other land uses, and contributing to a series of environmental problems. This paper quantified, mapped, and analyzed, the urban growth of Johannesburg from 1995 to 2010 using Landsat TM & ETM+ data. Cellular automata techniques were implemented for modeling the urban growth of the city of Johannesburg up to 2030. The model predicted future urban changes within and at the periphery of the city. The forecasted urban land cover change would prove useful for future urban planning and management of space in Johannesburg.

Introduction

The spatial dynamics of urban growth is an important area of analysis in urban studies. Several studies have addressed issues of urban growth and dealt with a diverse range of subjects, e.g. urban environment, urban development, urban change detection, and management (Cihlar, 2000; Wang, *et al.*, 2003; Páez and Scott, 2004; Zhu, *et al.*, 2006; Geymen and Baz, 2008; Hedblom and Soderstrom, 2008).

Urban areas are characterized by high levels of spatial dynamics where their sizes are increasing dramatically. The expansion of a city beyond its periphery requires population growth spatially distributed. Population growth contributes to urban change by absolute growth, which increases urban areas, and changes the dynamics of urban demography. This increases the number of people residing in small cities at a high rate, and consequently decreases the household sizes and increases the number of the housing units (Qiu, *et al.*, 2003).

In South Africa urbanization levels approached 56% in 2001, resulting in a 4.3% increase from 1996 to 2001 (Kok and Collinson, 2006). Urban growth is influenced by a number of factors including geographic, demographic, economic, social, environmental, and cultural ones. Hence, modeling such a dynamic system is an analytical challenge (Kashem, 2008).

Remote sensing (RS) and Geographic Information Systems (GIS) techniques are useful geospatial tools widely used to assess natural resources and monitor spatial changes. Land Use/Land Cover (LULC) change dynamics can be analyzed using time series remotely sensed data and linking it with socio-economic or biophysical

data in a GIS (Moeller, 2004; Reveshty, 2011). The integration of RS and GIS enables researchers to analyze environmental changes, this includes land cover mapping and change detection, monitoring and identifying land use attributes, and change hot spots. With the advancement in technology, reduction in data cost, availability of historical spatial-temporal data and high resolution satellite images, GIS and RS techniques are now useful research tools in spatial change and modeling (Feng, 2009; Bayes and Raquib, 2012).

Advances in satellite-based land surface mapping are contributing to the creation of considerably more detailed urban maps, offering planners a much better and deeper understanding of urban growth dynamics, as well as associated matters relating to territorial management (NASA, 2001). In terms of analyzing urban growth, (Batty and Howes, 2001) reported that, remote sensing technology provides a unique perspective on growth and land-use change processes. Data sets obtained through remote sensing are consistent over great areas, time, and can provide information at different geographic scales. Remote sensing-derived information is very useful in describing and modeling the urban development process. This leads to better understanding, management and planning (Banister, *et al.*, 1997; Longley and Mesev, 2000; Longley, *et al.*, 2001; Yikalo and Cabral, 2010).

Remotesensing data helps to understand how an urban landscape is changing through time. This understanding includes: (1) urban growth rate, (2) spatial pattern of the growth, (3) difference between the observed and forecasted growth, (4) spatial or temporal variance in growth, and (5) if growth is sprawling or not.

Urban growth modeling is getting more attention as an emerging research area. This is due to the recent dramatic increase in urban populations that increase the pressure on infrastructure services. Among all developed urban growth models, cellular automata (CA) models have better performance in simulating urban development than conventional mathematical models (Batty and Xie, 1994).

During the past 15-20 years a new generation models have been developed, based on the assumption that an understanding of the details can explain the whole – i.e. a bottom-up approach. One of these models is cellular automata (CA). CA has been shown to be successful in capturing complexity with simple rules. One of the most important parts in making CA more realistic is to find the transition rules which represent the real pushing and pulling forces.

Cellular Automata is based on a defined neighborhood, where every entity (in two dimensions represented by a cell) is interacting with the surrounding cells only. Thus, CA has been considered most suitable for processes where the immediate surroundings have an influence on the cell, such as diffusion processes. This includes processes of ecological dynamics (Parker, *et al.*, 2003).

The essential component of a CA is: a grid (raster) consisting of cells cell states (1 and 0), a neighborhood within which transition rules can apply, and a temporal space or time-step interval (Torrens, 2000).

Despite all the achievements in CA urban growth modeling, the selection of the CA transition rules remains a research topic (Batty, 1998). CA models are usually designed based on individual preference and application requirements with transition rules being defined in an *ad hoc* manner (Li and Yeh, 2003). Furthermore, calibration

of CA models is still a challenge. Most of the developed CA models need intensive computation to select the best parameter values for accurate modeling.

The purpose of this study is to apply an integrated approach incorporating GIS, RS, and modeling to identify and analyze patterns of urban changes within the study area of Johannesburg between the years 1995 and 2010. The study also aims to determine the probable future developed areas in 2030 to enable the anticipation of planning policies that aim to preserve the natural characteristics of the study area.

Material and methods

Study area

Johannesburg is South Africa's economic powerhouse and it's most populous metropolitan area. It is a rapidly growing city, with a population in excess of 3.2 million. The growth rate is 3-4% per year resulting from natural increase as well as migration from surrounding areas within and outside the country. Johannesburg configures 7.37% of the country's population, the population density of Johannesburg is 2231 person per km² (Lynelle, 2012).

The study area covers 3,657 Km² (51 x 71 km) and includes the entire area of Johannesburg and some other areas from the surrounding cities as shown in the following figure (1).

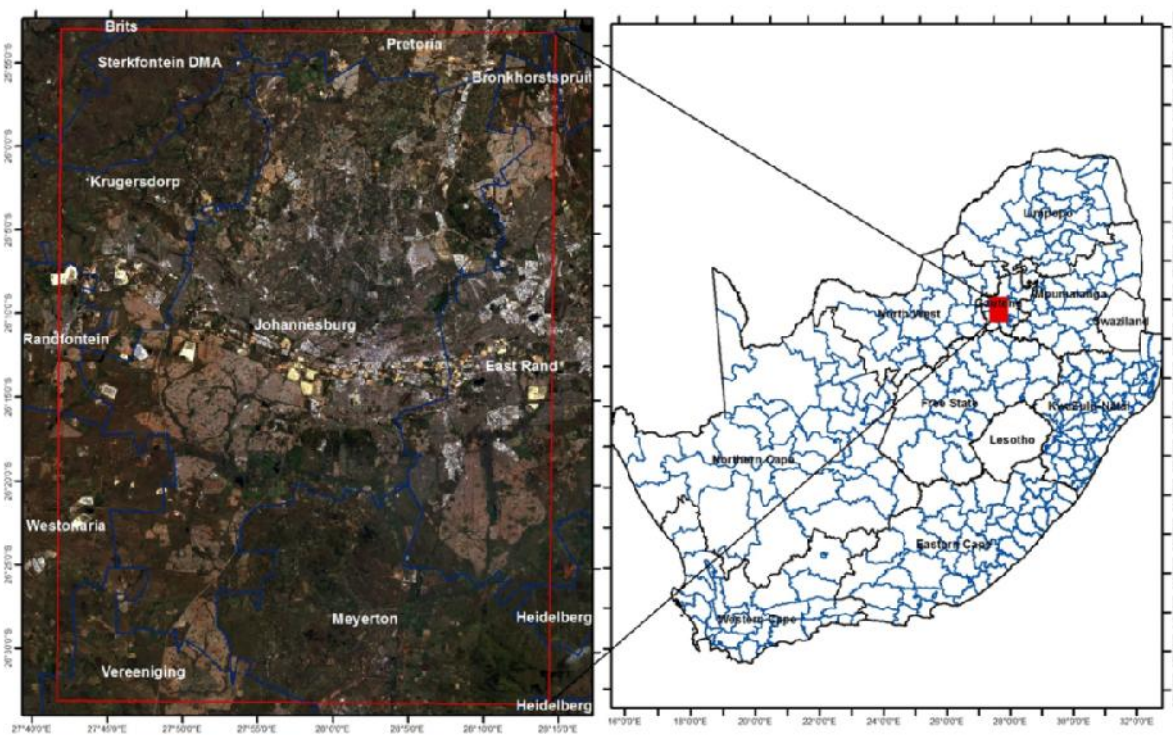


Figure 1: Study area.

The topography of study area is made up of diverse topographical features Mountainous ranges on the middle and western sides surround Johannesburg; the eastern side of the area is much flatter in comparison with the western part. The northern part is the lowest area (1230 m). Elevation of the area ranges between 1230m to 1930m above sea level.

Data analysis and processing

Two Landsat images were downloaded from the USGS web site. The first was a Landsat 5 TM image acquired in August 1995 while the second was a Landsat 7 ETM⁺ captured in May 2010 (figure 2). Due to the Landsat Scan Line Corrector (SLC-off) failure the second image was gap filled using another Landsat image captured on March 2010. Other auxiliary data were collected as listed below:

- Road network layer was collected from Gauteng City-Region Observatory (GCRO) in vector file format.
- 2.5 m LULC data set obtained from GCRO in raster format was used for accuracy assessment for 2010 LULC map
- Twelve topographic sheets of 1:50,000 that covers the study area were used for accuracy assessment for 1995 LULC map.
- Five meter contour line data set for extracting the digital elevation model for the study area.

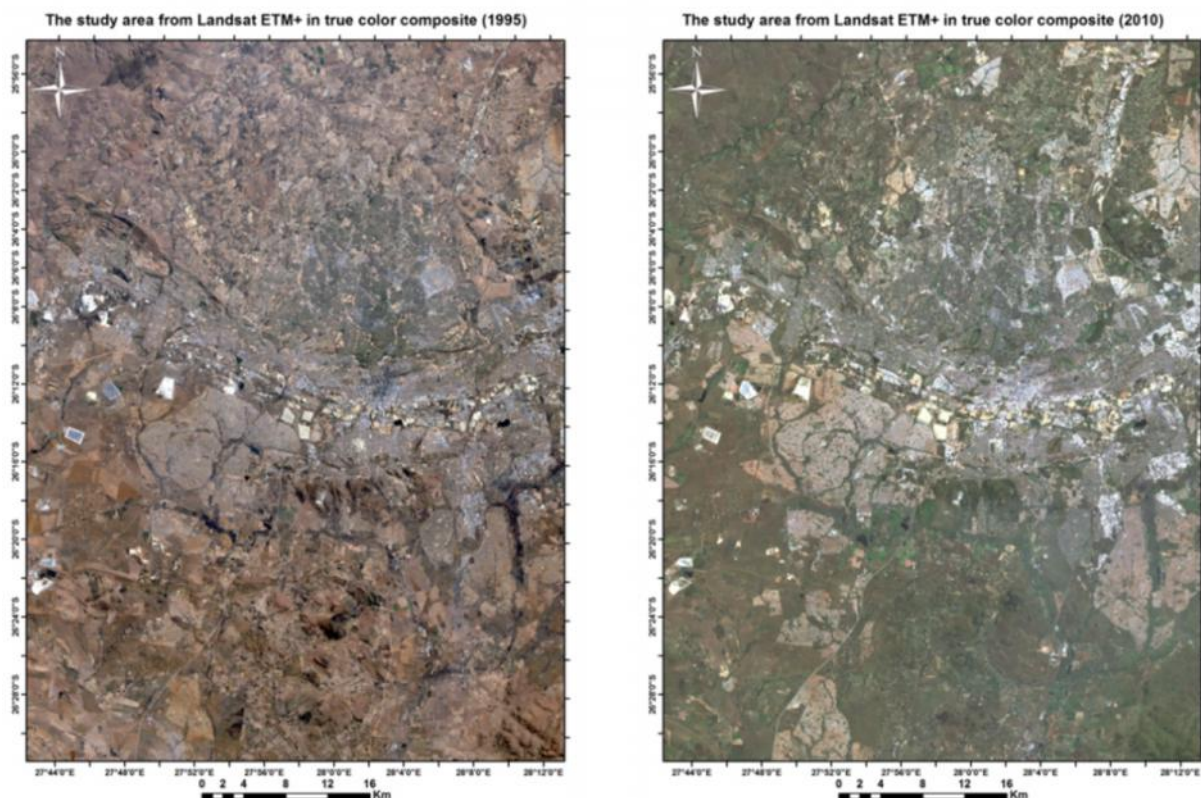


Figure 2: Landsat natural look for the study area.

Two bands local histogram match gap filling was done using Landsat gap fill module embedded in ENVI 5 software (ENVI, 2012). Layer stack was carried out to get multi-band file. The study area was clipped from the entire scene. Figure (3) summarizes the different steps applied to get the study results.

Minimum distance supervised classification was done using IDRISI Selva software (Eastman, 2012). The study area was classified into 10 different classes that were merged to 5 classes: Water and wet land, Crop land and Natural vegetation, Urban

and Industry, Mines and Quarry, and bare soil and Rock. Accuracy assessment was carried out for the two classified images using 341 random points for 1995 and 315 points for 2010. The ground truth points were collected using the 2.5m LULC obtained from GCRO for the 2010 image while for 1995 image ground truthing points were collected from the topographic maps in combination with the satellite image itself. The Land Change Modeler module embedded in IDRISI was used for LULC change analysis and modeling future development of the study area.

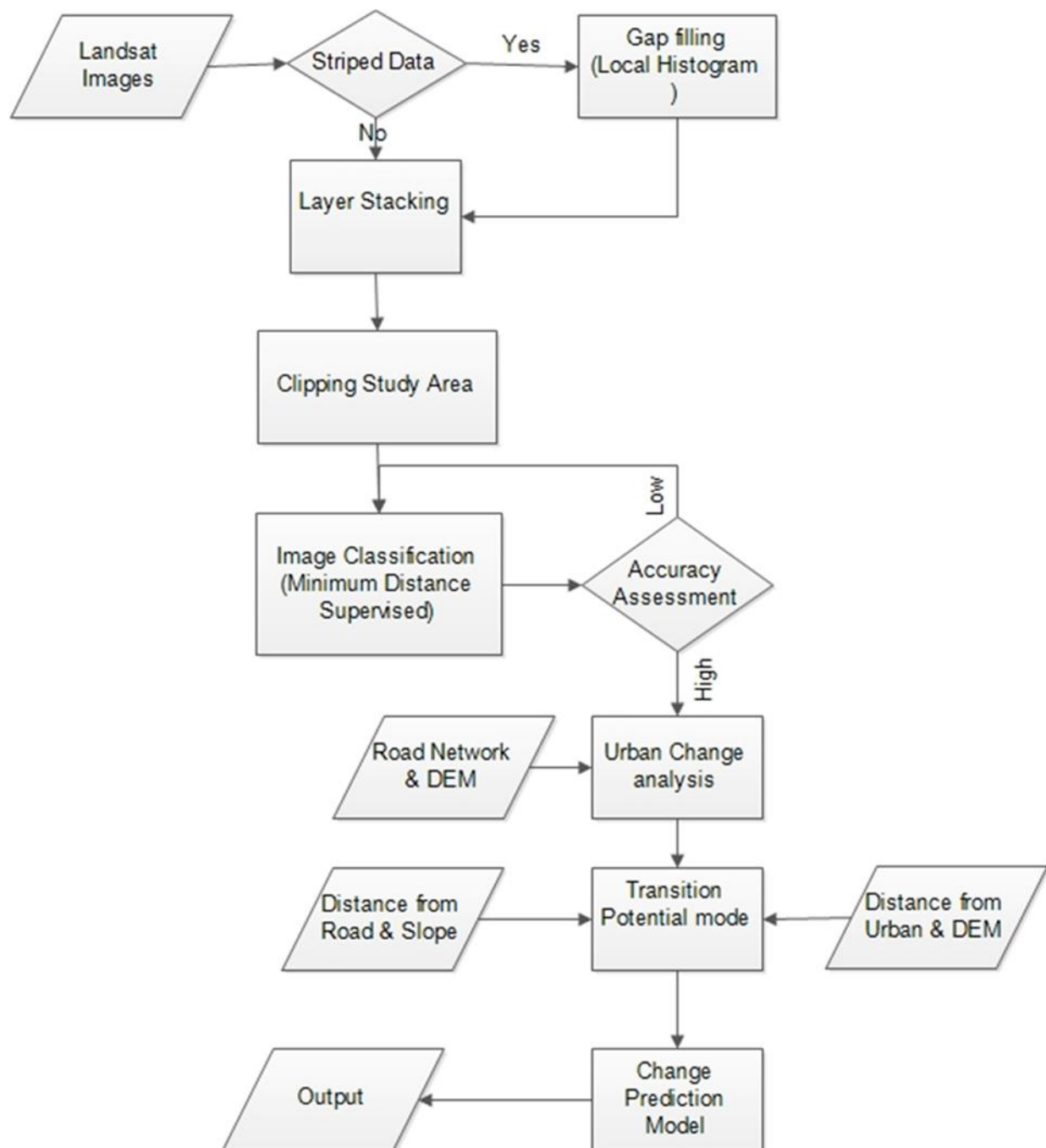


Figure 3: Flow chart for the applied methodology.

Results and discussion

Accuracy assessment

Table (1) summarizes the results for accuracy assessment for the year 1995. A total number of 341 points were chosen randomly. For the water and wet land class 52 points were selected with accuracy of 86 %. For the crop land and natural vegetation 62 points were selected. The final accuracy for that class is 96%. Urban class final accuracy is 84% with 90 points representing it. The major interference is due the industry, mines and quarry class which interfere with the urban class by more than 30%. For the bare soil and rock class the total of 63 points selected to represent that class. It interferes with crop land and natural vegetation class by 11% and this is resulting in a class accuracy of 84%. This reduces the total accuracy for the classification to 79%.

Table 1: Accuracy assessment for 1995.

1995	Water & Wet Land	Crop Land & Natural Vegetation	Urban	Industry, Mines & Quarry	Bare Soil & Rock	Total	Accuracy
Water & Wet Land	46	2	0	2	1	51	0.86
Crop Land & Natural Vegetation	3	60	2	0	7	72	0.96
Urban	0	0	80	24	0	104	0.84
Industry, Mines & Quarry	0	0	0	44	0	44	0.53
Bare Soil & Rock	3	0	8	4	55	70	0.84
Total	52	62	90	74	63	341	0.79

Accuracy assessment result for 2010 image represented in table (2). A total number of 315 points were selected for the assessment. Water and wet land class 39 points were selected. The final accuracy for the water and wet land class is 91 %. For the crop land and natural vegetation 58 points were selected. The final accuracy for that class is 89%. Urban class final accuracy is 93% with 92 points representing it. The industry, mines and quarry class final accuracy is 82%. For the bare soil and rock class the total of 64 points selected to represent that class. It interferes with crop land and natural vegetation class and the Urban class which reducing the class accuracy of 65%. This reduces the total accuracy for the classification to 84%.

Image classification

Figure (4) represents the classified images for the study area for the two investigated dates. Generally; for the year 1995 the area of the urban area was 988 km² and increased to 1582 km² in the year 2010 with change rate of 39.6 km² per year. New development areas have emerged during the investigated 15 years as well as the expansion of the existing ones. The highlighted areas by circles (1, 2, and 4) are

examples for urban expansion in the study area. There is a big difference in the density of urban inside each circle. Circle 3 representing an example of new developed area over the 15 years investigated.

Table 2: Accuracy assessment for 2010.

2010	Water & Wet Land	Crop Land & Natural Vegetation	Urban	Industry, Mines & Quarry	Bare Soil & Rock	Total	Accuracy
Water & Wet Land	36	1	0	0	0	37	0.91
Crop Land & Natural Vegetation	0	53	0	0	6	59	0.89
Urban	1	2	88	9	13	113	0.93
Industry, Mines & Quarry	1	0	3	53	0	57	0.82
Bare Soil & Rock	1	2	1	0	45	49	0.65
Total	39	58	92	62	64	315	0.84

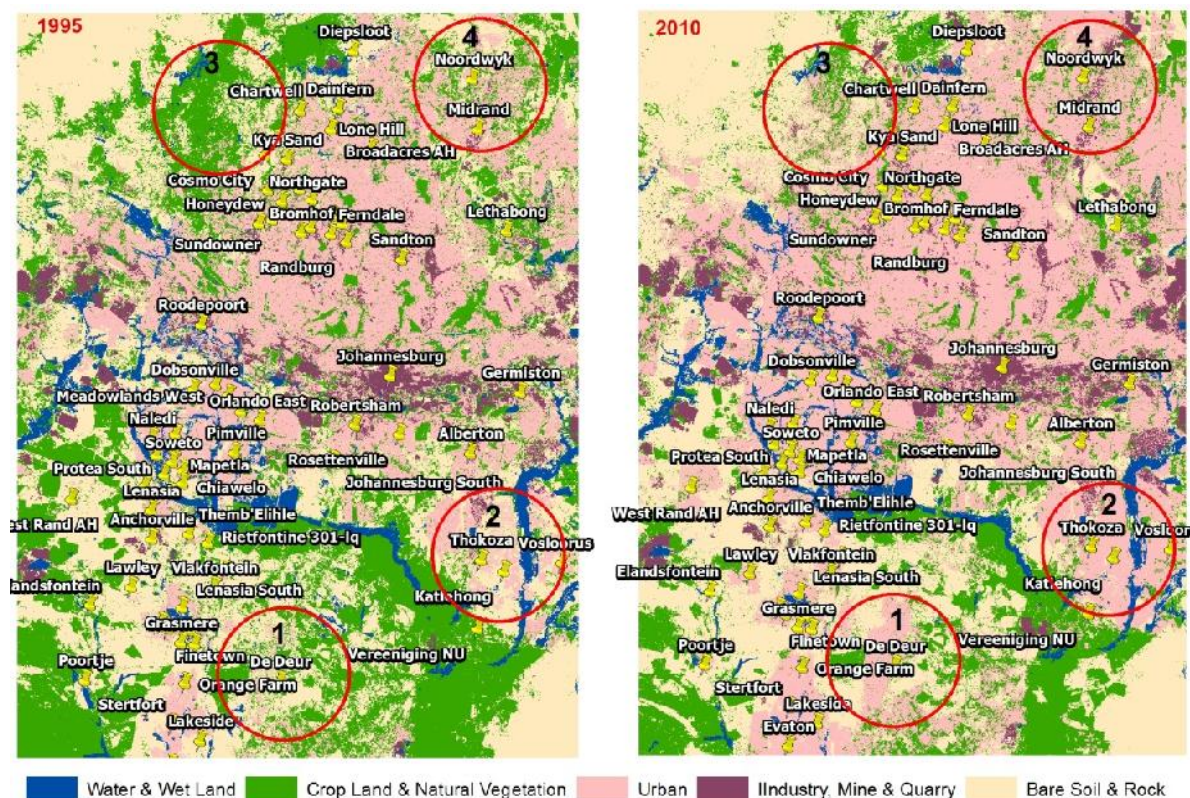


Figure 4: LULC maps for the study area for the two investigated dates.

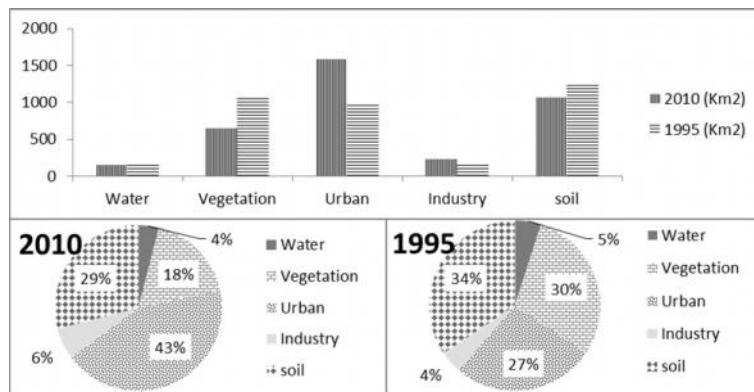


Figure 5: LULC changes between 1995 and 2010.

Change analysis

Table (3) and figure (5) summarizes the changes between the two investigated dates (1995 and 2010). Water and wet lands decreased by 19%, crop land and vegetation decreased by 40%, bare soil class decreased by 15% all of these in comparison to 1995 areas. Urban and industry, mines and quarry increased by 60% and 40%, respectively compared to their areal extents in 1995.

Table 3: Class areas and the differences between 1995 and 2010 images.

Class	2010 (Km ²)	1995 (Km ²)	Differences (Km ²)	%
Water	145	179	-34	-19.1
Vegetation	644	1075	-431	-40.1
Urban	1582	988	594	60.1
Industry	224	158	66	42.0
Bare soil	1062	1257	-195	-15.5
Total	3657	3657	0	0.0

Figure (6) explore the gains and losses in areal extents of the different classes. It is clear that the urban class has gained the most with no significant loss in areal extent (597, -2.89 km²). Industrial areas also gained but lost some of their extent (66, -0.2 km²). The bare soil and rock class has also lost and gained a substantial extent. (278, -473 km²). This could attributed to the difference in seasonality between the two images, hence the 1995 image captured in winter which is a dry season in Johannesburg and the study area, meanwhile the 2010 one captured in summer which has a lot of rains. The crop land and natural vegetation class decreased (-431 km²) due to the transformation to urban and industrial areas.

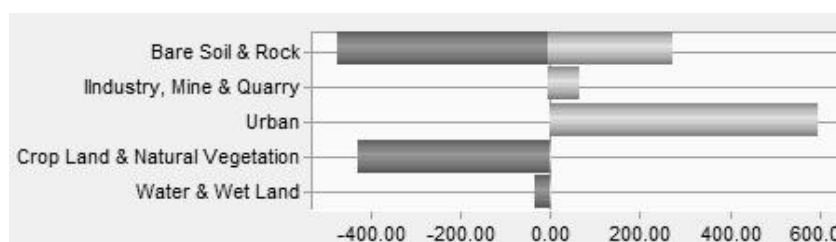


Figure 6: Gains and losses between 1995 and 2010.

In an attempt to understand the expansion of urban area, figure (7) shows the contribution of each of the classes to urban expansion that occurred during the 15 year period. It is obvious that; bare soil and vegetation classes are the main contributors to that expansion: 430 and 152 km² respectively. The Water and wet land class contributed to that expansion by only 12 km².

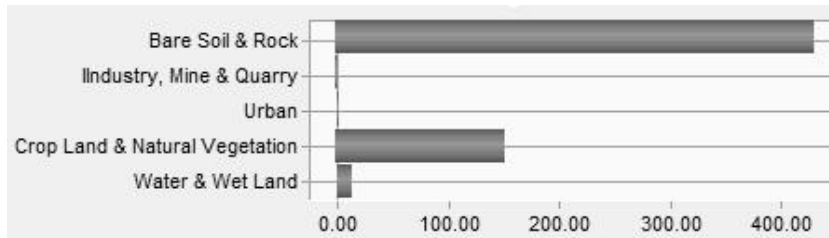


Figure 7: Contribution to net change in urban areas.

Figure (8a, b) shows the trend of urban expansion in the study area, and the spatial distribution of the occurred changes. Figure (8a) shows that the urban expansion in the eastern parts (Midrand and Noordwyk) of the study area is very rapid and also the south-western part area around Soweto (De Deur, Finetwon, Protea South and Lenasia). Figure (8b) maps the spatial distribution for the transformation accrued between different classes. The transformation of bare soils to urban areas is mainly concentrated on the periphery of the study area where the land is cheaper and the facilities are limited, meanwhile the transformation from vegetation to urban much noticed inside the urban communities and it is in small patches compared with the bare soil.

Modeling urban expansion

For modeling urban expansion the first step was to produce transition probability maps based on the detected changes and trend. In producing these maps the distance from roads, existing urban areas, the DEM and slope were taken into consideration. From the change analysis results; it was evident that two main significant changes have occurred in the study area i.e. the transformations of vegetated areas and bare soil to urban forms. Therefore in the prediction process; only these two transitions were taken into consideration.

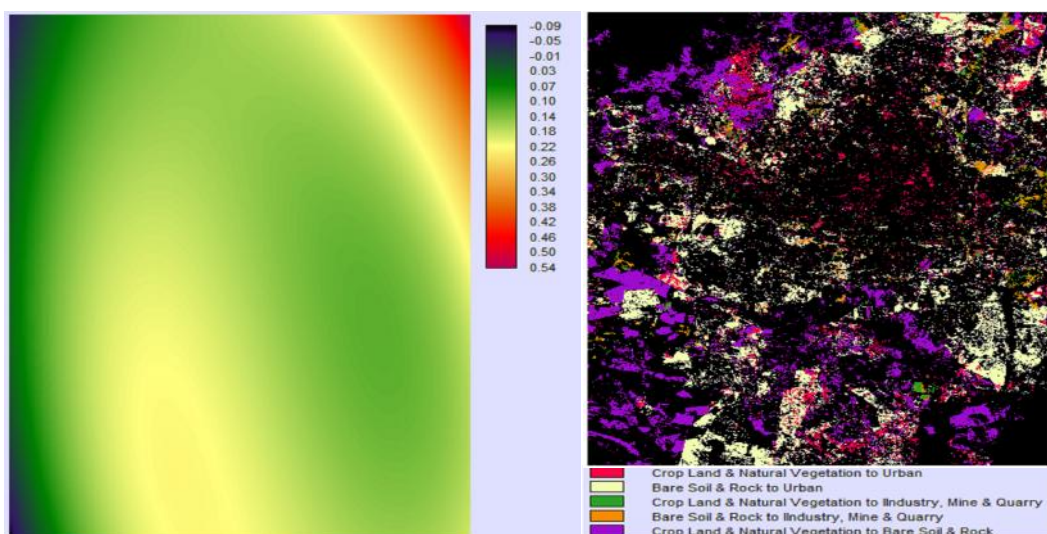


Figure 8: a) urban trend in the study area, b) main changes between 1995 and 2010 in the study area.

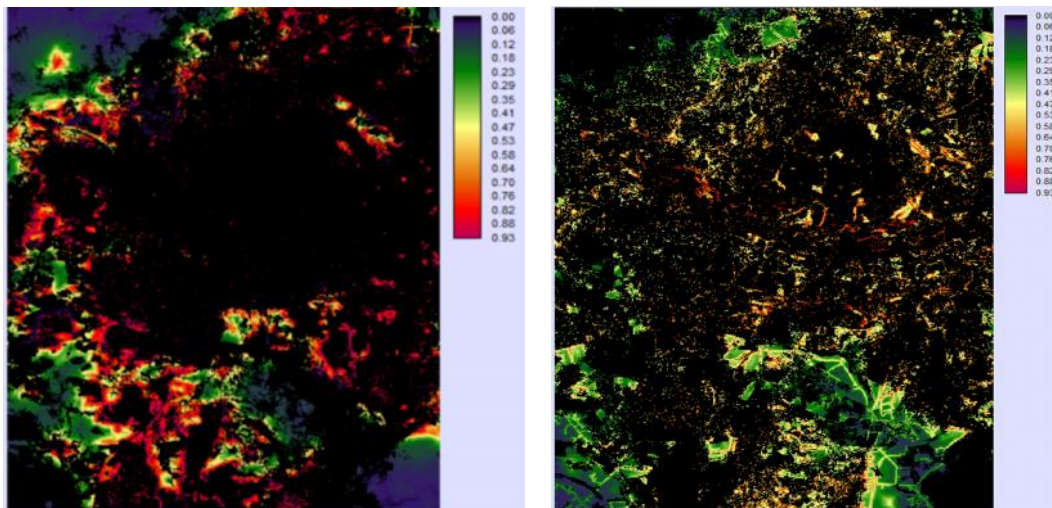


Figure 9: Probability transition (a) bare soil to urban, b) vegetation to urban.

Figure (9a, b) illustrates the probability of transition for the two modeled transitions in the study area. The probability of transition of bare soil is higher than that of vegetation and this may be attributed to vicinity to the roads and existing urban areas.

Change prediction results

Cellular automata model embedded in IDRISI software was applied to predict the urban expansion based on the produced transition probabilities. Figure (10) represents the forecasted land cover of 2030. The urban area will be increased by 600 Km² in 2030. Bare soil contributes to that change by 450 km² whereas 150 km² will be contributed by vegetated areas. Figure (11) shows the spatial distribution of the changed areas from bare soil and vegetation to urban.

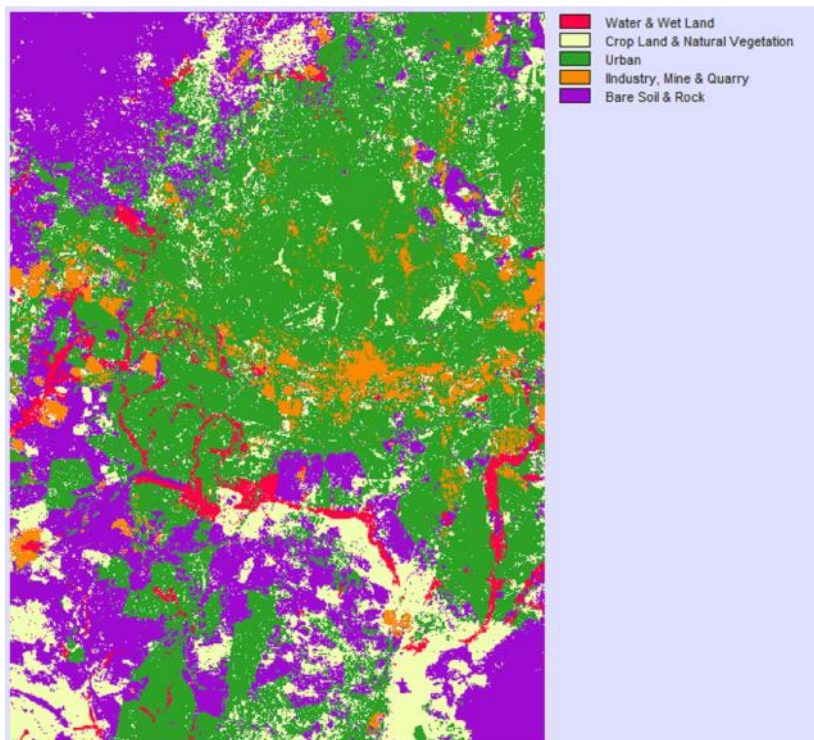


Figure 10: predicted land cover for 2030.

Although model validation was not carried out for the year 2030, the same model (i.e. same transition probability maps) was run for the year 2013 and the resultant land cover was compared with a 2013 Landsat 8 image. The model produced accurate results in forecasting the new areas within the urban area itself. . However, the model produced less accurate results for the new development areas.

Conclusion

This study assessed and modeled the trend of urban land cover changes in the study area using an integrated approach including GIS, RS, and modeling tools. The area experienced extensive conversion to urban land cover over the 15 year period (1995-2010). The results indicate that urban growth may continue to expand further into the future (2030), and might have certain impact on land resources, unless some careful planning and management are implemented.

For the transformation of vegetation to urban it was noticed that it occurs inside the urban communities. It comes on the share of the green area inside the urban area which has a hazardous impact on the environment and health of the habitants in these areas. In addition to that it overloads the facility exist in the area.

Cellular automata have been shown to be successful in capturing complexity with simple rules. However, there are many uncertainties with the technique and more research is required for adapting it better to an urban context. Future work should consider model validation and apply an advanced modeling approach that would allow for long-term accurate simulation.

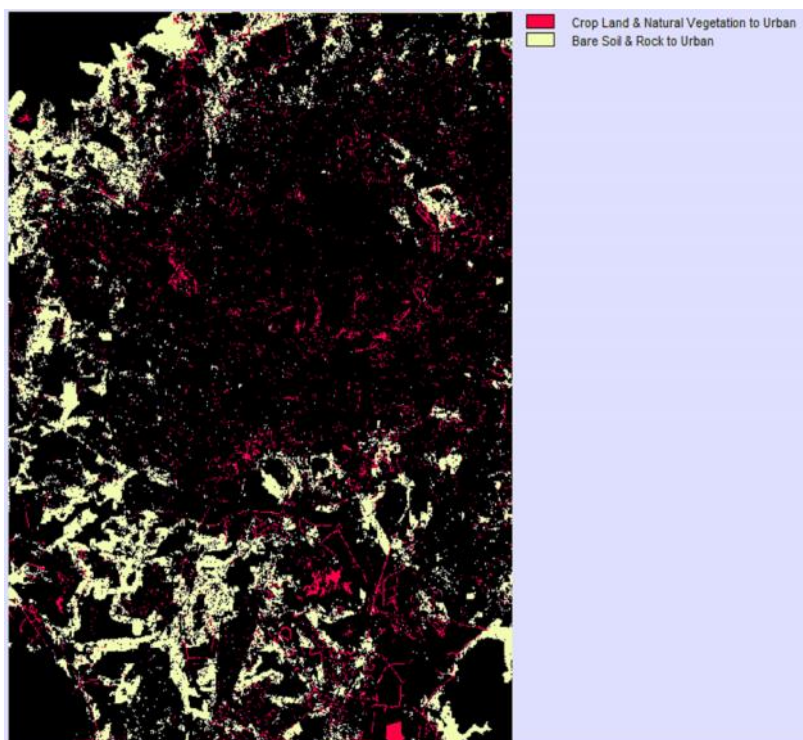


Figure 11: Spatial distribution from bare soil and vegetation to urban.

Acknowledgement

Authors would like to acknowledge the department of Geography, environmental management and energy studies, faculty of Science, university of Johannesburg for

the financial support and technical guidance and assistance for the work done in that research.

Authors would like to thank the IGU conference for accepting this paper as an oral presentation. Also Authors would like to thank GCRO Staff due to their helpful cooperation and providing advice, data and useful information used in the study.

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Impact of post-apartheid urban spatial planning in South Africa: A critical reflection on intentions and outcomes

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Abstract: The urban spatial planning policy framework and associated implementation tools in South Africa have undergone fundamental changes since the onset of the democratic era in 1994 and a range of policies and planning instruments have been introduced in response to the challenges of urban restructuring. The effectiveness and influence of these measures are however increasingly being questioned and there remains a surprising paucity of empirical evidence to evaluate the impact of these policies and plans on urban form. The aim of this paper is to establish whether the principles of integration, compaction and densification as articulated in the Spatial Development Frameworks in a sample of eight cities represent focal points of increasing densities and higher levels of spatial land-use mix patterns. The empirical analysis applies a range of urban density and land-use diversity indicators to evaluate changes between 1994 and 2011. The results indicate that the principle of increasing population densities achieved some measure of success between 1996 and 2011. However, the ideal of a focused increase in population densities within a clearly defined structure of nodes and corridors only achieved very modest successes. The results also indicate no significant changes in the overall levels of land-use mix between 1994 and 2010. Areas that did experience increases in land-use mix values show only limited correlation with the focus areas defined in the Spatial Development Frameworks. The achievement of the overall urban restructuring goals of integration, compaction and densification will require further refinement of the content of Spatial Development Frameworks. A specific requirement will be a clear definition and common understanding of the ideal mix of 'appropriate land use' in mixed-use zones or nodes at different locations and on different scales within cities and clearly defined guidelines for achieving densification in defined focus areas.

Introduction and Background

The unique elements of the structure and morphology of South African cities are one of the most visible and lasting legacies of the planning ideology during the apartheid era and its characteristics have been well documented (e.g. Simon, 1989; van der Merwe, 1993; Maylam, 1995; Christopher, 2001; du Toit, 2007). The resulting structural inefficiencies such as unequal access to economic and social opportunities, poorly located lower income settlements, and insufficient public transport is also widely acknowledged (Drakakis-Smith 1992; Maylam 1995; Boraine *et al.*, 2006; du Toit 2007). The structure of South African cities and towns have probably been most profoundly influenced by the period referred to by Harrison, Todes and Watson (2008) as 'high apartheid', from the late 1940s to the early 1970s, when influential planning policies and instruments such as the Group Areas Act were conceived and implemented (Mabin 1992). In response to these challenges some influential thinking emerged during the 1980s, with the most renowned being Dewar and Uytendogaard's *South African Cities: A Manifesto for Change* (1991). They argued that "A central pre-condition for the achievement of high-performance urban environments is to compact the form of the city..." (1991, p.43) and "The multifunctional use of space and facilities is not only desirable: it is economically essential," (1991, p.59). They also identified increased densities and the integration of urban activities and land uses as central amongst the required conceptual

changes for the transition of South African cities onto a more positive urban developmental path. These principles have subsequently given shape to the earlier versions of legislation (such as the Development Facilitation Act of 1995) to guide the spatial content of planning in South Africa. Central to this emerging new spatial policy framework was the introduction of Spatial Development Frameworks (SDFs) for cities as an instrument for giving spatial expression to the developmental vision and priorities of municipalities. These SDFs replaced the traditional guide plans and structure plans that for many decades formed the backbone of the forward planning process and functioned as the primary tool for guiding the spatial development patterns of South African cities and towns. The concepts of functional integration and a more efficient urban structure through appropriate densification were later also included in the official guidelines for the development of SDFs (Republic of South Africa, 2011a, p.21) as part of the basic principles of good spatial planning practice.

The effectiveness and impact of urban spatial planning policy and instruments in the post-apartheid era and its impact on restructuring South African cities are however increasingly being questioned. Robins (2002, p. 666) expressed the view that, despite concerted planning efforts aimed at desegregating the apartheid city, the “everyday socio-spatial legacies of apartheid continue to be reproduced”. Official policy documents also share these concerns and the diagnostic reports preceding the National Development Plan 2030 (NDP) identified three areas of specific concern: very low overall densities, an inverted density gradient with the highest densities in pockets of low-income settlements along the periphery, and the spatial fragmentation of the labour market which disperses available work (Republic of South Africa 2011c). The NDP also recognizes that although densities have increased in some urban areas and that partial regeneration of inner cities has been achieved, little progress has been made in reversing apartheid geography (National Planning Commission 2012). This apparent limited impact of spatial planning processes and plans has been attributed to a number of factors, including challenges with the institutional coordination and alignment of spatial planning processes (Turok and Parnell, 2009; Republic of South Africa, 2011b), the limited integration of spatial planning with infrastructure and capital investment (Harrison, Todes and Watson, 2008; Todes, 2008), and a lack of understanding of the space economy of South African cities (Serfontein and Oranje, 2008; van Huysteen *et al*, 2009).

Despite the fact that the concepts of “compaction”, “densification” and “integration” have been part of the South African spatial planning nomenclature since 1994 there remains a surprising paucity of comprehensive cross city comparative empirical evidence to evaluate the changes of South African city structure over this period. Although the official guidelines for the formulation of Spatial Development Frameworks (Republic of South Africa, 2011a) identified the need for monitoring spatial form through the application of key performance indicators, no clear guidelines or specific spatial statistical indicators are provided. This suggests the need for a much stronger analytical and technical basis for spatial planning than has generally been the case up till now (Todes, 2008). The focus of this paper is thus to critically reflect on the influence of the new generation spatial policy and planning instruments by analyzing changes in density and land use mix patterns through the application of a range of indicators in eight South African cities.

Approach and methodology

The overall aim of this paper is to establish whether the principles and spatial structural elements of SDFs represent focal points of increasing densities and higher levels of spatial land-use mix patterns. Due to the complex nature of urban growth management strategies and spatial plans, it is difficult to isolate the impacts of any one instrument or to answer the question of which specific instruments of an urban growth management programme are connected to specific urban form changes (Song and Knaap, 2004, p.223). The evaluation thus has to consider both urban density indicators such as built-up areas, residential land use, land consumed by urban expansion, population density, and urban density (Kasanko *et al.*, 2006), as well as land use diversity indicators reflecting the spatial scale, composition and manner in which a variety of land uses interact (Cervero and Kockelman, 1997; Douglas, 1998).

The availability of appropriate data and the delimitation of urban areas are two of the most fundamental aspects influencing comparative urban studies and models of density and land use mix (Coombes and Wong, 1994; Antrop, 2004; Guerios and Pumain, 2008). The lack of a common set of land-use data for different cities at a similar level of detail and for the same multiple time periods is a contributing factor to the paucity of comprehensive multi-year and cross-city analysis of urban form and structure in South Africa. The criteria of data availability and comparability were therefore key considerations in the selection of indicators from the potential candidates available and the selection of cities for inclusion in this study. The eight cities selected for analysis purposes thus include the four largest metropolitan areas of Johannesburg, Cape Town, Durban (eThekweni) and Pretoria (Tshwane), as well as four smaller intermediate-sized cities of Bloemfontein (Mangaung), Pietermaritzburg (Msunduzi), Nelspruit (Mbombela), and Witbank (eMalahleni).

The latest available set of land-use data from GeoTerraImage (2012) was the only available source that satisfied the criteria of availability and comparability, with data for periods ranging from 1993 to 2010 available for a number of cities. The Building Based Land Use©™ dataset contains buildings, structures and other area specific land uses as identified and mapped from high resolution orthophoto's as point data. The land uses are mapped using manual image interpretation techniques and classified into a standardised 70 class land use classification using supplementary datasets and fieldwork. This data undergoes extensive quality control and validation to provide accurate and detailed land use for selected urban areas within South Africa. Two data sets were used in each city: one as close as possible to 1994 and one for the most recent time period as close as possible to 2011 to enable comparison and use of the latest 2011 census data. Enumerator Areas (EAs) represent the smallest unit of spatial analysis used for census purposes, and were deemed an appropriate unit of spatial analysis for both population and land use data. The land-use data was aggregated to EA level for the purposes of spatial and statistical analysis and resulted in a 13 category land use classification for each EA within the eight selected cities. To account for the modifiable areal unit problem (where larger neighbourhoods are prone to more land-use types than smaller ones) enumerator areas in excess of 100ha in size (mostly sparsely populated) were excluded from the statistical and spatial data analysis of land use patterns. The 1996 and 2011 census population figures at EA level was used for calculating population related indicators. In the metropolitan areas of Johannesburg, Cape Town, Durban

and Pretoria the analysis covers the entire municipal areas of jurisdiction. In the case of Bloemfontein, Pietermaritzburg, Nelspruit and Witbank, the municipal area consists of a dominant urban core, as well as a number of smaller towns and/or dense traditional settlement areas scattered across the jurisdiction of the municipality. In these four cities, only the urban core areas were included, and not the isolated and scattered settlements.

The level of detail provided in the overall metropolitan or municipal-level spatial plans of the selected cities differs widely and ranges from only broad conceptual indications to more refined proposals aligned with cadastral entities. In cities where the boundaries of the corridors and nodes were clearly defined, these boundaries were used for the purposes of spatial analysis. In those cases where the nodes and corridors were only conceptually indicated, the guidelines for Spatial Development Frameworks (Republic of South Africa, 2011, p.21) were used as a point of departure, using a distance of 1km around nodes to implement the principle of economic and functional integration and a distance of 500m either side of the primary road defining the activity corridors.

A comparative analysis of density patterns and the influence of spatial plans and policies

Three broad types of urban density indicators can be distinguished: population density measures, built-up densities and form, and the evolution of urban spread over time. Population density measures are regarded as the most common measure of urban form (Burton, 2002; Guerios and Pumain, 2008) and its strength is the relative ease to obtain data and the useful baseline it provides for comparative cross city analysis. These measures often take the form of exponential or power functions based on the principle of a continuous gradient of decreasing built-up or population densities (Bertaud and Malpezzi, 2003). A shortcoming of traditional density measures is its sensitivity to methodological issues around the delimitation of urban areas and administrative boundaries and its inadequacy for describing spatial variation of intensity within a given urban area. The ability to critically reflect on overall urban density patterns thus require that the patterns and changes in both population and the physical footprint of the cities be understood. The potential influence of the key spatial planning concepts and principles on urban density patterns also requires that the selected indicators be applied at both an overall city level, as well as to the SDF focus areas only.

The total population of the eight cities forming part of the study increased from 10.3 million in 1996 to 15.5 million in 2011, representing a total growth of more than 50%. The population growth between 1996 and 2011 in all eight cities exceeded the growth of rate of the urban development footprint over the period 1994 to 2010, and should theoretically imply an increase in the overall net density (see Table 1). A comparison of the total overall city level population growth rate and the population growth in the SDF focus areas reveals that the city level population increases have exceeded the figure of the SDF focus areas in all cities except Cape Town. Moreover, in the case of Bloemfontein and Pietermaritzburg only limited population growth took place within the SDF focus areas. A comparison of the net population density at overall city level compared to the densities within the SDF focus areas however indicates that the 2011 population densities within the SDF focus areas in six of the eight cities (Bloemfontein and Pietermaritzburg being the only exceptions) were higher than the city level population densities. These densities in the focus

areas partially reflect historical urban development patterns and are not necessarily indicative of the influence of spatial policies and principles since 1994. A comparison of the change in population densities between 1996 and 2011 within the SDF focus areas and that of the overall city shows a somewhat different picture. Only Cape Town, eThekweni and Nelspruit experienced higher population density increases within the SDF focus areas compared to the city level figures. Although the population densities in the other five cities did also increase somewhat within the SDF focus areas, these increases were lower than the comparative city level figures and represent only very modest increases ranging from 1 person/ha in the case of Pietermaritzburg to 8.1 persons/ha in Tshwane.

These results imply that the principle of increasing overall population densities achieved some measure of success between 1996 and 2011. However, the concept of limiting the expansion of the physical footprint of cities and a focused increase in population density within a defined structure of nodes and corridors only achieved very modest successes. This is also clearly depicted on Figures 1 and 2 which reflect a spatial analysis of population density change relative to the SDF focus areas.

A comparative analysis of land use mix patterns and the influence of spatial plans and policies

The notion of mixed land use implies the location of compatible land uses in close proximity to one another. Fulford (2010, p.130) describes mixed-use development as "... Residential, employment and leisure uses brought together where feasible...". Measures of land-use mix can broadly be classified into three categories: accessibility (or proximity), intensity (or magnitude), and distribution pattern (Song and Rodriguez, 2005). For the purpose of this analysis one intensity based and two pattern based land use mix indicators were applied (see Table 2).

The results indicate no significant changes in the overall levels of land-use mix between 1994 and 2009/10 in any of the eight cities. In most cities, the changes as measured by the selected indicators were marginal, with the most substantial increase in the intensity of land-use mix occurring in Johannesburg. These findings are consistent with the results of some international studies of land-use mix. Frenkel and Ashkenazi (2008) in a comparative study of 78 urban settlements in Israel found that the composition of the land uses at an overall city level did not change significantly over a period of nearly two decades between the mid-1980s and 2002. Studies in the United States also found that there has been little change in the zoned or actual mix of land uses in neighbourhoods over time (Song and Knaap, 2004; Song, 2005).

It can be hypothesised that if the identified SDF spatial principles and concepts in support of increased levels of land use mix within defined nodes and corridors achieved meaningful results, it would result in higher average values within these SDF focus areas relative to the overall city wide figures. Secondly, and more importantly, the intuitive expectation is that the land-use mix trajectories between 1994 and 2009/10 within the defined SDF focus areas will show higher levels of change compared to the total overall trends of each city. The information portrayed in Table 3 confirms the first element of the hypothesis and confirms higher levels of land-use mix within the SDF defined spatial focus areas. In seven of the eight cities the values for the intensity-based indicator (percentage of EAs containing four or more land-use types) within the defined focus areas are higher than the comparative

figures of the entire city, while the values of the pattern-based indicators (land-use dominance and land-use mix indices) are higher in all eight cities.

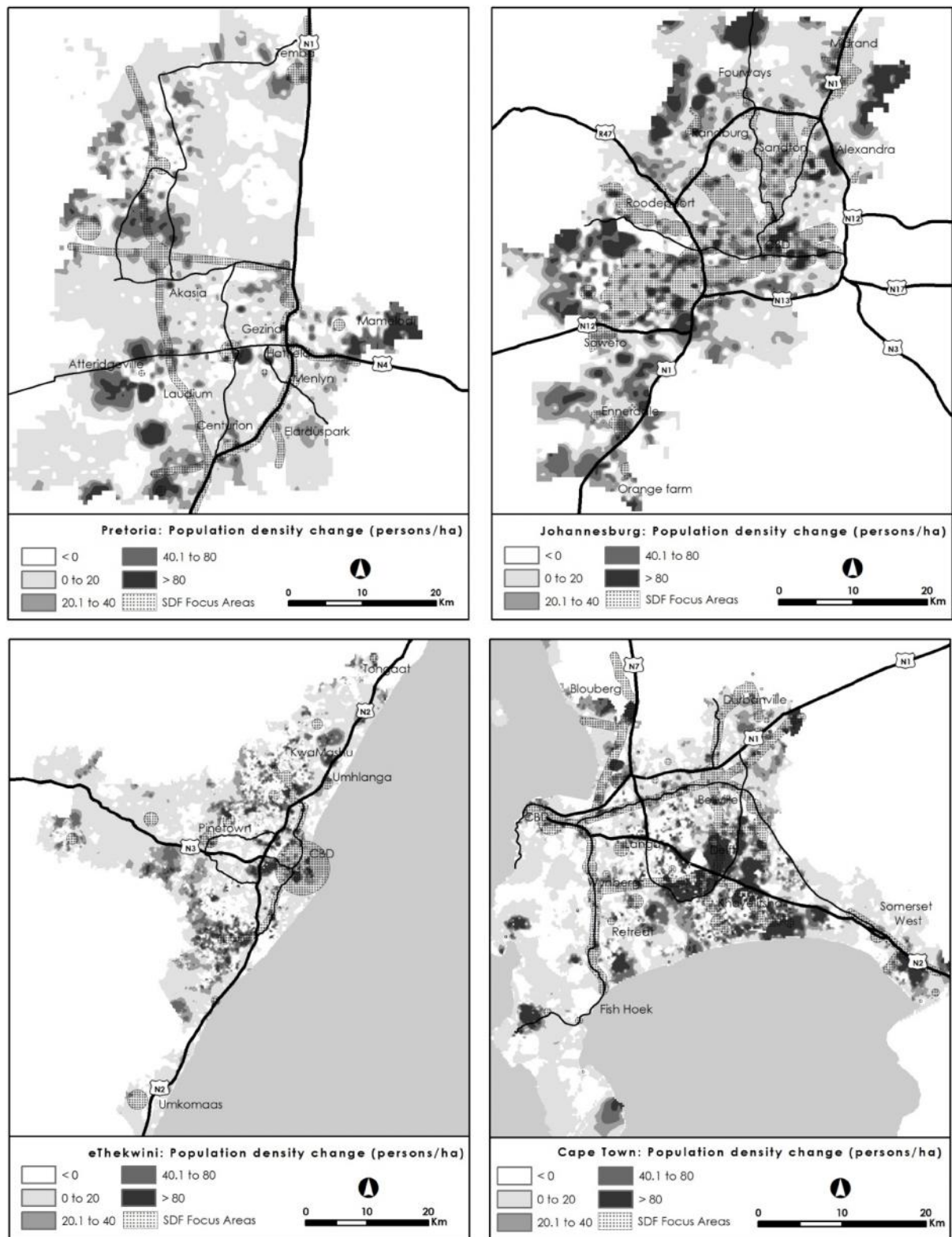


Figure 1: Population density change in Pretoria, Johannesburg, eThekweni and Cape Town between 1996 and 2011.

Table 1: Comparative urban density indicators

City	Urban footprint growth (%) 1994-2009/10	Population growth 1996-2011 (%)		Net density 2011 (persons/ha) ¹		Net density increase 1996 to 2011 (persons/ha)	
		SDF focus areas	Total city	SDF focus areas	Total city	SDF focus areas	Total city
Cape Town	11.9	49.4	47.1	85.2	68.1	23.2	16.3
Johannesburg	39.9	30.6	76.8	69.6	55.0	3.0	11.5
Tshwane	26.3	61.3	68.3	45.1	41.2	8.1	10.3
eThekweni	22.0	36.0	52.8	56.6	48.5	10.0	9.8
Bloemfontein	30.4	7.6	62.0	58.2	45.9	2.8	8.9
Pietermaritzburg	10.2	6.7	85.0	26.5	29.4	1.0	11.9
Witbank	34.9	58.9	99.6	36.9	61.3	6.6	19.9
Nelspruit	21.7	122.5	127.8	35.3	25.8	16.0	12.0

¹ Based on extent of urban development footprint and not administrative boundaries

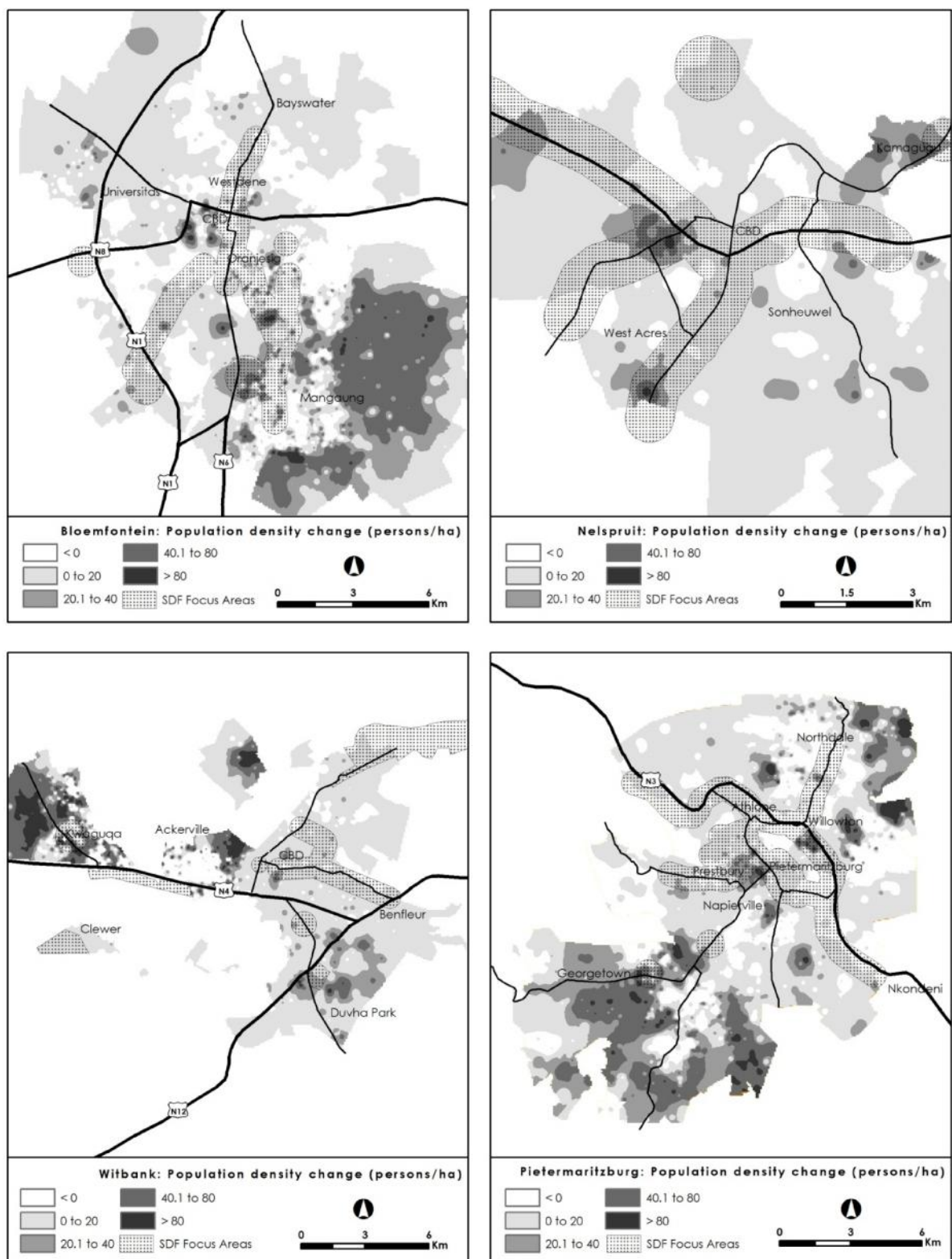


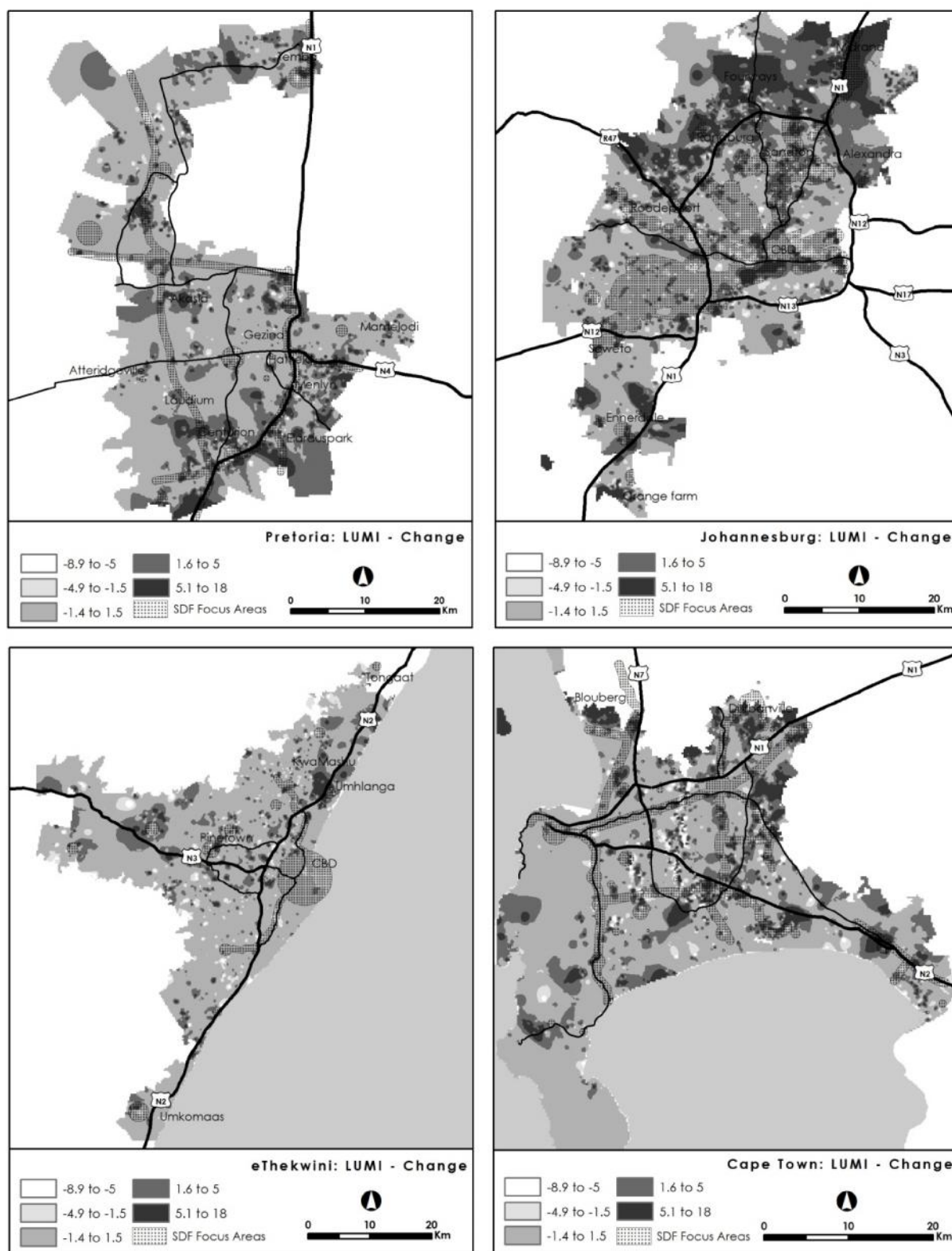
Figure 2: Population density change in Bloemfontein, Nelspruit, Witbank and Pietermaritzburg between 1996 and 2011.

Table 2: Selected indicators of land use mix.

Indicator	Rationale	Unit of measurement	Interpretation
% EA's containing four or more land uses	Provides indication of the proportion of spatial units containing one third of all potential land use classes used in the study	Percentage of EA's (0 to 100)	Higher percentages are indicative of urban areas characterised by a larger proportion of units of moderate levels of land use mix
Land use dominance index	A measure of the level of dominance by the main land use category	Index on a scale of 0 to 100. Expressed as the % of the dominant land use in any given unit of analysis relative to the % of that use if the number of land uses were equally present in that unit of analysis.	Values = 0 indicate existence of only one land use Values closer to 0 indicate larger degrees of dominance by the main land use category Values = 100 indicates perfectly equal distribution between all land use categories present within unit of analysis
Land use diversity index	A combined measure taken cognisance of both the number of land use types and the equality of distribution of those land use types as expressed by the land use dominance index	Index on a scale of 0 to 100 expressed as the product of the number of land uses and the dominance index relative to the theoretical perfect equality value if all land use categories were present in the unit of analysis in equal proportions	Value = 100 if all land use categories were present in perfectly equal proportions. Values closer to 100 indicate higher levels of land use diversity and closer to 0 less diversity (both in terms of number of land uses and dominance patterns).

However, the results reflected in Figures 3 and 4 and the levels of change between 1994 and 2009, outlined in Table 3, do not support the second element of the hypothesis, and reveal instead that the areas with the most significant increases in land-use mix values do not coincide with the focus areas defined in the SDFs. Most of the cities did not experience any increases in land-use mix in these focus areas that are notably higher than the overall city-level figures. Only in the case of the intermediate-sized city of Witbank is the increase in land-use mix within the defined spatial focus areas significantly higher than the city-level figure. Amongst the four metropolitan cities, only Johannesburg showed increases in land-use mix in the

spatial SDF focus areas in excess of the overall city-level figures. This trend is also reflected spatially in Figures 3 and 4, which clearly illustrate the levels of correspondence between the land-use mix change patterns, and the key elements of



the SDFs.

Figure 3: Land Use Mix Index change in Pretoria, Johannesburg, eThekweni and Cape Town between 1994 and 2009/2010.

Table 3: Comparison of aggregate city level indicator values with indicator values in SDF focus area for land-use mix

City	Percentage EAs $\geq$ 4 land uses						Mean Dominance Index						Mean LUMI value					
	Entire city			Within focus areas			Entire city			Within focus areas			Entire city			Within focus areas		
	94	09/10	Change	94	09/10	Change	94	09/10	Change	94	09/10	Change	94	09/10	Change	94	09/10	Change
Cape Town	21.6	20.4	-1.2	28.1	25.2	-2.9	26.5	27.5	1.0	32.0	32.0	0.0	6.7	6.9	0.2	8.6	8.4	-0.2
Johannesburg	15.2	18.2	3.0	16.8	21.8	5.0	23.9	26.0	2.1	29.2	30.4	1.2	5.5	6.2	0.7	6.7	7.4	0.7
Tshwane	14.4	13.4	-1.0	12.9	12.9	0.0	22.6	23.1	0.5	26.2	27.8	1.6	5.2	5.3	0.1	5.8	6.1	0.3
eThekweni	18.0	18.6	0.6	28.2	28.6	0.4	25.9	25.6	-0.3	36.3	35.9	-0.4	6.2	6.2	0.0	9.3	9.2	-0.1
Bloemfontein	5.1	4.8	-0.3	8.6	8.5	-0.1	16.9	18.2	1.3	22.8	23.4	0.6	3.4	3.6	0.2	4.8	4.9	0.1
Pietermaritzburg	12.3	11.7	-0.6	31.9	33.1	1.2	19.1	19.3	0.2	31.5	31.0	-0.5	4.4	4.4	0.0	8.6	8.5	-0.1
Witbank	5.9	7.4	1.5	5.1	15.2	10.1	18.7	18.5	-0.2	22.7	25.7	3.0	3.8	3.9	0.1	4.4	5.9	1.5
Nelspruit	9.7	8.2	-1.5	8.0	8.6	0.6	18.3	18.5	0.2	22.5	25.5	3.0	4.1	4.1	0.0	5.2	5.8	0.6

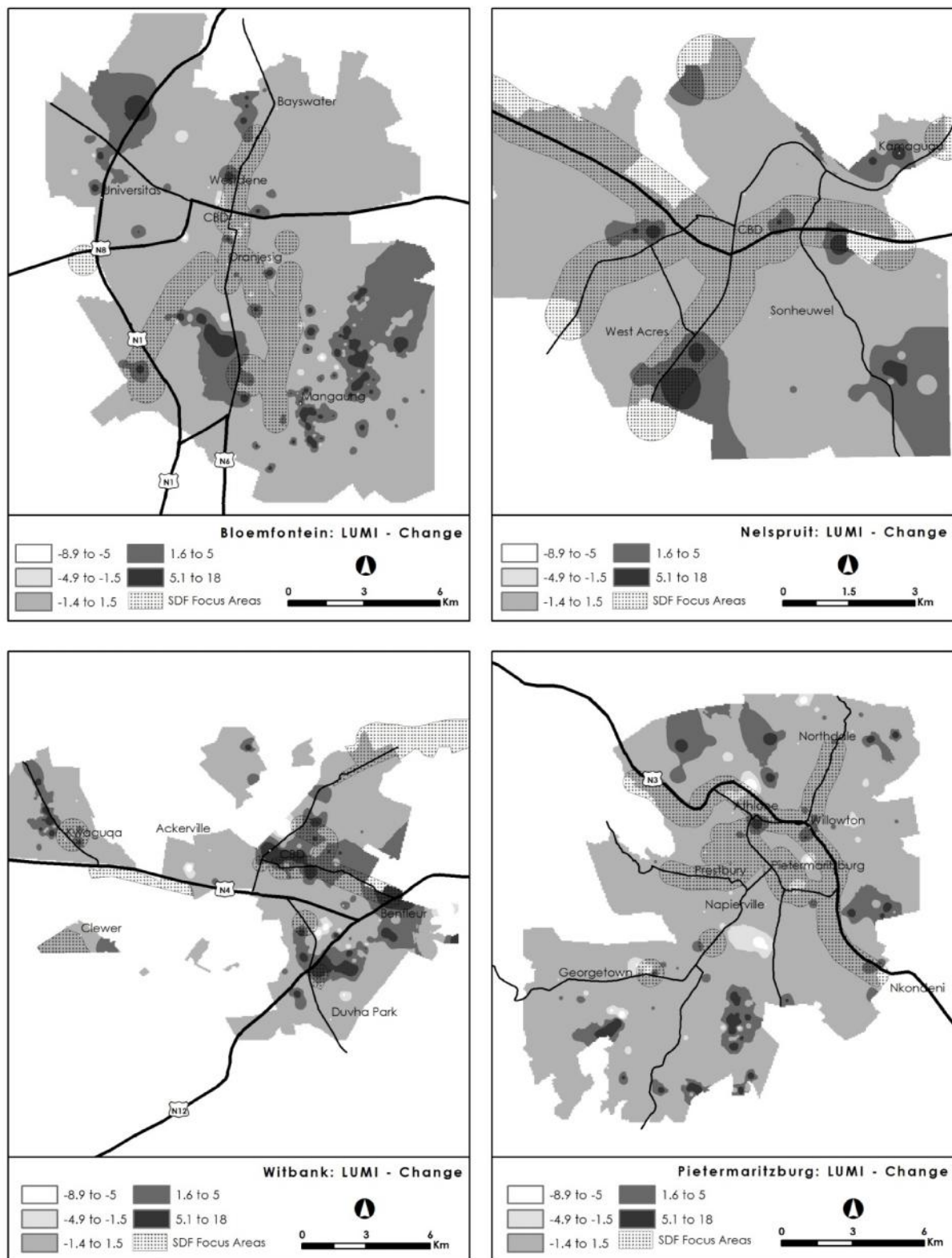


Figure 4: Land Use Mix Index change in Bloemfontein, Nelspruit, Witbank and Pietermaritzburg between 2009/2010.

Conclusion

The overall aim of this paper was to evaluate the changes in urban density and land use mix patterns in a range of South African cities and the potential influence of

spatial planning proposals on these patterns. The results confirm modest overall increases in densities which can partly be ascribed to the spatial policies and plans aimed at achieving more compact urban structures and higher densities. The overall net population density increased in all eight cities, ranging from an increase of 8.9 persons/ha in Bloemfontein to 19.9 persons/ha in Witbank. A comparison of the net population density at overall city level compared to the densities within the SDF focus areas also indicates that the 2011 population densities within the SDF focus areas in six of the eight cities (Witbank and Pietermaritzburg being the only exceptions) were higher than the city level population densities. A further comparison of the change in population densities between 1996 and 2011 within the SDF focus areas and that of the overall city shows a somewhat different picture. Only Cape Town, eThekweni and Nelspruit experienced population density increases within the SDF focus areas in excess of the city level increases. Although the population densities in the other five cities did also increase somewhat within the SDF focus areas, these increases were lower than the comparative city level figures and represent only very modest increases. These results imply that the principle of increasing population densities achieved some measure of success between 1996 and 2011. However, the concept of focusing population growth in a defined structure of nodes and corridors only achieved very modest successes.

Three key findings emanated from the land-use mix analysis. Firstly, there were no significant changes in the overall levels of land-use mix between 1994 and 2009/10 in any of the eight cities. In most cities, the changes as measured by the selected indicators were marginal, with the most substantial increase in the intensity of land-use mix occurring in Johannesburg. A second notable trend over this period has been the increase in land-use mix in historically low-income suburbs, traditionally typified by largely homogeneous residentially dominated land-use patterns. This may be indicative of the provision of a wider range of social and commercial facilities and amenities in these areas in the post-1994 era, resulting from both focused public-sector intervention and increased private-sector investors' confidence. Thirdly, when comparing the spatial structuring concepts applied in most SDFs (development or activity corridors, urban nodal structure and hierarchy, and mixed-use nodes or areas) the land-use mix indicators reveal generally higher levels of land-use mix compared to overall aggregate city-level figures, in both the intensity and the pattern-based indicators. The levels of change in land-use mix between 1994 and 2009/10, however, indicate that the areas with the most significant increases in land-use mix values show only limited correlation with the focus areas defined in the SDFs.

Despite some potential methodological challenges, the results presented in this paper provide a point of departure for debate and a more rigorous analysis of morphological changes in South African cities. The results suggest that spatial focus areas for population densification and intensified mixed land use is unlikely to achieve any significant local or overall urban level spatial restructuring by merely aligning these areas with historical development patterns. The results also suggest that the level and rate of impact in achieving a greater mix of land uses may be more readily achieved within historically marginalised townships, and that both densification and increasing land use mix in new and emerging corridors linking these areas to the broader urban structure and economic function. If the National Development Plan is to succeed in achieving more compact mixed-use development at selected focus areas within the urban structure, a clear definition and common understanding of what is the ideal mix of 'appropriate land use' in mixed-use zones

or nodes at different locations and on different scales will be required. Clearly defined guidelines for achieving densification in defined focus areas too. This will enable a normative evaluation of the levels of success of spatial planning instruments, based on a robust set of indicators as part of a spatial governance evaluation framework.

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Urban growth management best practices in the developed world: why it is different for the developing world

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Abstract: The notion of achieving a more compact urban form has gained popularity in the debate on the most sustainable urban form, and central to this theme the last century witnessed an evolution of an urban growth management discourse, as large cities trial different techniques towards achieving more sustainable urban forms. This paper explores the evolution of the urban growth management discourse and the lessons learnt thus far to arrive at what is considered to be current best practices. The objective is to illustrate some of the implications these practices present to developing countries and whether international urban growth management practice can offer meaningful solutions to developing governments and economies.

Introduction

Urban growth management has been amplified in spatial policy since the environmental and social costs of urban expansion became key issues for urban sustainable development (Prior and Raemaekers, 2007). A defining feature of 20th century metropolitan urban development in most of the world's largest cities is the dominance of low density suburban and peri-urban landscapes (sometimes referred to as sprawl). A crucial question is to what extent this conventional market-driven form of urban development is considered to be sustainable. The notion of achieving a more compact urban form has gained popularity in the debate on the most sustainable urban form, and central to this theme the last century witnessed an evolution of an urban growth management discourse, as large cities trial different techniques towards achieving more sustainable urban forms. This paper explores the evolution of the urban growth management discourse and the lessons learnt thus far to arrive at what is considered to be current best practices. The objective is to illustrate some of the implications these practices present to developing countries and whether international urban growth management practice can offer meaningful solutions to developing governments and economies.

The first generation: limits to growth

The first generation of urban growth management marks the earliest attempts at controlling the post-World War II industrialising city. The most popular tool in achieving said control was driven primarily by central governments at the time in the form of a demarcated strip of green/undeveloped land beyond which no further growth would be allowed (Horn, 2010). Greenbelts were usually implemented as tight bands of green space, either for permanent open space or for working landscapes around an existing urban area. The earliest greenbelts were established in the United Kingdom in the late 19th century as introduced by the Garden City pioneer – Ebenezer Howard. As part of the UK physical land use planning system and Town and Country Planning Act, promulgated in 1947, this country formalised the implementation of greenbelts with the primary aim of urban containment (Horn,

2010). The greenbelt approach was often complemented by the construction of 'new towns' (Jun, Myung and Hur, 2001) i.e. towns in which all aspects of development were determined before construction takes place. The emphasis within these towns was the limitation of size and density, limitation of automobile dependency, and that it had to be surrounded by a belt of undeveloped land or open space (Planned communities, 2001). The first New Town was established in England (Letchworth), and later the ideology spread to the United States with the establishment of Radburn.

A number of other European cities have also adopted the greenbelt approach (e.g. London, Copenhagen and Amsterdam). In Korea a greenbelt was established in 1971 around the entire city of Seoul in which construction was completely prohibited (Britz and Meyer, 2008). In this case five new towns were also constructed between 1989 and 1995 adding 330 000 housing units to the city and accommodating about 1.16 million people. San Francisco, Ottawa, Adelaide and Dunedin (New Zealand) have also implemented greenbelts in an attempt to curb urban sprawl. These cities have experienced varying degrees of success in curbing urban growth, and critics point to the fact that the implementation of a greenbelt, in many instances, encourages leap frog development. This leads to greenbelts ultimately acting as land reserves for future highways, where people living in leap frog developments need to commute very long distances to reach the inner city (Harford, 2007 and Memon, 2003). House builders, business and campaigners for affordable housing have long blamed the greenbelt as the epitome of restrictive planning policy, for a shortage of building land and resulting high property prices (Prior and Raemaekers, 2007). The UK planning profession has itself argued that the present policy is too inflexible (Prior and Raemaekers, 2007).

The second generation: some sticks some carrots

The second generation of urban growth management witnessed from the early 1970s onwards introduced a recognition that placing a limit on growth needed to be balanced with strategies to accommodate or at least deal with future growth. Paramount to this period was the decentralisation of growth management and a shift in planning processes generally from centrally planned government to more bottom-up planning where local authorities assumed more responsibility for spatial policy and therefore urban growth management.

Examples of this wave of growth management are seen in urban edges or urban growth boundaries (UGBs) as deployed in a number of states in the USA (Oregon, Iowa, California, Tennessee, Washington and Boston), cities in the UK, Sydney and Copenhagen (Simmie, Olsberg and Tunnel, 1992; Nelson and Moore, 1993 and Britz and Meyer, 2006). These edges or boundaries can be defined as institutional boundaries with the sole purpose of containing physical development and sprawl and re-directing growth towards a more integrated, compact and arguably efficient urban form. Together with such an edge strategies to ensure integration and compaction advocated to ensure the development of quality, well-maintained urban environments (Horn, 2010).

Another example of a second generation urban growth management approach is to be found in the Netherlands (VROM, 2001). Using very detailed information regarding occupation, economic development, the quantum of houses built, etc. over the last 25 years, projections are made by local authorities to accommodate the

natural population and economic growth for the planning horizon of 2030 (Horn, 2010). Cities and local authorities then apply a system of red and green contours; Red contours are boundary lines that remain in place for ten years and that demarcate the area around existing towns and cities within which all future urban development must take place. It is proposed that red contours should be supported by positive planning of what is to happen within the demarcated areas. Green contours demarcate natural, cultural and heritage areas within which urban development may not take place.

An Urban Service Boundary (USB) as witnessed in Minneapolis-St Paul since the early 1970s denotes the edges of an urban service area and is typically more flexible than an urban edge. It denotes a line beyond which a city has decided that its infrastructure, typically sewer, water and electricity should not extend, this implies that infrastructure must be in place before development is permitted.

In China, the central government attempts to control sprawl both from a supply and a demand side. From the supply side every person who converts agricultural land to another use has to recreate an equal amount of land for agricultural purposes. This is typically land that was previously developed for urban uses and idle land in rural areas. Secondly, in terms of a land quota system, every municipality is only allowed to convert a certain amount of land into non-agricultural uses.

A common critique on Urban Growth Boundaries relate to UGBs that increase price pressure on land within the boundary, causing home values in inner-city neighborhoods to rise, and ultimately leaving poor households to be displaced from such areas because they cannot pay required taxes, and forcing them to move further out of the urban area where affordable housing may or may not be available (National Association of Realtors, 2001). In effect, the UGB confers a market advantage on the owners of land within the UGB. Outside the UGB, it can be expected that the value of property will decrease because of the loss of its potential to be developed (National Association of Realtors, 2001).

The smart growth movement resembles the main components of the approaches of the second generation, albeit with a much more sophisticated emphasis on the creation of sustainable urban environments. Smart growth is first and foremost known as an American growth management theory. Growth is not to be stopped in its tracks, nor necessarily slowed down. The goal is rather to manage urban sprawl by prioritising intensification and mixed-use development, providing transportation alternatives and housing choices, and preserving natural heritage features, while still promoting targeted economic growth to reduce per capita consumption of land and energy, lower the cost of infrastructure and make transit more viable (Eidelman, 2010). Smart and sustainable growth is also a central priority presented in the European Commissions' communication Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth accepted by the other EU institutions as the new reform policy (Basse, 2010).

The third generation: wait a minute

Already gaining momentum during the second generation of urban growth management and becoming more vociferous during the last decade is the counter-discourse that a compact urban form is not the only way to nor does it imply sustainability. Beginning in the 1980s and increasing in popularity are various arguments against the combatants of urban sprawl and in favour of a more free-

market approach to urban growth. At the forefront of this discourse is Gordon and Richardson (1991) warning against nostalgia for the compact city. A paper by Gordon, Kumar and Richardson (1997) counters the compact city as ideal based on arguments relating inter alia to the following:

1. Evidence of a shortage/scarcity of land in the USA is misleading
2. Low-density settlement is the overwhelming choice for residential living
3. Based on this (low-density) consumer residential choice, high-capacity transit systems becomes unattractive and wasteful (of all resources utilised, including energy)
4. The traffic consequences of suburbanisation are benign
5. The economic and resources efficiency of compact development has never been adequately demonstrated
6. High-rise or concentrated settlement is costly and only worthwhile if transport or communications costs are high
7. The equity case for compact cities is weak – poor people are excluded from living in prime locations because of property prices, not because of urban sprawl.
8. The major countervailing force to these trends derives from the fact that in an age of increasingly mobile capital, cities (and their governments) must compete to survive.

This debate takes place against the background of continuing decentralisation of the world's large cities, a process viewed by some as so profound as to be labelled counter-urbanisation. Also, in response to the general rural protectionist lobby, there now seems to be a counterargument in favour of protecting urban areas. This is as yet poorly articulated, but may gather force. The concern manifest in complaints about "town cramming". Given the long-standing policy of urban containment in Britain, it is felt that urban intensification has produced congestion, loss of amenity, and a general lowering of urban quality of life, particularly in suburbs (Breheny, 2002).

Some researchers argue that an urban form that may improve matters and is unlikely to make them worse is decentralised concentration (Rakodi, 1997). Appropriate planning policies would therefore discourage dispersed low density residential areas or any significant development heavily dependent on car use; some degree of concentration though not necessarily centralisation of activities; integration of development with public transport facilities and the maintenance of moderately high densities along transport routes. This approach would promote the development of a number of suburban centres in a large urban area, which would be the focus of improved public transport systems, and would help to avoid the congestion, and hence high fuel consumption, associated with a single core (Breheny, 2002).

At a different scale of concentrated decentralisation is the spread of the so-called Edge Cities and edgeless cities and suburbanisation and regionalisation. Regionalisation includes not only edge city development but also closer relationships between long-time independent cities to form integrated regions, as in the Frankfurt-

Weisbaden corridor, the Ruhr, Silicon Alley and Randstad in Netherlands. Edge Cities refers to clusters of residences, businesses, commerce and recreation on an urban scale, removed from major central cities but related to them, whose independence in daily life from those central cities is in large part their reason for being (Jenks, Kozak and Takkanon, 2008).

The concept or phenomenon of polycentrism has become increasingly prominent within the current urban debate. It can refer to different scales of the built environment whether at the world, regional or city level, and has been characterised by a varied terminology – e.g. polycentric regions, polycentric urban systems, multimodal urban systems, urban networks or polycentric networks. “At the large, regional scale it has been argued that the polycentric mega city region is the new phenomenon that is emerging in the most highly urbanised parts of the world. It has been defined as a series of anything between 10 and 50 cities and towns, physically separate but functionally networked, clustered around one or more larger central cities, and drawing enormous economic strength from a new functional division of labour” (Jenks, Kozak and Takkanon, 2008).

Some implications for the developing world

In developing countries, despite the lack of basic amenities and infrastructure, human agglomerations still attract population from the surrounding regions. As a consequence, the urban population is increasing in developing countries at a much faster rate than in the rest of the world, contributing to the augmentation of existing problems. As noted by Rogerson (1989), the cities of the developing world are subject to what has been called “expanding urbanisation” as opposed to “mature urbanisation” experienced in developed countries. In these immense urban agglomerations, which often show a dramatic sprawl coupled with an explosive population growth, the environmental and social consequences are disastrous. Serious sustainable urban planning measures are usually not coupled with national, regional and local level policies as sustainability in most cases means survival. As observed by Jenks, Kozak and Takkanon (2008) the mega-cities of the Third World (Mexico City, Sao Paulo, Mumbai) do not simply follow the development path of cities in the more technologically developed worlds; they are not simply at an earlier stage in a common path of development, but rather are the products of their own specific historical developments coupled with the strong influence of their positions within the world of globalisation, threads of colonialisation, uneven development, competition, division of labour and exploitation.

The current urban transition differs from the experience of Europe and the United States in the first half of the 20th century in a number of important respects (see Hall and Pfeiffer, 2000 and Sassen, 2001). First and most importantly, the scale of change and population growth is unprecedented. Second, urbanization is occurring at a rapid (though not although unprecedented) pace. Third, urbanization is now occurring more rapidly in countries that have relatively lower levels of per capita income and in the case of Africa, urbanization appears to have become partially decoupled from economic development. (Cohen, 2004)

If we turn to specific conditions in the developing world, what do the aforementioned approaches to growth management and the lessons learnt imply for governments and economies in a developing world context, and do they offer any meaningful solutions to the specific problems encountered in such context. The discussion in this

paper formed the precursor to a debate on urban growth management in developing countries where the following realities should form the basis of further research in this regard:

1. Even though it is noted that the inherent structural weakness of capitalist economic systems is that it requires some level of state intervention to secure stability in profit accumulation (Prior and Raemaekers, 2007)., the reality is that capitalist economies can survive and provide to its constituents albeit with shortcomings. Most developing nations however have socialist economies, where state intervention is not only recommended, but indispensable. An enormous responsibility is assumed by the state in these countries to ensure an equitable distribution of resources to its population. Any approach relying solely on market-decisions will therefore be inappropriate.
2. Another challenge to many developing countries, specifically in Africa, is the fact that planning processes adapted from models outside developing countries leads to over-complex planning processes, often driven by state bureaucracies. The implementation of these processes is also constrained by the resources and delivery capacity of existing planning structures. In addition, plans and policies are often not respected by those who approved them in the first place, resulting in the premature abandonment of or radical changes to plans before given a chance to achieve their intended objectives (Rakodi, 1997).
3. The most prominent success stories of urban management in developing countries are closely correlated with countries that recorded impressive national economic growth performances (e.g. Bogota, Columbia) (Rogerson, 1989). On the contrary, many authors observe the inadequate economic development experienced in developing countries to adequately cope with the vast growing population, and therefore, counter arguments for allowing market-autonomy in all economic decision-making, or in other words any economic growth is good economic growth, gain popularity.
4. The greenbelt and similar approaches have long been blamed as the epitome of restrictive planning policy resulting in a shortage of building land and high property prices (Prior and Raemaekers, 2007). Given the growing numbers of population and accompanying housing shortages this may be a risk that governments in developing countries just aren't prepared to take.
5. Dewar (2009) in Jenks and Burgess alludes to many developing countries already experiencing exorbitantly high densities in urban centres. In such instances, policy that aims to increase urban densities would not make sense.
6. Greenbelts/urban edges have been criticized as contributing to leapfrog development (Harford, 2007) and thereby exacerbating long commuting distances. In developing countries, where new migrants typically settle informally at the edge of cities, many of whom later move into formal structures in the same location or in new

towns further away, the consequence of longer commuting distances will be particularly detrimental.

7. Population growth and urbanisation are urban realities that are unlikely to dramatically change in the near future. As a result, governments in developing nations prioritise the accommodation of growing urban populations, and consequently environmental conservation often comes second to survival.

8. Polycentricism has been cited as a potential solution to developing countries (Drakakis-Smith, 1995) however, developing countries are renowned for the primate nature of their large cities, and despite numerous attempts at decentralisation of political and economic activities success have been limited (Rakodi, 1997). This problem could potentially also be attributed to local authorities unwilling to share already sparse investment opportunities. Related to this aspect is the warning noted by Colombian and South Korean experiences against enforcing “excessive decentralisation planning”, as this does not take account of specific locational needs of firms (Rogerson, 1989).

Conclusion

Yokohari, Takeuchi, Watanabe and Yokota (2000) show that most Asian megacities have attempted to manage metropolitan growth by applying western urban planning concepts such as green belt and zoning in response to the rapid migration of people from rural to urban areas. They conclude that ‘the application of western urban planning concepts represented by greenbelts and zoning may not be the best solution in the Asian context’. (Prior and Raemaekers, 2007). It is suspected that the same conclusion can be drawn for the application of western urban growth management practices in most developing country contexts. The paper provided an overview of the evolution of urban growth management since the earliest forms of growth control (i.e. greenbelts) to the later generation of smart growth and more recently the debate on polycentricism and regionalisation. It then illustrated how the differences in urban conditions in the first and developing world could hinder the success of first world urban growth management best practices in the developing world. The paper concludes firstly that the search for the ultimate sustainable form perhaps needs to be reoriented to the search for a number of sustainable urban forms that respond to different settlement patterns and contexts (Williams, Burton and Jenks, 2000) and secondly that it should focus on an urban form that prioritises social and economic equity.

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II. Urban contestations



Poros, Greece (Source: Noico Kotze)

Thinking beyond exclusionary gay male spatial frames

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Abstract: There is increasing interest in changes within gay neighbourhoods in different cities and regions. Some constituencies are concerned about the decline – or de-gaying – of some queer neighbourhoods, and the emergence of newer places, seen as mixed, gay-friendly, or post-gay. This paper questions how centrally these debates should stand in gay geographical and planning scholarship. Drawing on the South African context the paper focuses on Western theorisations of the relationship between gay sexualities, its links to specific forms of gay space such as gay ghettos and neighbourhoods, and South Africa's empirical realities. The contention is that gay spaces (in the form of consolidated space, or villages) are not a necessary outcome of lived gay identities. It is argued that in South Africa differently constructed gay identities are differently spatialised and ultimately incongruent with Western theory.

Introduction

Sexual and gender minorities have struggled for fundamental inclusion in the social, political and economic life of their communities for centuries (Hubbard, 2012). There has been considerable growth in different feminist and queer thinking of homonormativity opening up a range of divisions, as well as new alliances between theorists and activists. Potentially, these gendered and sexual politics are engaged in the formation of new so-called equality landscapes, whilst often being critical of the legislative equalities that are seen as normalising once queer lives, through institutions such as marriage, the adoption of children, and the introduction of partner pension schemes and medical insurance. However, although much debate has been generated about the fluidities and anti-normativities of these new conceptualizations, the assertion has in many ways remained that certain spaces that were once political and filled with radical opportunities are no longer queer, edgy, or different enough, having been absorbed into neoliberal urbanity. Such spaces include traditional gay villages and other supposedly normalised sites.

There has been increased interest in changes within LGBTQ precincts in different cities and regions across the world, particularly, but perhaps not only, in the West. This includes concerns from some LGBTQ constituencies about the decline – or de-gaying – of some queer neighbourhoods, coupled with commentary about the emergence of newer places, sometimes espoused as mixed, gay-friendly, or post-gay – but how centrally should these debates stand in places beyond the developed Western world?

This paper draws inspiration from suggestions that the “old gay (male) ghetto debates” are in some ways parochial, both spatially and theoretically (Hubbard, 2012) and the dominance of such concerns in queer spatial sciences so pervasive in Western gay space theorisation must be challenged. The contention is that gay spaces in the form of consolidated physical or symbolic spaces are not a necessary outcome of lived gay identities. Two key points are made in this investigation. Drawing on the South African example, it is illustrated that (1) differently constructed gay

identities are differently spatialised relative to context, and (2) that Western experiences in relation to the construction and associated decline of gay space is not universal. A general call is made for a more positive argument in researching the relationship between gay sexuality and space. The type of argument should not be one that shows that gay ghettos and neighbourhoods are being displaced and are declining in necessarily negative terms, but rather that they are being replaced by new kinds of spaces, which are assuming their clearest forms beyond the West, and could be pointing towards greater inclusion and acceptance of gay minorities.

Thinking beyond the current debates on “being gay” and its spatial manifestations

There has been increasing debate surrounding essentialised notions of what being gay might mean. Tucker (2009), along with others contend that the representations of gay/straight, ‘in the closet’/‘out of the closet’ are being questioned through their application to contexts, communities, and societies that do not place such prominence on proclaiming a particular “authentic” sexual identity located around a particular Western or European gay/straight binary. It is argued that different individuals will relate to heterosexual contexts in different ways and therefore may choose to reveal their sexuality/identity but do so in ways that might not lead to unilateral ideals of sexual liberation associated with the Western notion of “the closet” and “coming out”. Investigators working outside the Western milieu have avoided and questioned deploying Western sexuality descriptors such as gay/straight/bi-sexual as a way of exploring sexual identities. This work is focused on the uniqueness of particular forms of sexual identity in different racialised locations, or on the way these identities are later affected by and in turn affect Western influences (cf. Visser 2013). The investigations have aimed to historicise the experiences of gay men in places such as sub-Saharan Africa, in part explaining why other types of societies’ or communities’ understanding of sexual identity may be so different to those mostly studied in key sites in the West (Tucker, 2009).

While these debates are ongoing, broader gay studies investigations, for the most part, have failed to meaningfully include empirical evidence from outside the Western context as to what gay might mean for space creation and attendant social relations (Tamale, 2007). For example, the complexity of sexualities in Africa as explored in Sylvia Tamale’s (2011) recent collection of essays problematises the stability of sexual identity as a whole – not least, homosexual identities. Indeed, most of this work emphasises the fluidity of sexual identity and spaces in which it is or might be expressed. One of the key arguments in her collection is that Western researchers still view sexuality within the narrow spectrum of the sex act (see as a review by Hubbard, 2012), and seldom investigate the extraneous factors that impact and shape our multivarious sexualities (Tamale, 2011: 11).

So what does it mean to be “gay” in a country like South Africa? As suggested above, this is a matter that has seen significant debate in the academic press not only internationally but within South Africa. However, it has not, in my view, been fully appreciated how complex it is to apply these identity markers in a Southern context, let alone influence various theoretical claims made around the relationship(s) between sexuality and space seen in Western discourses. While investigating gay cohorts in urban South Africa, for example, it has been relatively straight forward to identify and interview white gay male survey participants (see Visser, 2013 for review). However, colonialism and apartheid imposed different racial categories along

with diverse understandings of gender performativity and where those performances are allowed to take place. Research into 'other' race groups' sexuality – in terms of gayness – is more complicated because the identity marker 'gay' does not necessarily hold a clear or stable meaning over space and through time.

Investigating white gay men, might be relatively easy (for many reasons which include class, race and "Westernised" conceptions of queer identity), however, the same cannot be suggested for many other South Africans (who might be described as gay from a Western perspective), not because there are no black men that seek out same-sex emotional and/or physical intimacy, but because the marker 'gay' simply does not stick and they do not agree with such 'naming'. The question then is that if the gay identity as a descriptor cannot be kept relatively stable, how does one insist upon gay space formation or a relationship between a gay sexuality and space?

Moving onto the matter of queer identity in space is thus the challenge of identifying and naming the "subject/object" of analysis. The issue of moving or imploding "gay ghettos" implies a relationship between sexuality and space – that there is some sort of ghetto/neighbourhood, which potentially occurs in any given densely populated urban space (Castells, 1983; Gorman-Murray, 2009). The question is whether there is a necessary spatial basis for gay sexuality in South Africa, as suggested by both current and pioneering scholars of this contention. A rather "classic" contention in academic literature is that "gay space" (and "gay neighbourhoods" in particular) represent so-called fields of care in which gay or lesbian individuals cultivate and reaffirm identities and develop emotional attachments based on repeated experiences within bounded spatial limits (Johnston and Longhurst, 2010). Empirically, this theoretical claim does not stand in South Africa. Perhaps networks of people form the basis of "fields of care", as clearly demonstrated in the work of Oswin (2005) and Tucker (2009) but, as shown below, it certainly does not necessitate fixed physical or symbolic space.

In South Africa, there is limited evidence of the "sexuality begets specific space" scenario across race and class. The historical record demonstrates that some white gay cohorts did demonstrate such behaviour in city spaces in some neighbourhoods in both Cape Town and Johannesburg. In Gevisser and Cameron's (1993) collection of essays it is shown that during the 1970s and 1980s there were concentrations of gay leisure venues in Hillbrow and later in Melville (Johannesburg) during the late 1990s. As such, there was some sort of understanding that these were neighbourhoods in which there resided more openly gay people, along with some gay leisure venues. However, this did not result in consolidated spatial units as seen in the Western interpretation of gay ghettos or neighbourhoods. Similar claims can be made for other South African cities with the CBD, Green Point and Sea Point areas of Cape Town hosting a number of gay venues over the years. Lately, the De Waterkant area of Green Point has attracted some research attention. For white gay men, however, sexuality was generally 'lived through' networks of people, not in fixed neighbourhood sized spaces. In terms of other racial categories, a similar point is made in the collection of essays edited by Van Zyl and Steyn (2005). Research in Cape Town also shows how black, coloured, and white gay men interpreted different neighbourhoods as the location of "gay" places, but certainly not whole neighbourhoods. These areas are dispersed across the city and racialised and classed, however, with no real neighbourhood focus.

On a smaller scale of analysis, it has to be acknowledged that over the decades, some white gay men created gay leisure places for themselves (Visser, 2013). Towards the end of the twentieth century, and with a progressive constitution, it appeared as if an opportunity might have opened for the creation of a gay neighbourhood in Cape Town (Rink, 2008). Although there was and is a concentration of gay leisure activities in Cape Town's De Waterkant, a ghetto (or neighbourhood) has not developed—there being no need for the exclusion of gay men is complicated and their apparent inclusion is more forthcoming than Northern theory might suggest. Indeed, it is an important consideration. However, as Tucker (2009) and Visser (2008a) have demonstrated, race/class identities are probably at the root of this 'acceptance' in the South African context.

A key observation is that the 'ghetto' in all its forms has been premised on the idea of fear, exclusion and seeking identity, but the point is that the creation of a neighbourhood or ghetto is not a necessary outcome of these marginalisations or sought inclusions of homosexuals. On the contrary, for most white gay men, for example, the gaying of limited straight space would, for the most part, more accurately describe their leisure and residential spatial realities. This leads to the underlying notion in theorising the sexuality/space nexus that gay men are necessarily not accepted in a range of communities. Acceptance is a problematic concept to start with. The academic and empirical record reflects the horrors of not being accepted as being gay across the globe. Nevertheless, there is a need to resist the "anti-gay" meta-narrative in academic or general media discourses, surrounding gay "acceptance". The current literature seems to be fixated on the rejection of queer lives in heterosexual life-worlds. In South Africa, from a legislative/constitutional point of view, one's sexuality is a non-issue (Tucker, 2009). Socially, however, the same is not. For example, acceptance of black lesbians in South African society is limited at best – in fact, a string of corrective rape cases proves the opposite. However, extending this claim more broadly is problematic. There are, in fact, many contradictions of acceptance to be found (Visser, 2008a, 2008b). Race, class, and gay sexuality might be seen as a nexus that could predict "acceptance" – for example, turning attention, particularly to the white middle class urban youth. Leisure spaces of all kinds can serve as spaces of identity development, consolidation and sexual exploration. Yet, as Tamale (2011) suggests, here is a locational and/or class and race (or gender) issue, for this claim can best be made relative to specific locations: mainly large cities, white areas and relatively expensive places. However, even in small South African cities (in fact in small towns in the rural expanses of central South Africa, for example), the issue of race and class in many cases overrides the importance of sexual orientation. Although the general community might not approve of gay lifestyles, gay men (for example) are generally accepted because they are not poor and 'at least they are white' – read 'one of us'.

For white gay men, all manner of homophobia can be negotiated, merely because in a racialised and classed society such as South Africa, being 'white' and broadly of the same 'class' – the 'us' – overrides sexuality as a major marker of difference. By the same token, being black, poor and gay will certainly find little acceptance in white leisure space, although it will in some black township spaces. Locational context and variability is thus important and acceptance/exclusion is not monolithic but locally negotiated through race and class identities.

In addition, we might add that exclusion/inclusion/acceptance is also “the individual in community” contingent. Tucker (2009) has also found that the negative social consequences of being gay in some black townships can be overcome, not because of heteronormative performativity, but owing to the individual’s unique negotiation of their spatial context. In many of these cases, the performativity of the individual’s sexuality stands central. Being a black or coloured gay man is/can be performed in a markedly different manner from many gay white men – totally effeminate or alternatively homonormalised perhaps but context-specific (culturally, economically, historically, socially, and locationally) nevertheless (Tucker, 2009). For example, acceptance of a truly effeminate black gay man in a larger community context that is in many ways deeply homophobic, is possible (Tucker, 2009).

It is my contention that this points to a glaring gap in current assertions not only concerning sexuality and acceptance generally but their manifestation in the South African context specifically. There is clearly a connection in this claim to issues of performativity, but some people are plainly able to negotiate their immediate heterosexual world ‘better’, not because they are homonormalised in their sexual performativity, but because of who they are as individuals. Gay studies need to be more sensitive to such variance.

Finally, the issue of relocating/de-gaying gay villages/neighbourhoods in South Africa requires attention.

I would first argue that, empirically, the notion of a gay neighbourhood or village is not appropriate in most South African contexts. In different cities, there are different narratives. Cape Town’s De Waterkant has certainly seen some animated academic and general media debates. While the area is gay coded it hardly qualifies as a gay village or neighbourhood as compared to areas in cities such as Amsterdam, New York or San Francisco. Recent evidence also suggests that other large metropolitan regions such as Durban, Johannesburg or Pretoria have neighbourhoods that might be populated more densely by leisure services that cater to gay leisure needs, but there has certainly not been any consolidation of gay space, leisure or otherwise. The point is: there is no gay ghetto to move to or from in South African cities or towns. In addition, the growing role of virtual spaces of gay interaction such as Gaydar, Grindr and a range of other social networks might undermine not only the development of consolidated gay space but even gay bars and clubs. In this respect, however, there is certainly scope for directed empirical research, as currently this point is supported by investigations in which virtual meeting spaces are only mentioned by survey participants in passing. Additionally, a range of issues linked to who the main participants in these networks are, and in what way class or education might impact on such claims needs to be explored. However, on the whole, this realises the challenge of how to think about the movement between and across the continua of real/virtual spaces, public/private spaces and physical/virtual relations.

The second contention relates to how people deal with visibility in terms of sexuality. The theoretical position has been that gay people use alternative spaces, or transform existing spaces to resist heteronormativity – to resist what society dictates as acceptable behaviour: body language, sexuality, and activity (Hubbard, 2012). Social bonds develop among sexual dissidents in these resistive spaces, and these spaces can in turn produce and strengthen these bonds. Such claims are of course made with reference to gay pride marches, drag shows, “coming out days” etc. in always specific cities: Sydney, Provincetown, New York, and London, or countries such as

the US, UK and Australia (Knopp, 2007). Yet, that is simply not the case everywhere. On the contrary, if repression was the genesis and means by which gay space or neighbourhoods would develop, then Africa, the Middle East, and South America should be teeming with gay villages, gay ghettos, gay marches, and the like. However, this could be a matter of gay men in these regions just being terrified – they simply cannot take any action owing to current legislative frameworks. The point is: making the claim that exclusion and oppression is (as theory suggests) an adequate set of conditions to lead to consolidated queer spaces developing does not hold.

In addition, legislative protection is certainly no guarantee for the development of gay neighbourhoods or villages either. South Africa has extraordinarily progressive legislation that technically makes discrimination on sexuality grounds impossible. Indeed, so too do a number of northern European countries. Seen from this angle, one might argue that the extension of the “social bonds” position would be that gay men would seek out the development of consolidated queer spaces. The empirical fact, however, is that, as a rule, they do not. Many assumptions in gay/lesbian debates concerning the relationship between sexuality and space require empirical testing. Even at the most basic scale of visibility (in terms of leisure), this verification is required to prove key current theoretical positions.

Theorising beyond dedicated gay male space

Perhaps one of the great issues holding back the theorisation of gay male space is a preoccupation with the West and its activist past of the 1970s and 1980s, which have formed the focus of key authors in the gay space debates. Exclusion/inclusion/acceptance/rejection and a necessary link to physical or symbolic spaces still form the backbone of these debates (Oswin, 2008). The theoretical base of this discourse has been derived from a small number of Anglo-American scholars describing a limited geographical reality. There is a lack of empirical evidence from outside the Western core with the outcome that these theoretical debates are simply a form of localised (particularly American and British) introspection. In the process, the theory is not only insufficient to explain gay spatial realities in the Western/Northern context itself, but totally ignores/and is irrelevant to the majority gay population located in different and diverse settings elsewhere. The point is that at a global scale, the current theoretical positions on the relationship between gay identities and space do not explain much of the global gay lived reality – and this investigation is only one example of this contention.

The paper has mainly been concerned with the empirical realities of South African scholarship, yet illustrative of general debates into the sexualities/space nexus vis-à-vis a broadly framed Western investigation. It gestures to further issues we should consider in the global South relative to the North. Gay debates from a Northern perspective are correct in asserting that heteronormativity is still the key social guide in sexualised relations. However, not only is what constitutes heteronormativity a moving target over time, it is extremely diverse across space. These are points that the scholarly community focusing on gay men in space is either struggling with or overlooking. It has to be acknowledged that not only is heterosexual society changing in terms of what it means to be heterosexual, but presenting essentialised images of “the heterosexual” world vis-à-vis its negotiation of “non-heterosexuals” (another moving target) is too narrow. The overarching point is that answers to such suggestions are to be found in a vastly expanded empirical project that is inclusive of various spatial realities.

Parallel to this there is the issue of new spaces in which “community” is found and developed (Johnston and Longhurst, 2008). Virtual spaces in the form of chat rooms, websites, Facebook or Gaydar lead to spaces for meeting, developing and reaffirming gay identities of various kinds. An issue that requires insight is in what way these virtual spaces are impacting a range of physical spaces. Heterosexual leisure spaces are and can be used as spaces in which men meet men for negotiating sex or companionship, enabled by such technologies. Spaces with gay inscriptions, either physical or symbolic, are not necessarily required. We might find a particular physical space being the meeting place simultaneously of a straight couple hooking-up via virtual meeting spaces, sitting at a table next to two gay men who have done the same. The question is: how does one describe and theorise spaces that hold myriad inscriptions to both heterosexuals and homosexuals?

Given the insistence on greater inclusion, this point might appear to undermine the general tenor of this paper. It might be argued that such technologies would only be applicable to the developed North and that a young African gay male in a remote rural landscape does not have such opportunities. However, the developing South is now well served in terms of cell phones and linked web technology to access virtual gay communities from which interaction can be arranged. Gay men would in turn negotiate their historical, cultural, and social location-specific contexts for their interaction. Not to follow a teleological line of reasoning, but this might well result in gay space development never taking off, with no ghetto ever developing, and gay bars and clubs left to de-gay.

In the end, gay ghettos and their demise, owing to de-gaying, or homonormalisation and heteronormativity infiltrating gay or lesbian lives as currently communicated in Western discourse only serve to show how many gay lives are excluded and just how parochial the current gay debates are. The underlying idea of this investigation is that the perspective could change to one in which it is shown how new kinds of spaces are being created, and pointing towards something more inclusive and accepting of gay men.

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So what's new? Post-apartheid evictions, displacement and forced removals

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Abstract: The first decade of the 21st century has witnessed increased scholarly focus on human displacement, and its consequences. In South Africa considerable attention has focused on forced removals and relocation under apartheid, and there is a constitutional commitment to stopping such violation of human rights in the democratic era, at least in theory. In practice, there have been several prominent cases of forced removals across the country since 1994. A common theme is for poor, black communities to be forcibly uprooted in order to make way for formal housing, infrastructure, commercial/industrial and mega-projects. The consequences for the poor are predictable - landlessness, loss of livelihoods, vulnerability, destitution, desperation and violation of their constitutionally enshrined human rights. The main reason for evictions is development induced displacement which is often presented as being in the public interest. This paper examines the most recent such threat to the Durban south community. The paper suggests that there are remarkable continuities between the apartheid and post-apartheid eras, especially in terms of force and violence, and illustrates how poor communities are resisting and challenging the threats of forced removal and relocation.

Introduction

The first decade of the 21st century has witnessed increased scholarly focus on human displacement, and its consequences. According to the World Bank, about 15 million people are displaced by industrial and infrastructure development projects annually, which are often presented as serving the public interest. Since the development of roads, railways, and ports, the planning of transport facilities have always had the potential to advantage, disadvantage or physically divide established communities (Lucas, 2004).

In South Africa considerable attention has focused on forced removals and relocation under apartheid, and there is a constitutional commitment to stopping such violation of human rights in the democratic era, at least in theory. In practice, there have been several prominent cases of forced removals across the country since 1994. A common theme is for poor, black communities to be forcibly uprooted in order to make way for formal housing, infrastructure, commercial/industrial and mega-projects (for example Newton, 2009).

While such projects are promoted on the basis of increasing economic growth and improving social well-being, these developments "have all too often left local people permanently displaced, disempowered, and destitute" (Oliver-Smith, 2009:3). The consequences for the poor are predictable - landlessness, loss of livelihoods, vulnerability, destitution, desperation and violation of their constitutionally enshrined human rights. The main reason for evictions is development-induced-displacement (DID) which is often presented as being in the public interest. The paper focuses on the potential for displacement resulting from recent plans for port expansion in the Durban south area, with specific reference to the Clairwood community and its surrounds.

According to Fernandes (2001), it is the marginalised regions of the city that are targeted for DID, because the residents of these regions are voiceless and the degraded nature of the space can bring the land purchase prices down. This phenomenon is expected to increase, because in pursuit of the capitalist agenda, more large-scale developments shall be constructed and more people will need to be displaced. The dilemma faced is the fact that the state has the right and the power to act in and decide on the public interest, even if this is at the expense of the displaced poor (Fernandes, 2001). This leaves communities, most notably the poor, in an exceedingly vulnerable situation.

A key contention is that there are remarkable continuities between the apartheid and post-apartheid eras, especially in terms of top-down dictatorial decision-making and lack of participation, and the use of force and the potential for violence. The paper will also illustrate how poor communities are responding to the threats of forced removal and relocation. The Clairwood case is significant as 6000 (of the initial 55 000) residents have defied attempts by the local state in the colonial, apartheid and democratic eras to uproot and relocate an established, thriving community, which was built by indentured labourers and their descendants, in favour of industrial development. Clairwood will be the first community to be moved in terms of current spatial development plans.

Background

Clairwood is one of Durban's oldest and most historic residential communities, and is one that has been cemented in its current location (in Durban's logistics and economic centre) due to apartheid-style urban planning (Aylett, 2010). This community has a history of displacement that extends well into the apartheid era. Clairwood residents have fought for decades for their right to remain in the suburb despite racially motivated forced removals and numerous attempts by the government to develop the area as industrial land (Scott, 1992). It has been suggested that during its more than 100 years in existence as a residential area, including the post-apartheid years, this region has been subjected to a deliberate process of decline and dereliction (Maharaj, 2012).

During the late 1940s and early 1950s, over 40 000 people resided in Clairwood, and given the location of the suburb in the heart of the SDB, residents had an easy access to employment and felt the area was an ideal residential location (Scott, 1992). This was, in the main, an Indian community with strong place-based social relations and emotional attachments to the area. The Group Areas Act of 1950 sought to change this and planned a radical and comprehensive land use change for the urban areas of South Africa. From the 1950s to the 1970s a large number of Indians were forcibly removed from their homes by the Durban municipality by either the termination of their leases on public property or the expropriation of privately owned land (Scott, 1992).

From 1969 to 1975, 1 222 families were forcibly removed from Clairwood and by 1988, the population of the suburb had dropped to approximately 6000 people (Scott, 1992). Here the municipality advocated its fulfilment of two goals – providing more land for industrial activity (the SDB at this time had developed as a core economic node for South Africa) and ridding the region of informal settlements deemed unsafe and unsanitary (Scott, 1992). This significantly diminished the social relations within the area because of the removal of numerous

residents who actively contributed to the strength of the community: “The plan for industrialisation (of Clairwood) was... bereft of any considerations of the historical significance of the area, the emotional attachment to place and communally created value systems” (Scott, 1992:96).

Major concerns for the community during the post-apartheid era have included the increase in illegal, commercial and industrial activities within their residential zone, greater environmental pollution resulting in an increase in respiratory problems within the area, increased trucking and growing criminal activity associated with the Port of Durban. This is added to the most significant and ominous threat of DID. Seventy-three percent of Clairwood has been condemned as a slum by the Durban City Engineer and since the 1970s many industries have been established surreptitiously - the Durban City Council has continuously turned a blind eye to this practice. This neglect and degradation is evidence of the fact that the well-being of the communities within Clairwood and the SDB is not a priority to local government (Pillay, 2012a).

There have been suggestions that Clairwood was industrialised by stealth through a process of deliberate decline and dereliction. In August 2003 the Deputy Mayor, Logie Naidoo publicly pledged that problems relating to ‘illegal’ businesses would be “resolved by the end of 2004” (*Post*, 9 September 2009:16). In December 2006 a senior municipal bureaucrat stated that Clairwood would “undergo more intensified use and land use changes, with a focus on supporting related port industry, manufacturing and commercial development” (*Post*, 9 September 2009:16). However, Deputy Mayor Logie Naidoo acknowledged that “Clairwood has been neglected for too long”, and he gave an “absolutely clear” assurance that “no one will be forced to leave Clairwood” (*Post*, 9 September 2009:16). On 21 August 2009 the Clairwood Ratepayers’ Association submitted a memorandum to the Durban Metro, demanding that “every attempt should be made to ensure that illegal trucking and non-conforming businesses cannot be a law unto themselves” (*Post*, 9 September 2009:16).

The recent risk of DID in the SDB is clearly not a new one, and in fact for the past 50 years the rezoning and industrialisation of Clairwood and its surrounds has been on the agenda of the Durban City Council (Scott, 1992; Maharaj, 2012). Given this community’s turbulent history and the trials of displacement it has faced during apartheid, it seems a wonder that in South Africa’s democratic era these people be exposed to the same hardships. The Back of Port (BOP) and Dugout Port (DOP) developments place the perceived benefits of industrialisation and economic growth above the risks associated with DID. Scott (1992) stated that government in the post-apartheid era should develop and strengthen low income and informal communities, such as that in Clairwood, so as to harness a constructive democratic society. Current plans for the development of the DOP and BOP precinct, instead, potentially recreate the apartheid legacy of forced relocations and degradation.

The DOP and BOP (Figure 1) developments have left the residents of Clairwood, in a state of panic and uncertainty and fearing increased crime, pollution and relocation. Public opposition has been met with little response from the government about the displacement process, and the community has been excluded from participating in key decision-making processes that impact on their lives and livelihoods.

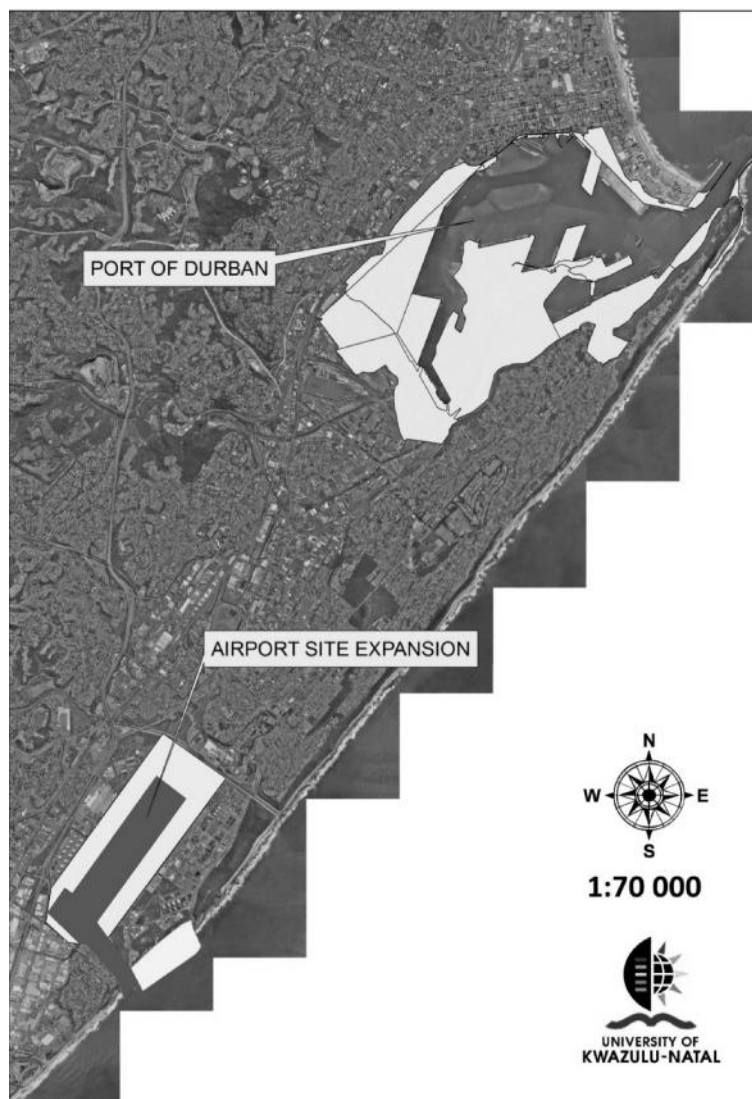


Figure 1: Location of Back of Port and Dug-out Port.

Back of port and dugout port

Durban's proposed DOP and BOP logistics development is an example of the pro-growth, neoliberal agenda of the city's development. This R250 billion project, championed by South Africa's state-owned logistics company (Transnet) and the government, can potentially displace Durban's oldest residential suburb, Clairwood, through land-use rezoning.

Four major spatial developments championed by the local, provincial and central governments, in partnership with Transnet were announced in mid-2012:

- Back of Port expansion plans
- Sale of the old airport to Transnet and the plan for the dugout port
- Sale of the Clairwood Race Course to Capital Property Fund
- Major road expansions

Economic impacts

Durban is the second largest manufacturing centre in southern Africa and the Port of Durban is Southern Africa's busiest import and export centre (Figure 2). This port is located in the SDB, a region of the city with the highest concentration of industrial

activity. This area is deemed to be an economic backbone for the province of KwaZulu-Natal and for South Africa. It is believed that the current port is struggling to keep up with the demand and shall become insufficient within the coming decades (Graham Muller and Associates, 2012). This development has been described as “fundamentally a pro-growth, economic project” (Centre for Environmental Management, 2009: 13), and this is the primary motivation for the development of the DOP and the BOP logistics project.

National, provincial and local governments are all in agreement that the dug-out, deep container port should be developed to ease stress on the current port and grow Durban’s trade and economic potential. However, the expansion of the port and the BOP developments are mammoth in scale. The plan is to expand port capacity from 2.9m to 20m containers. The state’s argument for these projects are in the public interest because new investment opportunities which would create jobs. The Dug-out Port is expected to create 20 000 direct and 47 000 indirect jobs during the construction phase and the port operations are believed to generate 12 000 direct and 16 000 indirect jobs. Given the R250 billion investment into this project, the numbers of jobs (mostly temporary and construction-based) do not seem justifiable.

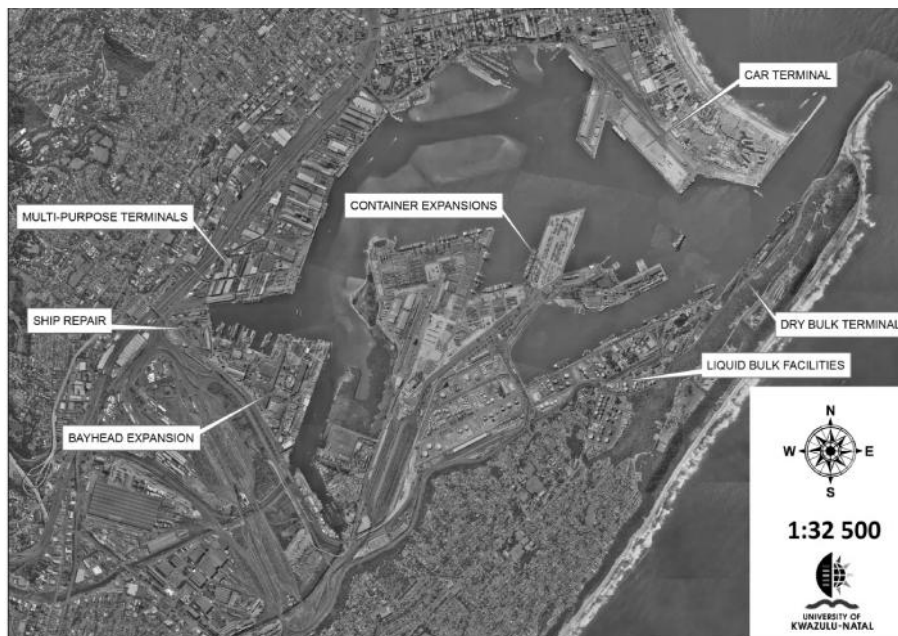


Figure 2: Back of Port Expansion Plans.

At a Business Forum meeting in Prospecton in June 2012 to discuss the new dugout port, Frikkie Brooks, head of the secretariat for the KZN Planning Commission, indicated that “Politically there is unanimous support and I believe there are going to be opportunities for everyone who wants to contribute, no matter who you are” (Dardagan, 2012, p. 3). However, Brooks also made an amazing admission that “Durban south was blacklisted for further international investment because of its “environmental unsustainability”. He also “conceded (that because of this) the environmental impact assessment process could take a long time and “would influence how the project would work out” (Dardagan, 2012, p. 3).

Relocation

The planning and conceptualisation phase of the DOP and BOP developments has been littered with confusion. The fact that the key decision-making processes have

been undertaken behind closed doors has alienated the community from participating in a consultation on a future that directly affects their livelihoods. Their understanding of the implications of the developments is limited because their involvement has proved to be only on a need-to-know basis.

There have also been a number of contradictory messages about relocation. Firstly, the Deputy Mayor Shabalala has stated that no one will be forced to move and that the city would act in the best interests of citizens, while the Head of Development Planning in Durban Subhatri Moonsamy maintained:

*“No-one will be told they have to leave. There are processes that need to be followed and the community will be engaged at every step. The small amount of residential premises in Clairwood are surrounded by these unhealthy industries. How long can we allow this type of change to occur, without realising that rezoning needs to take place in the area of Clairwood”.*¹

Rishi Singh, Chairperson of the Clairwood Ratepayers' Association, contended that about 200 000 residents from Clairwood, Wentworth, Merebank, Isipingo and the Bluff would be forced to move. He urged the municipality to “return to the drawing board and adopt an approach which is more inclusive and people/community centered, and sensitive and which strives to accommodate the interests of all stakeholders and not to the benefit of one at the expense of the other”.² The Umbilo Action Group (2012, p. 2) questioned the Durban Metro about its plans to “provide housing for the vast number of poor people such as government pensioners, social grantees, the unemployed and shack dwellers across Durban south”.

To add to this rampant confusion and dishonesty, the plans for Clairwood have stated that the area is to be rezoned for ‘logistics purposes’ (despite the residential community totalling approximately 6 000 residents and the BOP plans make provision for expropriation. According to the South Durban Community Environmental Alliance (SDCEA) “Being forcibly induced to move and being relocated are simply synonyms for the same community-destroying act”.³ Since 2008 the Durban Metro has denied that Clairwood residents would be forced to move – “in fact promises were made that the area had been identified for an upgrade. The eThekweni Municipality has consistently contradicted itself, propagated half-truths and made sweeping generalised statements which do little to address specific local concerns or engender trust...” (Umbilo Action Group, 25/8/12).

Residents, meanwhile, remain frustrated and unaware of their fate and what the rezoning implies for their residential community. The community fears that even if the municipality does not directly force them to displace, the BOP precinct plans and the introduction of legal industrial and trucking activity into their residential suburb shall make living in Clairwood unbearable and compel them to relocate (The Independent on Saturday, 2011). This indirect DID could potentially have even more disastrous consequences for the communities because no adequate compensation and

¹<http://www.looklocal.co.za/looklocal/content/en/south-durban/south-durban-news-general/Port-plans--City-promises--no-one-will-have-to-leave> (accessed 20 March 2013).

²Memorandum submitted to the Development Planning and Management Unity of the eThekweni Municipality on its proposals for both Clairwood and the Port Expansion initiative in Durban.

³Statement by South Durban Community Environmental Alliance, 11 February 2013.

rehabilitation plans would be put in place for those who relocate. The low residential property values in Clairwood would make the low income community's ability to buy homes elsewhere difficult.

Social impacts

Port development is synonymous with permanent and irreversible social and environmental impacts. These impacts most notably affect the livelihoods of coastal communities. These interrelated impacts are experienced through dredging, construction, discharges from ships and waterfront industries, cargo operations and port related activities (Rodriguez and Sridhar, 2010). In terms of direct community impact, Rodriguez and Sridhar (2010) state that displacement through land acquisition is the most significant.

About 285 000 people live in the South Durban Region and there are a number of highly active social organisations involved in the protection of the communities' wellbeing in the area. These organisations include the South Durban Environmental Alliance, the Umbilo Action Group, and the Clairwood Ratepayers Association, among others. These groups have been well-involved in attempts to combat the development of the dug-out port and the back of port logistics precinct, which impacts directly on them and their fellow residents. However, these attempts have largely been in vain given the problematic public participation process for this development. Draft plans have been produced without any public participation, as well as serious social and environmental impact assessments. Public meetings, although often well attended, have left communities even more mystified with the presentation of 300 page, highly technical documents (for many in their second language) and no real opportunity to influence the closed-door decisions for this development.

The Umbilo Action Group (2012) emphasized that it was evident from the apartheid experience that when people are forced to move "communities degenerate, disintegrate ... in effect undergoing a process of dehumanisation ... No amount of statistical manipulation will justify the dehumanisation process port expansion will engender".

Community response

Community, labour and religious organisations were not necessarily opposed to development but were concerned about the threat of forced relocation and displacement. Frank Alexander, Wentworth resident and trade union leader emphasized:

"We are not anti-development, but this new plan cannot come at the expense of our children and our health. There needs to be a balance between the human family and big business" (Carnie, 2012:3).

The South Durban Community Environmental Alliance (SDCEA) – a coalition of 14 community/civic organisations, emphasized the continuity between the apartheid and post-apartheid eras:

"The communities of south Durban have endured almost a century of injustice, implemented through spatial manipulation and racist laws that have forcefully located people alongside industry, fomented class and cultural differences and coerced people onto the cheap labour treadmill by robbing them of sustainable and

independent livelihoods. It is this unjust social and environmental legacy, perpetrated through spatial planning and zoning schemes beginning in the early 1900s that communities in south Durban seek to have addressed. Instead government and parastatal bodies have continued to present spatial development plans and fait accompli decisions that, like the colonial and apartheid planners of old, continue the collusion with industry in service of wealthy elites” (SDCEA, 2008:1).

In response to community outrage about the lack of consultation, the Durban Metro attempted to present advanced BOP plans by holding meetings in each suburb, without discussing the Transnet dug-out project. Residents rejected this ‘divide and rule strategy’, demanding one meeting with all affected groups, and questioned the technical language of consultancy reports. Cardinal Wifred Napier, Chairperson of the KZN Inter-Religious Council emphasized that “when a plan like this is presented to you under the pretence of following procedure, all groups need to speak with one voice” (Pillay, 2012b:3). The South African Hindu Maha Sabha (SAHMS) also supported the struggle against forced removals:

“The residents of Clairwood have been through many trials, tribulations and struggles in the apartheid and post-apartheid eras. Clairwood is a major cultural and heritage repository of great significance to the descendants of indentured labourers. In spite of living under the shadow of forced removal and uncertainty and facing numerous other challenges you have constantly and admirably displayed courage, conviction and unity. The South African Hindu Maha Sabha expresses our support to the residents of Clairwood. We unequivocally oppose the displacement of people under any circumstances” (SAHMS, 2012).

SDCEA raised the following concerns:

- Planning process in the South Durban basin was fragmented with different government levels and parastatals operating independently – e.g. BOP separated from port expansion, dug-out port.
- Social disruption and community upheaval.
- Environmental impacts were not being considered.
- Given development of Richards Bay, Maputo and Coega (white elephant) is the expansion justified?
- Lack of consultation with the affected communities (SDCEA, 2012).

Piecemeal consultative meetings about BOP in different affected suburbs started with Durban metro in response to community protests. However, the community demanded single consultative which considered BOP, Dug-out Port and transport plans:

“As the port expansion plans will affect all communities south of the Berea to varying degrees, it is requested a combined public meeting be convened for all affected parties to be appraised of consequences, not only for their immediate area, but also on neighbouring communities which may have far reaching impacts on their quality of life, health, investments and property values” (Umbilo Action Group, 29/8/12).

Conclusion

Against this background, what are the options for residents in Clairwood and surrounds?

Firstly, negotiate and accept financial compensation. A key issue would be what is deemed to be a reasonable and mutually acceptable settlement amount for immeasurable negative social consequences? Secondly, benefit sharing – the affected communities would be guaranteed shares from the project (note that the first two options are not mutually exclusive). The third option is mass action, struggle, and recourse to the Constitutional Court and the UN Human Rights Commission - a long, protracted David and Goliath battle.

From an international human rights perspective, the United Nations has emphasized that:

“The obligation of States to refrain from, and protect against, forced evictions from home(s) and land arises from several international legal instruments that protect the human right to adequate housing and other related human rights” (UNCHR, n.d.:1). (And South Africa is a signatory to these protocols).

If the legal route is adopted, then it is imperative that a progressive team of lawyers, advocates and senior counsels; planners; EIA and pollution specialists; medical scholars and international researchers are recruited to plan and prepare for the long haul.

The weakest component of the EThekweni municipality's plans is weak social impact assessments, and questionable community consultation and participation processes. From a human rights perspective, and as victims of apartheid induced forced removals, the residents of Merebank, Wentworth and Clairwood will have a very strong case against relocation. A key issue is what would be in the greater public interest – the rights of individual residents or the national imperative to generate employment opportunities?

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Beyond participation or resistance: contesting participation in Cape Town

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Abstract: In post-apartheid South Africa, participation has been central to thinking about the remaking of democracy. In this paper, we reflect particularly on notions of 'invited' state- and 'invented'-citizen drive spaces that have been used to describe and explain the myriad ways in which individuals and communities locked out of, excluded from or frustrated by the interrupted promises of democracy, develop alternative forums of articulation. We argue that the epistemological centrality of democratic participation does not sufficiently capture how the state project is projected into and becomes interpolated by individuals and groups in society. Discourses of the post-apartheid state and of democratic citizenship are powerful imaginaries that motivate performances of participation; both 'invited' and 'invented'. Yet these performances simultaneously highlight the mutual imagination – and misrecognition – that takes place between the state project and its citizens. We suggest instead that citizenship, as a form of subjectivity related to the state project, emerges within sites of *encounter* rather than sites or spaces of participation inspired by a theoretical literature which understands social power as emergent and relational, and following recent critiques of the post-colonial state which highlight its imaginary coherence and spectral qualities.

Introduction

In post-apartheid South Africa, the relationship between the state project and those it would claim as its citizens is clearly of fundamental import to the nature and possibility of democratic citizenship. It is therefore not inconsequential that a great deal of policy, academic and non-profit research and thinking have gone into understanding and critiquing the substance of that relationship. In a context of service delivery protest, community based mobilisation, xenophobic violence and trade-union mobilisation, are some of the more productive engagements with this relationship have thought about the substance and distinctiveness of different sites and institutions of democratic participation (see, for instance, Benit-Gbaffou 2008; Zuern 2011; Landau 2012). Cornwall's *et al.*, (2004:76) distinction between "popular spaces" and "invited spaces", sometimes referred to as invented and invited spaces (Sinwell 2009; Miraftab 2004, 2009), has proved productive for describing and explaining the myriad ways in which individuals and communities locked out of, excluded from or frustrated by the interrupted promises of democracy, develop alternative forums of articulation.

The growing literature that draws upon this conceptual differentiation represents a range of more or less convergent attempts at understanding an increasingly evident disconnect in post-colonial societies between (formal) institutions for and (popular) expectations of democracy. The 'invited/invented spaces' literature can be seen as part of a broader literature on the bifurcated nature of the post-colonial state: Chatterjee's (2004) distinction between civil and political society, Scott's (1998) state

gaze from above, and even Corbridge *et al*'s (2005) view of the state from below. In this tradition, Cornwall and Coelho (2007) argue that what they term the 'participatory sphere' has: "a semi-autonomous existence, outside and apart from the institutions of formal politics, bureaucracy and everyday associational life, although they are often threaded through with preoccupations and positions formed in them" (Pp. 2). While sometimes presented as opposing spaces, Piper and Nadvi (2010) are careful to distance the literature from such binary formations that may not capture the more variegated and complex ways in which state and civil society intersect and interact. They suggest that the participatory sphere: "lies at the interface of the public sphere and the state, composed of hybrid institutions, some of which are extensions of the state and some of which are claimed from the state (...) the critical point is that the relationship of these institutions with the state and the general public is partial (...) they are spaces of contestation, but also of collaboration and co-operation" (Pp. 214).

Certainly, the same messy, contested and effervescent spaces of encounter between institutions of state and social groups that Piper and Nadvi inhabit inspire this chapter. Based on sustained empirical engagement in two sites – struggles over housing on the peripheries of Cape Town, and encounters between state and informal traders in inner-city Johannesburg – we show how 'invited' and 'invented' spaces are frequently blurred in everyday life. In doing so, however, we argue that the epistemological foundation of the 'invited/invented spaces' literature may reach its limit in this messy actuality, unable to adequately account for power and subjectivity in post-apartheid South Africa. In short, we argue that the literature emerges from and is caught by a theoretical move that privileges the state-citizen dialectic, and in which the theoretical discovery of 'invented spaces' risks becomes at best a short-hand for an expanded definition of civil society (c.f. Chatterjee 2001), at worst a vilification of the state as parasite.

Undoubtedly, the popular imaginary of the post-apartheid democratic state casts a long shadow over contemporary articulations of self and subjectivity after apartheid. That is to say, the political aspirations that framed the anti-apartheid movement – of a powerful state both legitimated and mandated to implement democracy, transform society, dismantle inequality – continue to animate social and political agency. Despite the economic and political struggles in realising service delivery, job creation and redistribution in post-apartheid South Africa (Marais 2011), these expectations remain deeply ingrained in the ways in which groups and individuals make claims about belonging and citizenship in South Africa.

Theories about the ruined, hybridised or even hollowed-out post-colonial state, which offer an understanding of power and subjectivity in contemporary Africa (within a largely, though not exclusively, Francophone tradition) (c.f. Bayart 1993; Mbembe 2001; Chabal and Daloz 1999; Simone 2004; de Boeck 2011), seem at best insufficient for understanding the expectations of democracy, in post-apartheid South Africa if not in other African contexts. Ferguson's (1999) reflections on the interrupted expectations of industrial Modernity on the Zambian copper-belt, or Taussig's (1997) ruminations on the entanglement of state and everyday life (what he calls the *magic* of the state) may more appropriately capture the deep resonance of the state-citizen dialectic in contemporary South Africa. In different ways, both Ferguson (1999) and Taussig (1997) try and capture the way in which the state as an idea maintains political and cultural valance even in contexts where *the state* appears as absent or

elusive. This is why we use the language of *state project*, rather than speaking of *the state*. As Anna Secor suggests: “there is no ‘encounter’ between a sovereign state and a sovereign subject but only a mutual imagination that takes shape through particular space-time techniques of power” (2007:49). What Secor means here is that the state does not exist as a material entity, but as an imagination against which individuals and groups take a position, and define an identity. For Secor the state is a “loosely knit ensemble (...) a field of interrelation between sites, agents, techniques and capacities” which exists only as an imagination of coherence (Secor 2007:34). The fundamental paradox of the state is therefore the seeming contradiction between the apparent coherent unity of the state and: “the contingency, lack of coordination, unevenness, and extra-legal shadows of the lived state” (2007:34). The increasing antipathy towards – and partial dissolution of – ‘invited’ spaces of participation, and the simultaneous emergence of ‘invented’ spaces which can be both democratic as well as exclusionary and violent, speaks not only to the precarity of democracy in a post-colonial (post-apartheid) context, but to the possible limits of the state project after apartheid.

Sites of encounter: invoking the State

Given our discomfort with the epistemological centrality of democratic participation to capture how the state project is projected into and becomes interpolated by individuals and groups in society, we suggest that citizenship (as a form of subjectivity related to the state project) emerges within sites of *encounter* rather than sites or spaces of *participation*. Inspired by a theoretical literature which understands social power as emergent and relational (c.f. Foucault 2002; Deleuze 2006), and following recent critiques of the post-colonial state which highlight its imaginary coherence and spectral qualities (Aretxaga 2003; Ferguson and Gupta 2002; Mbembe 2001; Robinson and Parnell 2012), the case-study below reflects upon what we regard as *encounters* in which the institutions of the state project bumps up against groups and individuals attempting to make meaningful lives. Discourses of the post-apartheid state and of democratic citizenship are powerful imaginaries, no doubt, and motivate performances of participation; both ‘invited’ and ‘invented’. Yet these performances simultaneously highlight the mutual imagination – and misrecognition – that takes place between the state project and its citizens. At stake are not just demands for delivery, but articulations of belonging, community, society, and population which contour power. For its part, the state is itself an incomplete project, endeavouring to instantiate its own existence and hegemony. These themes are explored in the remainder of the paper in the context, of township-based housing struggles in Cape Town.

Struggles for housing

“We were brought up to be angels (in my family and in my church), we didn’t choose to do this; living here we had to learn to be brave, to fight, to be community workers” (a woman in her late 30s, interviewed August 2008).

In many poor communities in South African cities, personal experience and shared solidarity – more than ideological zeal – has shaped the dedication of neighbourhood activists’ struggle for public housing; for greater support from local institutions of state and a collection of non-state institutions working in the housing sector; for poor families to claim ‘their rights’; and to build liveable neighbourhoods.

This is echoed in the words of the leader of the local Civic Organisation: “I was

evicted not once, not twice, but thrice" (personal interview, 2004, 2006). This harsh but material reality has shaped her daily life and her activist convictions. In the 1980s, under the apartheid regime, she would return home from her job as a textile machinist to find her furniture and her three children sitting next to her house on the street. Twice she simply moved herself back inside and continued her difficult daily life. The third time she went in frustration to the 'rent lady', the neighbourhood housing official – an employee of the municipality – to say: "I am a single mother, I earn this much, look at my income slip, these are my costs; I cannot pay the rent, you cannot evict me. Treat me with some respect!"

Her personal experience of the hardship and stress of forced eviction, a contentious and hugely powerful subjectivity, is the kernel on which her activism is built, the mode through which she learnt to fight and through which she inspires others in her neighbourhood. Made redundant from factory work in the early 1990s, her full time vocation is her activism. At any time of the day or night, as executive members of the 'Civic' she and her family are available to help her neighbours. Her door is always open to summons the police, harangue the rents office, petition the city council, represent the neighbourhood on area committees, broker peace between gangs, trading relations between 'foreign' and 'local' hawkers, or fights within families. Much of the activism of the neighbourhood Civic across the years has focused on demands for resources and response from the municipality and the institutions of state more generally. This has included: at the household level physically preventing evictions; putting families back into homes; reconnecting water (taking out "drips" when families are cut off for failing to pay); and, at the neighbourhood level, coordinating land occupations for truly desperate homeless families. From boardrooms to backyards, the legal to the illegal, these activities traverse within, between, and beyond the spaces of the state, beyond the 'invited' and 'invented' participatory sphere, entangled in a politics of imaginations of the state and messy actuality of the neighbourhood, in the trajectories of state institutions, non-government organisations, social movements, and in the intimacies of family and neighbourhood life.

Embedded in the 'rights' that frame democracy after apartheid, in family memories of the apartheid past, and in daily realities, activism for housing is contoured in state policy, constitutional rights, as well as mobilisation by citizens. This dialectic is best illustrated in the context of the first neighbourhood-organised land occupation initiated by the Civic and contested by the city, the police, as well as the Courts. As one activist angrily remembers:

"The city shot at us, rubber bullets, they threw our shacks down with bulldozers. That day we started building shacks, there was nobody in the police station, they were all here – the police, law enforcement, even the South African army. They treated us like criminals. People were shot and ended up in hospital. But when they left, we continued building anyway" (personal interview, February 2007).

Clearly, rights are not articulated simply as a set of legally encoded entitlements, but emerge as well from community struggle and memory. In the above encounter between the community and the police, there are very different articulations of what citizenship means. It is the city, rather than the police, who are regarded as shooting at the residents, and it is in the form of the city that the state is constituted. At stake in the account are not simply contestations over the details of citizenship, but the

very meaning of the concept. Moreover, while activism is organised towards demands from 'the state', activists' subjective relationships are not simply with the state – rather they are implicated into a complex relationship with the neighbourhood in which the image and imagination of the state circulates and becomes a powerful narrative to understand both their current predicament and their expectations of the future. In other words, the post-apartheid state is a project in the making, through the ways in which its supposed subjects call it into being.

Of course, the community engage in the 'invited' spaces of citizenship as well. Interdicted by the municipality for the land invasion, the Civic coordinated the neighbourhood's legal representation, engaging the municipality in a four-year legal battle all the way to the High Court. They confronted the '*me lords*' – the archaic and confusing protocol of the law – with an invitation to the judge to enter their world, and to visit the families in the neighbourhood. The Civic won the case; the municipality appealed but again the Civic won the appeal. The judgement in the case was important beyond the neighbourhood – it stipulated that in general the municipality be obliged to have an emergency housing policy, and cannot expect families to simply join the years-long queue for housing subsidies from the national Department of Housing if they already occupy a home. The judge further decreed that land-occupiers have title by virtue of their occupation, and demanded the municipality immediately provide basic services (water and electricity, group toilets), with the longer-term provision of additional formal housing in the neighbourhood.

The struggle didn't end in the courts and the judgement. To force the City to put in water and sanitation for the settlement, and to challenge its response that there was no budget for it, the Civic dreamed up an effective strategy. As the leader recalls, "I woke up one morning with an idea: To use City buildings in the neighbourhood to access all the settlements' water needs – toilets, drinking and cooking water, and washing in particular". The nearly one-hundred informal settlement families brought their washing, used the council toilets all day, collected water for cooking, and hung their washing to dry on council fences, their largest and oldest underpants especially. Council work stopped, the crèche closed, harried to their limits, the administrators called their bosses in the Civic Centre, the City's offices in the centre of Cape Town. The following day, literally, what was previously unbudgeted for, became possible: water standpipes were installed in the settlement. Material, yet symbolic, contentious, yet procedural, this activism powerfully shaped city-civic interactions, circulating in and beyond the neighbourhood.

Generating a spectacle, a moment of collective unity, their claim lay deeply embedded in their expectations for democracy, as well as their material and ontological claims on and relationship to the state; one that mirrored and interpolated the state's own project as deliverer of services and citizenship post-apartheid. Contentious and immersed in the state's own rhetoric of rights, in daily experience, Civic leaders argue:

"Council don't listen to us if we go through the right channels. They don't listen. They make as if they listen if you go through the right channels. They don't take notice of us. But, if we do what we do, then immediately they respond". (GS and GR, personal interview, 14 August 2003).

Nominated ward forum members, formally elected representatives of the community on the housing project committee, Civic leaders find it fruitful to be part of the state's

structures, its invited spaces. Yet, these decisions also generate tensions, particularly because they have been required to sign a code of conduct that they will not in public go against council policy. One wryly comments:

"I find this very hard. I live in the land invasion. I organized the land invasion, now I can't mention the invasion, my home. But I'm a land invader and a ward forum member." (Personal interview, October 2008).

Everyday activism, its continuities, logics, context and location are built around individuals, and their collective energies invested in the Civic and in struggles for access to services and infrastructure. They are nurtured and sustained through grounded concrete material struggles and community building processes that instantiate and define citizenship. Such engagement interweaves the banalities and demands of the everyday, with the possibilities and expectations immersed in the state's project, working within and beyond invented and invited spaces, reshaping circuits of meaning and identification embedded in the neighbourhood, activism and the state's project. While contesting the state, the Civic also draws on its project, the discourse of policy and procedure, bound up and remade in activist imaginaries and agency; a complex and contentious terrain that exceeds simplistic notions of state-citizen relations after apartheid. In this context, citizenship is celebrated, though its substance is fought for and negotiated; these entitlements and their meanings, as well as the state encounters that shape them, cannot be taken for granted.

Rather than just extend the conventional notion of invited participation and participatory space, moments of encounter help substantiate and think through the ways in which the state and its citizens do not just share in an act of participation, but actually imagine one another into being. Going outside the courts is not just an invented space of participation, for instance. It is an active construction of what the state is, and what the state should be, a moment in which the state actually becomes the state. While interactions between the state and citizens oscillate between the invited spaces of participation and the courts, for example, they are also forged in the invented spaces of the protest, and the illegal land occupations in this instance. Beyond this terrain, however, we see more broadly a project of the state invoked into being, called to become part of people's lives.

Conclusion

The stakes of encounter between state and individuals or communities are not always about the substance of civil society or citizenship. Rather, they are about the contours of subjectivity, about testing the valance of various agents of social power. Indeed, the state is a powerful political imagination, and continues to be invited, even implored, into an engagement with communities in various ways. But this invitation is only as valid as it may be for any number of other agents of social power. In bringing these narratives together, struggles to access housing texture a terrain that, while bound up in the state in fundamentally material, political, and symbolic ways, also exceeds it. Citizenship is invoked and the state has presence, but the forms and models through which social forces interact shapes the emergence and circulation of power. Within these complex webs, the state's project is projected, implemented and remade. Township activists see the state at work and the state sees its subjects, their interactions are fluid and dynamic, embedded in more complex and contested relationships and processes that always exceed a state-citizenship model framed around the poles of invited and invented spaces of participation.

Participation in democratic (invited or invented) institutions is not the only or primary mechanism of social meaning; rather, we suggest, individuals, groups, ideas, and projects intersect and bump up against one another, taking hold in the popular imagination, or dissipating and withering. The state, and a relationship of belonging – of citizenship – to it, is a powerful force within society. Nevertheless, in the messy actuality of everyday life in South African cities, we assert that circulations of meaning and identification cannot so easily be fitted into bifurcated state-citizenship models. Seeing subjects or seeing the state is as much about imagining them into existence, about extruding an ultimately abstract object from the messy actuality of competing orbits of meaning and identification, as it is about the materiality of that imagined entity.

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Urban insecurities and spaces of fear in a South African Township: Case study in KwaZakhele, Port Elizabeth

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Abstract: The study reports on the results of an investigation *on* urban insecurities and spaces of fear in a South African Township, KwaZakhele, Port Elizabeth (Nelson Mandela Bay). Five objectives were advanced for this study: to assess urban insecurities, to identify spaces of fear and understand the process of construction of these spaces, to identify the coping strategies of the local community and thus make recommendations to possibly improve the feeling of security. The empirical data was obtained through individual and focus group interviews of government officials (ward councillors, policemen), informal traders, (formal) local businesses and the residents of KwaZakhele Township and more particularly the area adjacent, Njoli Square in Port Elizabeth. The results show that while urban insecurity is omnipresent amongst the community there is also a strong sense of community cohesion. However, the Njoli Square and certain spots around the square are perceived as spaces of fear. The construction of space is based on perception and information which is translated into space. This interpretation or abstraction of space serves as instructions to move and act within space. Neighbourhood watch, street committees, increased police patrolling and early warning systems were suggested to increase the feeling of security.

Introduction

In recent years the feeling of insecurity caused by crime especially in urban areas has become a major challenge to policy makers in different parts of the world. In response to the rapid increase of crime the European Union (EU) has recently recognized the negative effects of the fear of crime (Visser, Scholte and Scheepers, 2013) and adopted an act for the revitalisation of the European Network (EUCPN). One of the main tasks of the EUCPN is to reduce crime and also create a safe environment in the urban landscape among European citizens (EU, 2009). The UN-Habitat initiative recognized fear of crime as a significant problem in developing countries worldwide and implemented the Safer Cities Programme in 1996 (UN-Habitat, 2011).

South Africa's reputation for its high crime rate has given impetus to research on urban insecurity from different perspectives and on various topics. The rapid increase of gated communities as a consequence of high crime rates and strategies to reduce the fear of crime has been a major focus of research attention (Landmann, 2003, 2004), (Juergens and Gnad, 2002) (Lemanski, 2004). National victimisation studies in South Africa have been conducted by Statistics South Africa (1998, 2012) in order to complement Police statistics and contributed to a broader picture on crime, victimization and fear of crime. Nevertheless, national victimization surveys failed to reflect an in-depth picture of communities in townships where contact crime (crime against a person)¹ and violent crime rates are the highest. To date the only

¹The South African Police Service, Department of Police defines the following categories as contact crimes (crime against a person): "Assault with the intent to inflict grievous bodily harm", "Common Assault", "Robbery with aggravation circumstances", "Common Robbery", "Total sexual crimes", "Murder" and "Attempted murder".

empirical study of crime and insecurity carried out in South Africa was in the township of Khayelitsha in Cape Town. This work was part of the Violence Prevention through Urban upgrading programme (VPUU) that was run collaboratively by the City of Cape Town, the German Development Bank, the Western Cape Province, the South African treasury and the Khayelitsha Development Forum (KDF) (Palitza, 2010). The results of the study indicated that the community identified 24 hotspots and “no-go” areas in the township. Based on the findings a community action plan was developed. The urban upgrading programme was a five year pilot project that included the development of safer nodes, with financing of 53 million dollar (Palitza, 2010). Apart from this programme there have been no empirical and scientific study on a micro-level regarding insecurities and spaces of fear in South African townships.

This research paper has been built on this gap and aims to generate research knowledge about local township communities and how these citizens are affected by daily insecurities caused by crime. Hence, the objectives of this survey are the following: the assessment and perception of insecurity related to crime of KwaZakhele community specifically around the Njoli-Square, the identification of spaces of fear, the construction of spaces of fear, the consequences in behaviour in the public space linked to these phenomena, coping strategies, and the perception of the local community towards urban upgrading programmes that might increase the feeling of security.

Methodology

In terms of research methodology the study followed a triangulation of methods and applied quantitative and qualitative data collection, as well as secondary data analysis. Methodological pluralism enables the researcher to use various tools to access different aspects of the same social phenomenon (Bryman, 2012). Interviews were conducted with 95 members of the local community consisting of residents, informal traders, youth (for example students), formal traders, government officials (councilors, teachers and policemen), and stakeholders over the period May to June 2013 by proportionate quota sampling. Their ages range from 18 years to 72 years. Respondents were diversified to ensure responses from different perspectives. Of the 95 people 49 interviewees were female and 46 male. More important is that 96% of the respondents were South African while 4% were non-citizens (Ghanaian, Nigerian, Somali and, Zimbabwean). The questionnaire uses closed questions that addressed urban insecurities and the construction of spaces of fear and open questions on the identification of these spaces and coping strategies. The questionnaire covers issues on assessment of urban insecurity in the area; identification and construction of spaces of fear in the area; link between urban insecurity and urban renewal; coping strategies to deal with urban insecurity and spaces of fear and, finally, recommendations to improve security.

The obtained quantitative data was analysed by descriptive data analysis while the obtained qualitative data was analysed by content analysis. The methodological model that was used to assess urban insecurity and measure fear of crime was influenced by the criminological discipline that has dealt with fear of crime for over four decades, namely Jackson (2005) and Gray, Farall and Jackson (2012) who

have evaluated tools to measure fear of crime. Based on their evaluation the following indicators were used to assess urban insecurity: frequency of worrying in the last month to fall victim of crime (various categories); subjective estimates of probabilities to fall victim in that area; the level of perceived control; the level of community cohesion and their belief about increase or decrease of crime in the area. Furthermore, through secondary data analysis statistics on crime and demography in the area was investigated. The results were used to illustrate the development of crime rates over a time span of 10 years (South African Police Service, see Figure 1) in KwaZakhele and to characterize the area in terms of employment and poverty levels (Statistics South Africa, 2011).

Theoretical framework

Broken-Windows-Theory

Wilson and Kelling (1982) introduced with their prominent “Broken-Windows theory” a concept that urban disorder and vandalism leads to crime and anti-social behaviour. The ‘broken window’ symbolised all types of disorder while the authors suggested that there is a causal relationship between disorder, fear and crime. The hypothesis is based on the assumption that if a broken window or physical or social disorders are left unchecked it will attract more disorder. Furthermore, the hypothesis suggests that disorder indicates a community out of control (Sampson and Raudenbush, 2004). The theory was used for various reforms in criminal policy. One significant outcome was that it provided a scholarly basis for the extension of the police role from their focus on combating actual crimes to a broader more comprehensive concern with general neighbourhood conditions including fear of crime. One reform as a consequence of this approach is the popular “Zero-Tolerance” policy that was adopted in New York City in 1993 and contributed to a significant decrease in crime statistics. Zero-Tolerance means that any disorder or rule-breaking is punished immediately based on the belief that disorder might cause crime (Doran and Burgess, 2012)

Social Geography

From a socio-geographical perspective the Broken-Windows-Theory has been criticized as being a geodeterministic approach as it assumes that space creates, increases and produces crime. Consequently the socio-geographical epistemological position advocated a constructivist understanding of space that refers back to the “spatial turn”² in geography, meaning that space is a social construct that underlies social interpretation (Soja, 1989) (Gregory, 1994). More importantly is Werlen’s (2005) theoretical framework on everyday regionalization who introduced a constructivist approach to interpret space from a space-centred towards an action-centred human geography. “If we however accept the fact that the social world is produced and reproduced by actions, we cannot take “space” at the same time as a constitutive of the social world. Rather, within such a methodological framework “space” can only signify a discursive frame of reference by which actors refer to and

²The “spatial turn” refers to a paradigm shift in the human and social sciences in the 1990s. The “spatial turn” criticized the understanding of space, time and the social constituted under the era of modernity and introduced a topological turn to space and time. Space is thus a social construct, which is constituted by interpretation and social relations (Van Houtum, Kramsch, and Zierhofer, 2005).

localize elements of their physical and social context in order to co-ordinate their activities” (Werlen, 2005, p 50).

Werlen (2005) proceeds from a constructivist understanding of space. His approach of the geography of everyday regionalization focuses on the process of constructing spaces through everyday action. Contrary to traditional geographical approaches to space, he does not consider space as cause for social action or as a container of the social world or even as objectified social and cultural meaning that understand space as something substantially fixed. In contrast Werlen (2005) sees the region in dependence on Giddens (1984) as a context respectively the situation of action and regionalization the process in which these contexts and situations are constituted by subjects (Werlen, 2005).

He also differentiates between three fields of analysis of everyday regionalization: the productive-consumptive actions, the normative-political actions, and the communicative-significant actions. However, for this study the communicative-significant actions are crucial. In the communicative-significant actions, spatial orientations are body-centred and link the body functionally between experience (stock of knowledge) and the meaning and the operational basis of subjective action. In this study the significance ascribed to spaces are subjected to the knowledge people have of these spaces and the meaning they have in their actions. Discourses about a space which is in this case defined as unsafe play an important role, because they contribute to the construction of realities through the process of communication. Particularly the interdependency of knowledge, meaning and action is crucial. The creation and production of unsafe spaces, spaces of fear or insecurities is subjective. The everyday regionalization of communicative-significant actions refers to streams of information, which are available for spatial aspects.

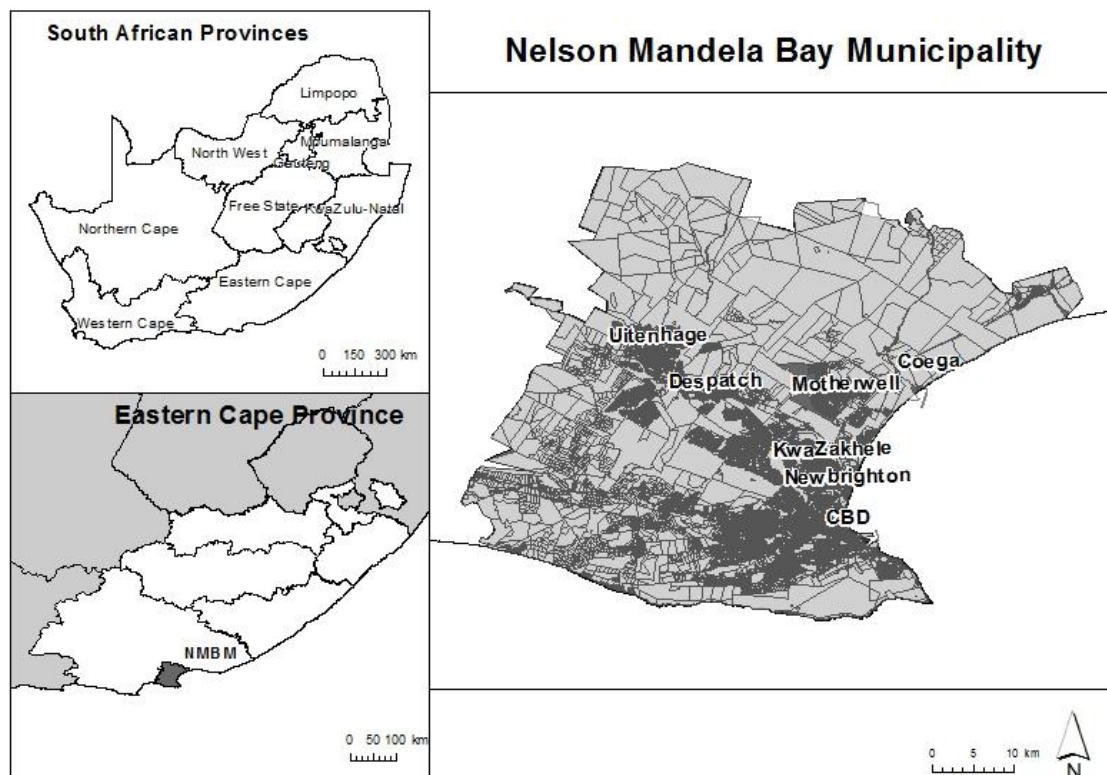


Figure 1: Nelson Mandela Bay Municipality.

Area of investigation

The area of investigation is KwaZakhele Township in Port Elizabeth which is located in Nelson Mandela Bay Municipality, South Africa. The Njoli Square is situated approximately in the geographical center of KwaZakhele, approximately 10km to the north of the Port Elizabeth Central Business District (CBD) (also refer to Map 1). From its early beginnings in the 1960s the square developed as a vibrant informal, semi-formal traders and public transport node in the erstwhile black residential areas. With the increase of informal, semi-formal and formal business crime also increased at an alarming rate in the area. In the late 1990s Njoli Square was identified as a key node in the Integrated Public Transport System (IPTS) of the Metropolitan Spatial Development Framework (MSDF) of the Nelson Mandela Bay Municipality forming part of the “Kulani Corridor” which will be the back bone of the IPTS, routing from Motherwell in the North, intersecting Njoli square in KwaZakhele via Korsten and ending in the CBD of Port Elizabeth (Nelson Mandela Bay Municipality, 2011). When completed it was envisaged the Square would make an important developmental node of the corridor.

KwaZakhele is mainly a dormitory suburb, with an estimated population of 85000 people (Statistics South Africa, 2011). The area is characterized by a high proportion of youth (34, 6%), a very high unemployment rate (74, 6%) and serious poverty levels where 50, 3% of the population do not have a monthly income (Statistics South Africa, 2011). The official annual crime rate reports from 2003 to 2012 illustrate a severe number of incidents of crimes and the fluctuation patterns of the occurrences of crimes (see Figure 1).

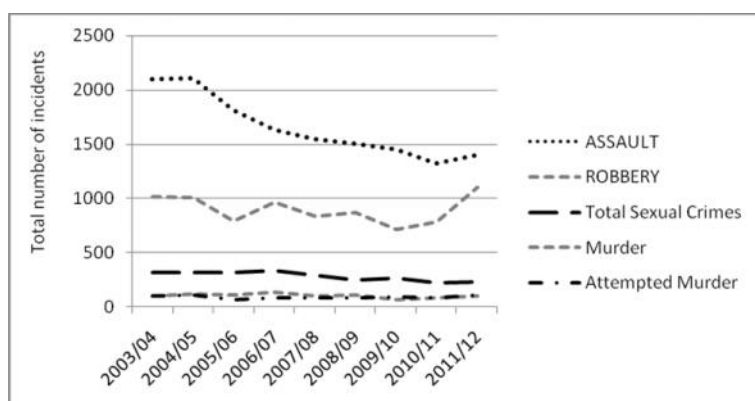


Figure 2: Contact-Crime - Crime against a person (Source: Crime Research and Statistics - Crime in KwaZakhele (EC) for April to March 2003/2004 – 2011/2012. South African Police Service, Department of Police).

Discussion of the results

Assessment of urban insecurity

The assessment of urban insecurity encompasses the indicators as outlined under “Methodology”. Almost half of the female interviewees said they have worried 1-4 times the previous month about becoming a victim of crime³, followed by 30% of the

³Crime was specified as “Being violently attacked by a stranger in the street”, “Being robbed or mugged in the street”, “Rape”, “Murder” and “Robbery at home”.

respondents who have worried every day during the last month. A smaller proportion (10%) of the female respondents worried more than twice a day. The same tendency of worrying about victimization applies to the male respondents albeit on a lower level. The results indicated that 20% of the male interviewees have worried about crime on a daily basis, while 5% of them worried more than twice a day. Only 2% of the women and 14% of the men said they had never worried about crime during the last month. The type of crime feared between the genders also differed with the female respondents indicating they are most scared of rape (41%) and of robbery (41%), while the male respondents mostly fear robbery (72%), followed by murder (11%).

In this study it was found that a large proportion (64%) of the KwaZakhele Community feel very unsafe when walking alone at night in their area, while 21% of the community feel very unsafe when walking alone during the day. In contrast 42,9% of the respondents of the national victimisation study in 2012 stated they feel very unsafe walking alone at night and only 5% feel very unsafe walking alone during the day (Statistics South Africa 2012). Their assessment of perceived control over victimisation shows also a disparity in perception according to gender. The highest portion of female respondents (42,1%) claim that they are not at all able to control whether they become a victim of violent crime or not. Conversely, almost 30% of all male respondents believe they are possibly able to control their victimization to violent crime. The lowest portion of male respondents (12%) feels that they are not at all able to control becoming a victim of violent crime.

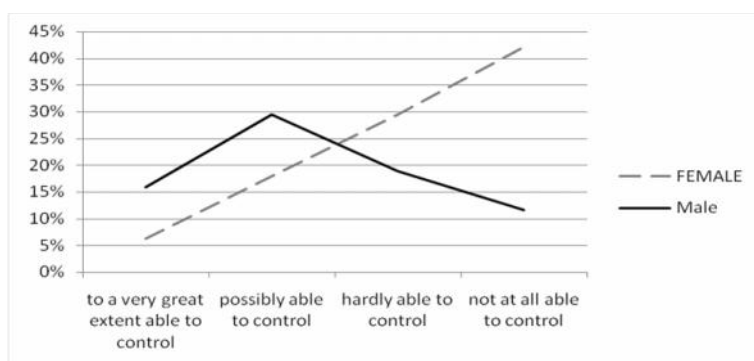


Figure 3: Perception of control of becoming a victim of violent crime

More than half of the respondents believe that “Rape”, “Robbery and Burglary at home”, “Being violently attacked by a stranger in the street” and “Murder” have decreased during the last five years while 60% believe that being robbed and mugged in the street has increased during the last five years (see Table 1). The trend partly mirrors the official crime statistics. However, rape and murder has been stable level over the last five years (see Figure 1).

Contrary to the dominant perception, robbery at residential premises has tripled from 2007 with 54 reported incidences, to 2011/12 with 143 reported incidences (South African Police Service). On the other hand residential burglaries have decreased by 36% from 2007/08 to 2011/12 which also affirms the perception of the local community. The questionnaire also evaluated the level of informal control in order to assess the community cohesion. Over 70% of the local community agreed to the statements that people would help when there is trouble in the area. Also, 72% agreed that if children or women get harassed in their area, local people will tell the

offenders off. Furthermore, 71% believe that local people will call the police if someone is acting suspiciously or causing trouble. A substantial number of respondents (53%) agreed that the community functions as a close tight-knit unit which serves as an indicator of strong community cohesion.

Table 1: Beliefs about Increase/Decrease of crime

	Increased	Decreased
Rape	37%	63%
Robbery at home	40%	60%
Burglary at home	42%	58%
Violently attacked by a stranger in street	48%	52%
Murder	49%	51%
Robbed or mugged in the street	60%	40%

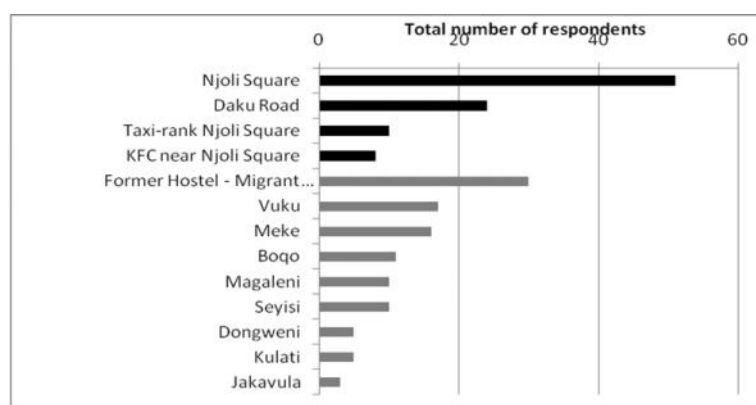


Figure 4: Spaces of fear in KwaZakhele around Njoli Square

Spaces of fear

The results indicate that 53% refer explicitly to Njoli Square as a space of fear while 97, 9% identified Njoli Square plus certain spots around Njoli Square as a space of fear. These spots in immediate distance to the Njoli Square are the Daku Road, the Taxi Rank and the business Kentucky Fried Chicken (see black bars in Figure 3 and also the spatial pattern of spaces of fear on Map 2).

Another spot that was categorized as a space of fear was the KwaZakhele Migrant Hostel, previously a hostel for migrant labourers in use during Apartheid.⁴ After 1991 the hostel was transformed to family units, but it still carries the stigmatization of a dangerous place, where people fear to walk by more than 20 years of its functional transformation. This shows that once a spot has been labelled it is hard to deconstruct these perceptions over time

⁴Initially the hostel was for male (black) labourers, from the homelands or bantustans (areas African people were relegated to under the Land Act of 1913 which made it illegal for Africans to own land) who came to Port Elizabeth to work for different industries during Apartheid. In 1991 the rooms were transferred to qualifying tenants and changed to family units (Mataka, 2013).

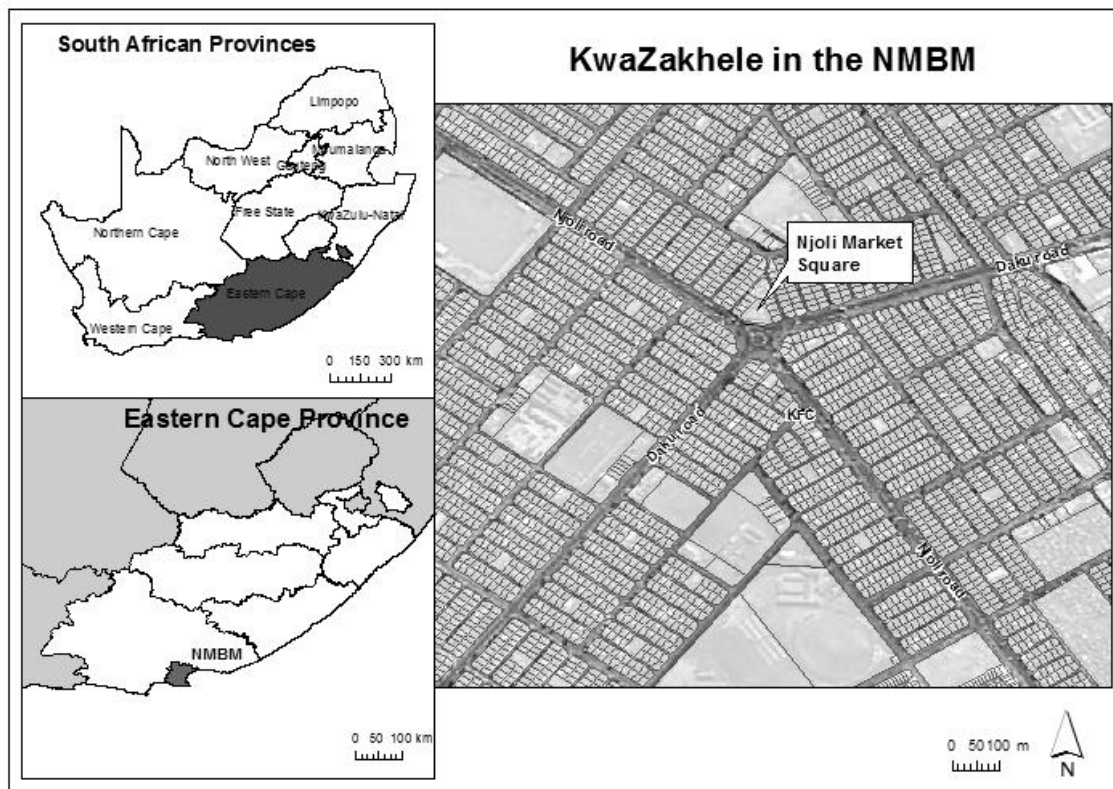


Figure 5: Spaces of fear around Njoli Square KwaZakhele

The roads Vuku and Meke were also identified as spaces of fear. In these roads two vibrant Shebeens⁵ are located and the respondents said that they felt especially vulnerable at weekends and at the end of the months, when salaries were paid. As a consequence respondents believe that boundaries of the consumerists are weak to harass people. Moreover they stated that criminals target these areas because they consider tavern-goers easy victims for robbery. Women in particular fear these places because they are anxious about sexual harassment by both tavern-goers and criminals that target the customers of the sheens.

Construction of Spaces of Fear

The construction of spaces of fear is influenced by various factors. Almost three-quarters of the interviewees who referred to Njoli Square as a space of fear said that the reason is because they often see "Tsotsis"⁶ loitering in that area and harassing people. More than half of them stated they fear going there because they had heard from people that it is not a safe place. This can be drawn back to the theory that space is an element of communication and can influence people in their interpretation, actions and beliefs which shape the mental picture of the space. Almost half of the respondents, who label Njoli Square as very unsafe, indicated it is because of people taking drugs on the street. It is worth noticing that one quarter of the respondents, who considered Njoli Square as a space of fear, interpret it as such

⁵Informal and generally unlicensed bar or liquor tavern in the township.

⁶Tsotsi is a South African term, which is generally refers to a young urban male criminal (Hurst, 2009).

because they were victimized there (see Figure 3). Victimization and fear correlate not as strongly as the variables mentioned above.

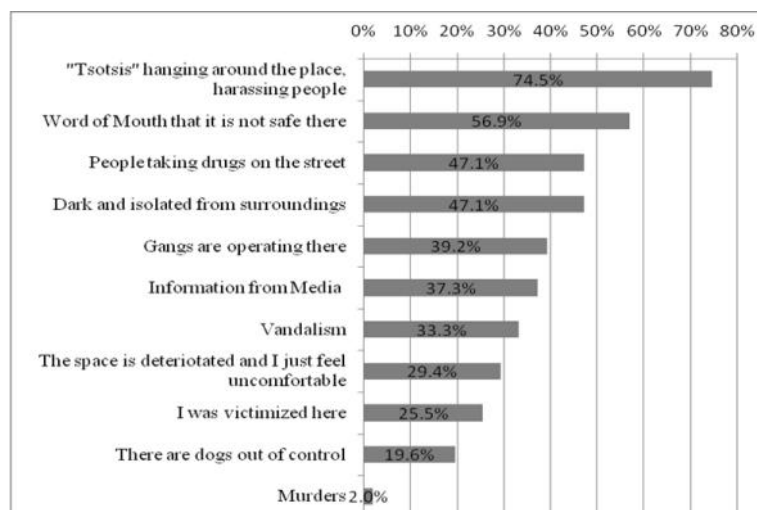


Figure 6: Construction of spaces of fear

Coping Strategies for safety and security

The KwaZakhele community applies no avoidance strategy to spaces of fear. More than two thirds of all interviewees clarified that passing these spaces is unavoidable in their everyday life because of groceries, work, school, visiting relatives, friends or because they live there. Around 60% of all interviewees stated that they always walk in groups or ask family or friends to accompany them when they have to leave the house (Figure 5).

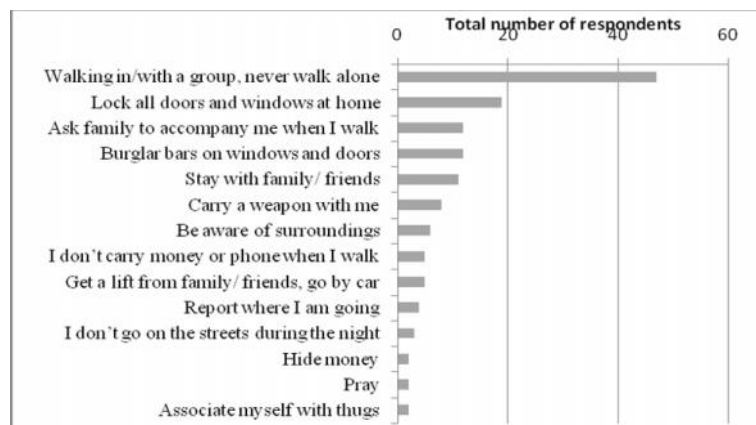


Figure 7: Coping Strategies for safety and security

In high order businesses bullet proof windows are installed and also these properties are linked to private security companies as a consequence of past robberies. Approximately 88% of all respondents warn their friends and family about the spaces they perceive as unsafe. Furthermore, the KwaZakhele community protect themselves and their properties by locking doors, erecting boundary walls and installing burglar bars. The implementation of security measurements in private properties shows that robberies and burglaries in private properties are feared. This perception epitomises the high increase of robberies at residential premises over the last few years. Respondents also consider the reporting of their destination to friends or family as important in case they do not reach it safely. Hence, it is seen as

important to report one's arrival at the destination to the same person. Interestingly, prayer was applied as a coping strategy to feel safer. In particular, younger people (20-30 years) said they adopt the attitude of the local criminals when moving in the public space by using the same language and body language as the criminals.

Urban upgrading programmes and the feeling of safety and security

The respondents were requested to respond to whether the upgrading and improvement of the neighborhood environment, and more particularly in the area where crime is rife, would reduce insecurity and spaces of fear. The responses emphasized significant differences in describing the impact of upgrading at Njoli Square on crime. The results indicated that a fair percentage (55%) of the respondents believe that the upgrading initiative will not decrease crime, and therefore, the feeling of security will not increase. The respondents stressed that as soon as the new services and business complexes are in place criminals will have access to a fertile ground for criminals who will continue with their intimidation of customers and robbing properties and customers. A substantial number of the respondents indicated that stealing is a form of employment which is mainly perpetuated and exacerbated by poverty. A fair percentage (55%) of the respondents indicated that urban renewal might reduce crime at Njoli Square, but they also foresee its reduction as more of a displacement of it to another spot.

However, some viewed the upgrading of Njoli Square as having a positive effect with 39% saying that it will increase the feeling of security in the area because of more security guards and police control to prevent crime. At the same time part of the community believes, in the long term the upgrading will contribute to job creation and poverty reduction since development and service delivery will be encouraged in the area and attract more business and development.

Local community recommendations for safety and security strategies

The recommendations can be used as an impulse for strategies that can be developed in collaboration with the municipality, government officials or social projects. Police patrolling was the most mentioned strategy to deal with safety and security in the area. The fact that a fair percentage (52%) of the respondents indicated that regular patrolling of the police would contribute to the feeling of security might indicate the invisibility of the police in the area and thus reflect the poor security service delivered by the government. Improved security measures like cameras, security guards and efficient street lights were also suggested by the respondents. Community engagement was regarded as beneficial in dealing with crime and its consequences which could be achieved through street committees, neighbourhood watch, early warning systems (whistle blowers) and improvement of community cohesion. A consistent reporting of crime to the police was also suggested, as well as the stricter prosecution of criminals. Indeed, the provision of employment opportunities for the youth was recommended. The interviews revealed that the youth were engaged in criminal activities as a form of employment. This concurs with the national victimisation study where 66% of the households believed that social and economic development was the more effective way of reducing crime (Statistics South Africa, 2012).

Conclusion

The motivation of the study was to gain empirical data and research knowledge about urban insecurities and spaces of fear in the townships where people are most affected by crime and violence. Njoli Square and its surroundings have been clearly identified as spaces of fear. At the same time insecurity caused by crime is a daily feeling that influences the residents continuously in their movement and decision making. As the study details holistic and effective strategies could possibly involve or start with the government playing a key role in reducing crime by implementing valuable security measures against crime, such as police patrol and financial investment for technology, which will monitor crime. The engagement of the local community through neighbourhood watch and the development of early-warning systems like whistle-blowers are also recommended strategies. More crucially, employment initiatives play a key role in addressing the challenge sustainably. Job training and personal empowerment for the youth and unemployed are important for social and economic development, sustainability and self-reliance. Finally, religious groups and the NGOs could be engaged and function in terms of transforming the mind-set of people on crime through education. Moreover, they serve for spiritual and emotional support, and training on soft skills, which are as important as teaching business acumen.

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III. Cultural landscapes



Acropolis, Athens (Source: Nico Kotze)

Sustainable and unsustainable changes of urban landscape as a result of revitalization of inner-city post-industrial urban fallows. The case of Manchester in the UK, Lyon in France and Łódź in Poland*.

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Abstract: According to numerous geographical studies, revitalization of post-industrial urban areas is considered a great opportunity to create modern and well equipped public space, not only in former socialist cities in Central-Eastern Europe but in Western European cities as well. The new image of their central areas does not only reflect special transition, but also the economic and social changes. As far as urban landscape changes are concerned, the process of revitalization of degraded inner-city areas has been varied in Manchester, Lyon and Łódź. However, the case studies allowed indicating the distinct urban governance and financial capabilities as leading external factors and the individualized morphogenetic evolution of their central space as the essential internal factor. Basically, results of the research showed the morphological transformation of inner-city post-industrial urban fallows can be sustainable as well as unsustainable. That is to say, the central space area cohesion can be sustained, impaired or scarcely created depending not only on the revitalization process properties but also the morphogenetic of each settlement as the most influential factor. The crucial aim of the paper is to indicate common morphological features of Manchester, Lyon and Łódź urban space that determinate its contemporary spatio-functional alterations and public space equipment as a result of revitalization of post-industrial urban fallows.

Introduction

The revitalization of post-industrial urban areas is a new phenomenon in the context of city construction history. Functional and spatial transformations of post-industrial areas have led to the creation of a new morphological unit that brings about changes in the spatial organization of a whole city. This issue has been touched upon only sporadically in reference books and it does not usually accompany the studies on morphological changes of given industrial areas. The matter of urban area hierarchy change seems to be particularly crucial when one takes into account post-industrial inner-city area revitalization programmes, which generate centrally-located urban spaces – the new central space. This observation brings one to the fundamental questions about the nature of the relation between the old (existing before) and the new central space and about the factors that influence the nature of this relation. It consists of varied morphological units and elements, which have gained the greatest importance during the development of the city due to the influence of numerous forces and processes of endogenic and egzogenic nature. Central space can include such spatial elements as streets and squares with the adjacent blocks, or some more morphologically complex structures, for example, districts.

*"The research project has been financed by The National Centre for Science awarded on the basis of decision-DEC 2011/03/N/HS4/03145"

Research problem

This paper presents integrated studies on the morphological and functional structures of contemporary European cities' central space. The crux of the research problem is to answer the question: how does revitalization of inner-city post-industrial urban areas change the organization of central space in European cities?

The adopted research assumption allows for constructing the following hypothesis: as a result of the process of inner-city post-industrial area revitalization, a new central space is created, whose relations to the old central space are based on:

1. cooperation of the old and the new central space;
2. cooperation between the old and the new central space;
3. conglomeration of several independent and non-integrated locations of central spaces.

In order to verify this research hypothesis, studies on Manchester, Lyon and Łódź have been conducted. These are formerly industrial (textile) cities, which now complement the capital cities and have a similar number of inhabitants. Nevertheless, the process of central space formation has been very different in each of those cities, which allows one to observe the influence of revitalization on the transformation of central space and identify the factors that determine the present relations between the new and the old ones. The following areas underwent detailed morphological research: Castlefield, City Centre and Gaythorn in Manchester, Confluence in Lyon, and in Łódź: "Manufaktura" area and a project connected with spatio-functional transformations of Łódź Fabryczna train station district.

Results the research in Manchester, Lyon and Łódź

On the basis of the central space development research in Manchester, Lyon and Łódź, it has been concluded that the development process proceeded in stages and it had its own individual nature in each of the cities. The number of central space development stages and their length was varied due to different economic, technological and geopolitical factors, which influenced the development of those cities.

The central space formation was analysed in the context of three phases in the history of the development of those cities: pre-industrial, industrial and post-industrial. In the pre-industrial phase of city development, the space of exchange had a superior role in the slow, but constant growth of the central space. Among the studied cities, Lyon experienced the fastest growth in this phase. Between the Roman period and the 19th-century industrial revolution in Lyon, the city experienced a continued growth, together with a gradual territorial and functional expansion. This contributed to generating a new central area, which initially complemented the previous central space structure. Later, it started gaining a dominant position in the urban area hierarchy. However, this process did not cause any material or institutional downgrade of the old central space. Due to Lyon's topographic conditions, its central space developed as a multi-part space. In the pre-industrial period, Lyon gained importance in national and international settlement networks, which was the result of its convenient geopolitical location. This importance was reflected in a high degree of complexity and intensity of Lyon's central space (figure 1).

Until the turn of the 19th century, the central space in Manchester demonstrated a slower pace of growth than the one in Lyon. This was the effect of a lack of temporal and spatial continuity between the Roman and the medieval core of the city. In the pre-industrial period, Manchester was a small city of handicraft and trade. It had a provincial character, which was reflected in the morphology of the central space being created at the time. Hence, the area was smaller in size, less complex and less intensive in comparison to the one in Lyon (figure 1).

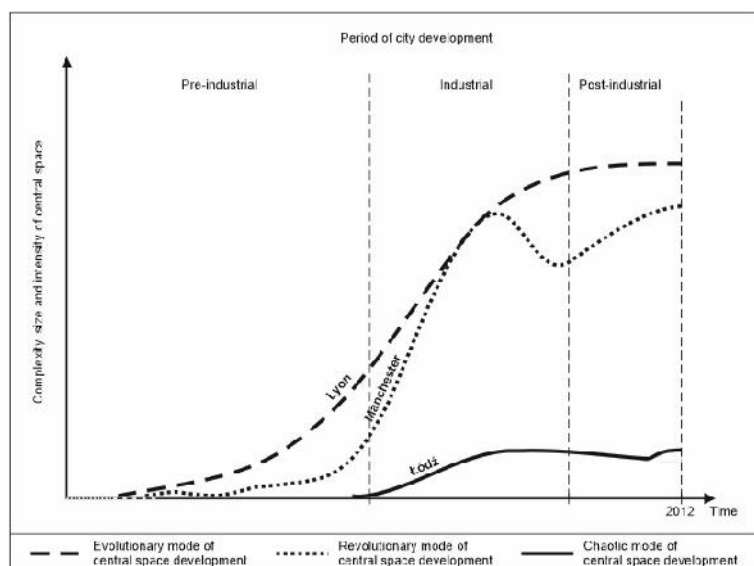


Figure 1: Central space development in Manchester, Lyon and Łódź (Source: Author).

Among the three cities discussed, central space of Łódź was the least developed in the eve of the 19th-century industrial revolution. It was in the early initial phase (figure 1). This stemmed from the fact that the spatial and functional city structures in those times were dominated by agricultural activities and from the lack of institutions which would have supralocal influence.

In the 19th century and in the first half of the 20th century, morphological structures of Manchester, Lyon and Łódź, especially their downtown parts, adjusted to the needs of a new city genic phenomenon – industry, in particular, textile industry. Therefore, the central space organization changed significantly. Industrialization disturbed the traditional space of exchange and the public domain. This influence was more visible when central space was less developed in its size, complexity and intensity. In Lyon, industrial area development in the first half of the 19th century increased central space growth dynamics, though the area was still developing gradually. The crisis and breakdown of industry in the second half of the 20th century did not disturb the central space sustained transformation process either (figure 1). This stemmed from a subordinate role of the industrial areas in comparison to other metropolitan functions, which were influencing the formation of the central space.

In contrast, morphological changes of Manchester central space showed a significant correlation with the process of new industrial area growth. The 19th-century industrialisation was decisive in the process of dynamic, complex and intensive central space growth while the crisis and collapse of industry in the 20th century caused recession. During the period of Manchester's industrial development, its central space was shaped abruptly, as it was in the preindustrial period (figure 1).

In the 19th and the 20th century, Lyon and Manchester became international cities. Owing to the morphogenesis of Lyon's central space, deindustrialization of the city did not influence negatively its position in the international settlement network, in contrast to Manchester, which lost its metropolitan character of a central space due to the breakdown of industry. In the analysed period, both cities developed into economically strong countries that owned numerous territories overseas. It was different in the case of industrially dynamic Łódź. In the 19th century it grew in economically-underdeveloped Russian Empire, which influenced the dynamics of the city's central space growth. The period of centrally-planned economy in the second half of the 20th century established Łódź's peripheral position in the European settlement network. This factor, coupled with the fact that the downtown morphological structure was dominated by industrial areas, limited to a large extent the expansion of the central space, which encompassed only the quarters along Piotrkowska Street and a few smaller enclaves. Similarly to central space in Lyon and Manchester, the one in Łódź experienced the most extensive growth during the 19th-century industrialization. However, due to geopolitical conditions, its growth was significantly less dynamic than the growth of the analysed areas in Western European cities (figure 1). The collapse of industry at the end of 1980s and the beginning of the 1990s did not affect Łódź's central space morphology as much as it affected such area in Manchester (figure 1). The reason for that was a less significant position of central space in Łódź in comparison to the downtown industrial areas.

In all of the analysed cities, transitions in the post-industrial period have led to the development of new central space as a result of post-industrial urban areas revitalization. *In situ* research has shown that the process of spatial and functional transformations had a high or intermediate level of intensity, which should be identified as radical revitalization. Revitalization initiated the secondary cycle of post-industrial areas land use, which resulted in creating new spatial and functional units. They are characterized by morphology adapted to the needs of modern urban space users.

As a result of inner-city post-industrial area revitalization, the organization of central space in Manchester, Lyon and Łódź has been changed. The consequences of morphological transformations differed in each of the cities. They depended on the old central space morphogenesis and its degree of development, meaning its size, complexity and intensity. In Manchester, a revolutionary mode of forming the central space was identified. It was characterized by abrupt development process determined by the economic situation of the industrial areas during the 19th-century revolution and the contemporary post-industrial urban areas (figure 1). Revitalised post-industrial areas show a low degree of variation in morphology and application types in comparison to the old (though modernized) central space. Consequently, these spaces have become *competitors*. The process of central space development in Lyon was evolutionary in nature (figure 1). As a result of Confluence post-industrial area revitalization, the city's old central space was integrated with the new space, which complements it both spatially and institutionally. The present central space of Lyon is varied. On the basis of the conducted research, it has been concluded that there exists a *cooperation* between the old and the new space. In case of Łódź, one mode of creating the central space cannot be identified. The space consists of independently functioning enclaves, the biggest of which is Piotrkowska Street. The post-industrial area revitalization projects which have been finished or are being

carried out now have led to creating new central space fragments, which do not form an integrated morphological structure. Their creation has led to a slight increase in complexity, size and intensity of Łódź's central space (figure 1). The city's seeding, linear and enclave-based character, as well its lack of development patterns, have led to the conclusion that relations based on *conglomeration* can develop between the old and the new part of central space in Łódź. Therefore, the adopted research hypothesis has been positively verified.

The results of analytical research conducted in Manchester, Lyon and Łódź have led to the conclusion that relations based on cooperation or competition have a positive influence on the central space organization while relations based on *conglomeration* impact it negatively. Revitalization of inner-city post-industrial urban areas has contributed to the process in which Manchester central space has been brought back to its former glory and in Lyon, its position has been strengthened. At the same time, it has been concluded that relations based on cooperation and competition promote sustainable changes in the urban landscape, understood as complex morphological (morphogenetic) arrangement. In contrast, in Łódź the concluded revitalization projects in the former industrial areas and the commenced revitalization projects pose a threat of aggravating the recent unsatisfactory condition of the central space, which might impede its further development in the future. In this case, revitalization activities have resulted in exacerbating the negative (unsustainable) changes in the city landscape. Lyon post-industrial urban areas revitalization is a continuation of a stabilized, yet sustainable, central space growth, whereas in Manchester it has caused the space's secondary growth (figure 1).

Conclusion

The conducted morphogenetic and morphological studies in three European cities, different in terms of spatial and functional structure, developing in different economic and geopolitical conditions, allow for indicating some existing tendencies in the central space development cycle, which is illustrated in figure 2.

Revitalisation of intra-urban post-industrial areas is linked with transformation and partial adaptation of the existing morphology for the needs of the city inhabitants. This process is another factor influencing the central space development in European cities (figure 2). The research results confirm Conzenian concept of urban management patterns (Conzen 1960, 1962; Whitehand, 1979; Whitehand and Whitehand, 1983). Industrial area life cycle has also been the subject of discussion for Kaczmarek (2001), who opines that revitalization contributes to stabilizing the cycle. The author of this paper studied the phases of post-industrial land use by sectors III and IV and thus identified the following:

The secondary growth of the central space, demonstrated by the example of Manchester, where such growth contributed to the city regaining its position as a world metropolis that it had in the middle of the 19th century; The stabilization of a well-developed central space, which strengthened the metropolitan position of the city, demonstrated by the example of Lyon; The stagnation of a poorly-developed central space in Łódź, which preserves the provincial position of the city in the European settlement network.

Taking into account the present knowledge of urban geography found in Polish and international reference books, as well as the studies presented in this paper, it

seems possible that there exists secondary growth of a well-developed central space stemming from the process of inner-city post-industrial areas revitalization (figure 2). When referring to the concept of central area growth pattern in European cities, it might be concluded that the secondary growth is possible only when there appear sustainable urban landscape changes that do not disturb a historically-formed hierarchy of urban areas.

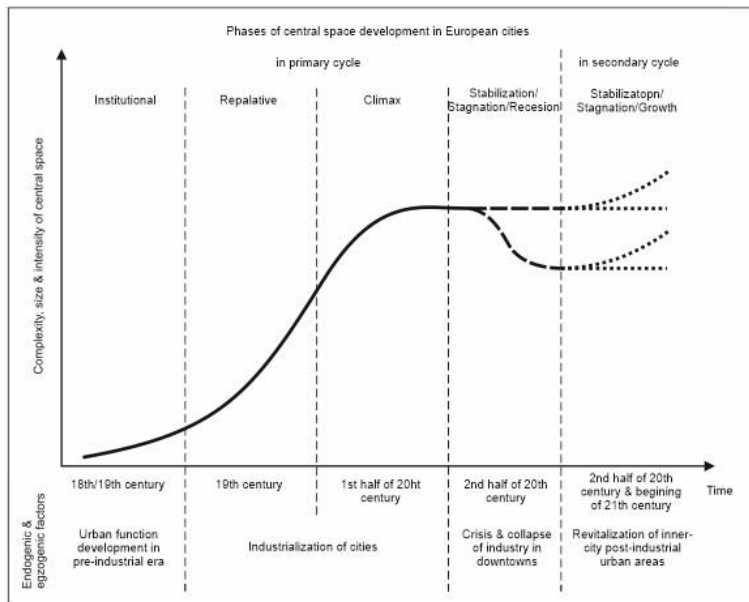


Figure 2: Development cycle of central space in European cities under study (Source: Author).

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Industry and urban heritage^{1*}

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Abstract: Since the 1980s when deindustrialisation became a key process in those regions with an industrial tradition and in cities with a large industrial presence, old factories have begun posing a widespread problem extending to all the European nations which were once scenarios of the First and Second Industrial Revolutions. These ruins pose a territorial challenge because the real estate market cannot assure the ready absorption and reutilization of abandoned plots and buildings. This article analyses the urban impact of old factories abandoned in central and peripheral areas of the city. It also presents the debate about reuse and enhancement of industrial heritage for new uses in relation to the requirements of the new urban economy and the importance of tourism for many cities having an industrial past.

Introduction

The cities of the industrialized world were prosperous as long as industrial activities were a factor in their economic development, in the creation of employment, in the improvement in the standard of living, and as an impulse of culture and contemporary thought, something which occurred during the 19th century and the first half of the 20th century. When industrial society gave way to post-industrialism, urban activities changed their productive profile: tertiary activities gained importance at the expense of industrial ones, and textile production lost economic and social weight. From an urban point of view, the old factories were abandoned because they closed down or moved to suburban or peri-urban areas, giving birth to industrial ruins which have become a challenge for politicians, urban planners and citizens. The current study looks at the origins of this problem, the solutions which have been successful in several European cities, and the challenges and new debates that emerge within the current context regarding the relationship between the city and its industrial heritage.

Industrial heritage as an urban challenge

Since deindustrialisation became a key process in those regions with an industrial tradition and in cities with a large industrial presence, old factories, warehouses, workshops and abandoned plots (which we have agreed to call *industrial ruins*) became a widespread problem during the 1980s and 1990s extending to all the European countries which were scenarios of the First and Second Industrial Revolution (Álvarez, 2011; Benito del Pozo, 2004).

As a result of their magnitude and their nature, these ruins (affecting hundreds of thousands of hectares) began posing a territorial challenge because the real estate market could not assure the ready absorption and reutilization of plots and buildings abandoned due to the closing down of manufacturing businesses (large concerns as

^{1*}The research was developed within the R and D Research Project and funded by the Spanish Ministry of Science and Innovation (CSO2010-18471 and CSO2010-16298.).

well as small workshops). Furthermore, the unproductive industrial plots, whether or not containing buildings (also known as industrial wastelands) represented an environmental risk and a degradation factor for urban areas, and also a source of expenses for the public administrations.

With the purpose of containing these problems, the European Union has designed and activated a large number of economic, urban and legislative measures which have allowed for the development of initiatives of recovery and valorisation of abandoned factories and industrial sites providing them with an alternative use or for new productive activities, which within the urban setting will strengthen the city's economy and rezone neighbourhoods that have become impoverished and deteriorated due to deindustrialization (Conséil de l'Europe, 2002).

The institutional attention given to the problem of industrial ruins has been accompanied by a growing social sensitivity. Thus, many buildings, works of engineering and precarious landscapes have been saved from extinction, deterioration or ruin (thanks in part to the efforts of cultural and neighbourhood groups and associations), by being considered true monuments. As such, many of these material vestiges of our industrial past have been protected by being declared *Bien de Interés Cultural* (Properties of Cultural Interest), or their equivalent, a designation regulated in Spain and neighbouring countries by regional heritage laws. An instrument which protects, preserves, and favours the restoration of industrial heritage, particularly factory compounds and unique industrial buildings occupying central areas of cities or their outskirts, although it also includes mining and rural areas (ICOMOS, 1999; Conseil de l'Europe, 2002).

Within the international sphere, there are industrial compounds and landscapes all around the world that have been declared *World Heritage Sites* by the UNESCO, among which the well-known Völklingen iron and steel works in Germany, founded in 1873 and closed in 1986. This location is and recognized as a world monument in 1994, being the first industrial building or facility which would be likened — in cultural terms — to a Gothic cathedral or Greek temple (UNESCO, World Heritage List).

On an urban scale, interventions seeking to value old factories and industrial sites respond to initiatives which are at the service of a long-range strategy aimed at rezoning neighbourhoods or marginal areas. Creating new networks, or generating focal points of opportunities in places where the crises of traditional activities is most deeply felt (TICCIH, 2010, Sabaté and Benito 2010).

The industrial building (the factory, the warehouse, the workshop, or even the workers' quarters) is in many cases the resource which serves for putting together a strategy of urban revitalization which is not limited to conservation, restoration or rehabilitation of the site. It forms part of a project to create a city around the obsolete facilities and to preserve them as an expression of collective memory — as part of the history of industry, technology and workplaces. In this sense, the old factory serves as a witness and a symbol of an activity which represented for the city progress and abundance in a not-so-distant past (Álvarez, 2001; Cañizares, 2010; TICCIH, 2010).

Keys to the theoretical debate on industrial heritage

The renewal in the perception and proposals of the use of industrial heritage comes from those authors who suggest a subjective reading of the landscapes, of all types

of landscapes: the material and concrete landscapes resulting from complex processes across time to the continuous action of humans over nature. The landscapes which are products of memory and perception. The landscape is explained as a social construction and conceived as “an extension of the cultural heritage and its interpretation” (Nogué, 2007).

This discourse includes “the other landscapes”, those which are on the margins and we don’t see due to various reasons, but which show that the landscape is truly a social construction (Nogué, 2007). According to this author, landscapes are the reflection of territorial organization and are socially constructed within the framework of complex and changing relationships of class, gender, ethnicity and power. Thus, the glances over landscapes are diverse and sometimes opposed, but all of them are essential for understanding the relationship of humans with territory, with places (Maderuelo, 2010). The growing importance of the intangible can be seen in the list of places which have been declared World Heritage Sites by the UNESCO, particularly those which protect the intangible cultural heritage.

Among the landscapes that don’t fit within the conventional idea of a *landscape* are the industrial ruins, the old abandoned factories which still provoke rejection and incomprehension. These are, for many, obsolete elements and proof of a failure which they wish to forget — to erase from memory. In other words: landscapes which they wish to transform for the creation of something new by making a *tabula rasa* of the past. Industrial heritage interventions frequently follow a similar path: the creation of a new building from an old container — a different and modern construction which will once again give us a positive image of progress. There are also interventions which demolish old industrial buildings and structures to obtain plots for residential uses and land for new economic activities (Benito del Pozo, 2012).

The elimination of certain elements from the landscape, or directly substituting the landscape for another, has a relationship with a component which until recently was object of little consideration: identity. And related to this, the idea of a local project. As pointed out by Conti (2011), the valuation of territorial specificities generates *localized* competitive advantages which would allow different places to form global networks and thus profit from the tendencies of growth and expansion linked to processes originating in multiple places simultaneously. In our case, this means reformulating the concept of heritage as a local project. Under this perspective, industrial heritage falls within a broader context: the local dimension of development which implies overcoming the idea of territory as a support of exploitable resources, in favour of a vision of territory as a heritage to be valued with elements of extraordinary interest and potential.

Within this interpretation, the industrial legacy is a sign of identity of places, a distinctive element which allows putting together singular projects supported by the population at large and by the agents who intervene in the production and management of cultural spaces (Dewarrat 2003; Graham and Howard, 2009). The local population identifies itself with their industrial heritage (memories of the work, of the daily life... social memories) and becomes involved in these projects, participating in institutional proposals and cooperating with the initiatives of restoration and appreciation of a heritage represented by monumental properties and bygone landscapes now ignored, forgotten or considered *kitsch* (Atkinson, 2007).

Finally, there are approaches which defend the value of ruins for generating a genuine landscape without the need of intervention for changing their appearance. It is a question of the defence of the crude, the ugly, and the remains of an aggressive and abandoned activity which has left behind scars in the landscape, especially in the urban landscape. These ruins are found — according to British writer Tim Edensor (2005a) — at the centre of individual social memory and take on a new sense. They also acquire an enormous potential as transgressor and provocative elements: in confrontation to the well-maintained and orderly spaces characteristic of Western cities, the abandoned industrial spaces are a challenge for politicians, urban planners and citizens, offering an eerie image of the past, forcing an encounter with an uncomfortable reality. These are landscapes in danger which are strongly rooted in the memory and meaning of a place and which defy the senses, reasons for which Edensor (2005b) defends their existence within the framework of a more flexible and leisurely urban planning.

Models of intervention in the industrial heritage of cities

Among the European examples of industrial heritage intervention, the German city of Würzburg stands out. This city is immersed in a process of restoration which includes the recovery of antiquated and abandoned industrial spaces. Local authorities began the process by restoring and enlarging an old grain silo built in 1904 and located in the city's fluvial port, on the shores of the River Main, to turn it into a Cultural Centre and Municipal Museum of Modern and Contemporary Art. This intervention was the starting point for the restoration of facilities and spaces of public use along the whole port neighbourhood (Pardo, 2010).

Of even greater urban magnitude and impact was the transformation of Vienna's four gasometers into a mixed complex of residential, commercial and cultural use. This was an intervention of great importance in which the public authorities were able to reverse a situation of degradation and abandonment of the original industrial neighbourhood and create, at the hands of renowned architects and urban planners, a space of high quality and new centrality where ruins and ugliness have given way to residential revitalization and economic prosperity. As well as turning the area into an attractive tourist destination along the banks of the Danube, located only 12 minutes by metro (Line 3) from St. Stephen's Cathedral, the heart of the Austrian capital (Benito del Pozo, 2004; 2012).

More modest but equally revealing the new relationship of cities with their industrial vestiges is the municipal initiative to rehabilitate the "Eridania" sugar factory, a nineteenth century building of iron and brick located in the industrial area near Parma's historic centre, turning it into an auditorium — a cultural facility surrounded by gardens — thus measurably improving the quality of the area and the urban landscape.

Interventions into industrial heritage in Spain are relatively recent and cover a wide spectrum of projects which range from the transformation of old factories into business centres, hotels, museums, libraries, archives and commercial premises. From the cultural and recreational point of view, cities large as well as small have shown interest in recovering some of their most emblematic industrial buildings and applying them to the restructuring and regeneration of the urban grid. Thus broadening cultural and leisure offerings, while at the same time strengthening the city's tourist attractions (Cañizares, 2010; Sabaté and Benito, 2010).

Barcelona's magnificent *Casaramona* (1913-1920) textile factory, located at the foot of Montjuïc, is worth mentioning. The building was designed by modernist architect Puig y Cadafalch. Built with a brick façade — following the Catalanian building scheme — it was awarded the Barcelona City Council's prize for the best building built in 1912. The factory was closed down in 1920 and later served as police headquarters. In 1963, "La Caixa" bought the building and restored it. Installed a large cultural centre including exhibition rooms, an art laboratory, and the headquarters of the *Caixa Forum* Cultural Foundation. In 1976, it was declared a *Monumento Histórico Nacional* (National Historic Monument) (Benito del Pozo, 2004).

In Valladolid, a municipal initiative brought about the restoration of the *La Rosa* flour factory in "El Palero", thus creating the *Museo de la Ciencia* (Museum of Science). Located southeast of the city between the right bank of the River Pisuerga and Salamanca Avenue, an area that had been greatly deteriorated and was improved due to this intervention which expands the cultural facilities and museum offerings of this Castilian capital (Arnáiz Alonso, 211).

In a very different city, Madrid, we must mention the Regional Government's initiative to save the *El Águila* (1912) beer factory, located within the urban centre, with a project that turns the warehouses, offices and silos which gave industrial life to a whole block of the Arganzuela neighbourhood into the headquarters of the *Archivo y Biblioteca Regional* (Regional Archive and Library). This intervention has helped promote the south part of the capital and has extended the cultural hub of the Paseo del Prado (Benito del Pozo, 2004; Pardo 2010).

There are also cities of less industrialization, such as León, which have a special or particular industrial heritage, as is the case of the *Santa Elvira* (1933-1992) sugar refinery. Until recently, this factory seemed condemned to being demolished, but certain turns in national politics and in the local government have made it possible to unblock the urban planning situation, and this factory's main buildings have become property of the León City Council. The Council plans to turn them into a convention centre, a project recently tendered to French architect Dominique Perrault. This intervention will allow for rezoning and giving a new function to the city's west side because it is supported by the urban planning proposal of extending the hub comprised of the Cathedral – Santo Domingo – Plaza de Guzmán, as well as relocating the traditional train station next to the future high-speed train station (Arnáiz Alonso, 2011).

An experience in complete reutilization: the case of Avilés (Spain)

In Asturias we find the example of Avilés, a true city-factory organized as such during the hegemonic days of the great ENSIDESA public iron and steel company, situated in the estuary which is the backbone of the current urban space resulting from Franco's industrial policies of the 1950s, a period of autarchy and scarcity which required great effort from the central government to boost the national industry based on basic manufacturing (such as iron and steel) and favoured those regions having coal deposits and seaports.

The subsequent political and economic evolution permitted Ensidesa's survival until a series of crises during the 1980s and 1990s put an end to the great iron and steel works of Avilés. The closing down of the facilities and their dismantling began in 1997 and left more than 200 hectares of urban industrial land which local authorities

had to manage within the framework of re-industrialization policies with basically one urban instrument: the *Plan General de Ordenación Urbana* (General Plan of Town Planning) of 2001.

Within this context of urban evolution in Avilés and the process of making the most of its industrial legacy, we must mention the following projects:

- a) The tannery known as *La Curtidora* (1902), a splendid example of the rehabilitation of an industrial building to house initiatives which stimulate the urban economy and place them together within a centre of municipal companies. The project began in 1995 and has become established as a business centre linked to the city's central area (Figure 1).



Figure 1: Old tannery turned into a business centre in Avilés (Spain) (Source: Photograph by Paz Benito, 2004).

- b) Within the same urban hub we find the *El Águila* flour factory (1893), restored by a school workshop and currently used as a fire station, a type of facility which is not very common for an old industrial “container” and which, if it had not been due to public interest, would have disappeared (Figure 2).



Figure 2: Beer factory transformed into urban facilities (Source: Photograph by Paz Benito, 2004).

- c) The improvement and rezoning of the Avilés estuary called for the restoration of noteworthy historic buildings on the estuary's banks, buildings which had once

played a prominent role in the industrialization of this sector of the city; e.g., the *Balsera* warehouses, currently in ruins, on the estuary's left bank, are an example of an industrial legacy which is unused and undergoing a process of constant deterioration.



Figure 3: Abandoned warehouses across from the iron and steel docks at Avilés (Spain) (Source: Photograph by Paz Benito, 2004).

- d) Finally, we must mention the legacy of ENSIDESA, the most important for the city of Avilés due to its geographical location, its size (some 200 hectares), and the interesting aspects of its buildings and facilities (Figure 4). It is a space offering great possibilities for the city to modernize itself, broaden its facilities, provide support for firms in the fields of new technologies and advanced services — whose current needs are now met by the *Parque Empresarial Principado de Asturias* (Principality of Asturias Business Park). The old iron and steel docks have been utilized to promote culture and urban leisure with a *Centro Cultural* (Cultural Centre) which opened in 2011, whose architecture thoroughly changes the landscape of the estuary as well as the city (Figure 5). This intervention aims to encourage a new urban tourism offering the incentive of an industrial past with visible and powerful remnants in the estuary's landscape.

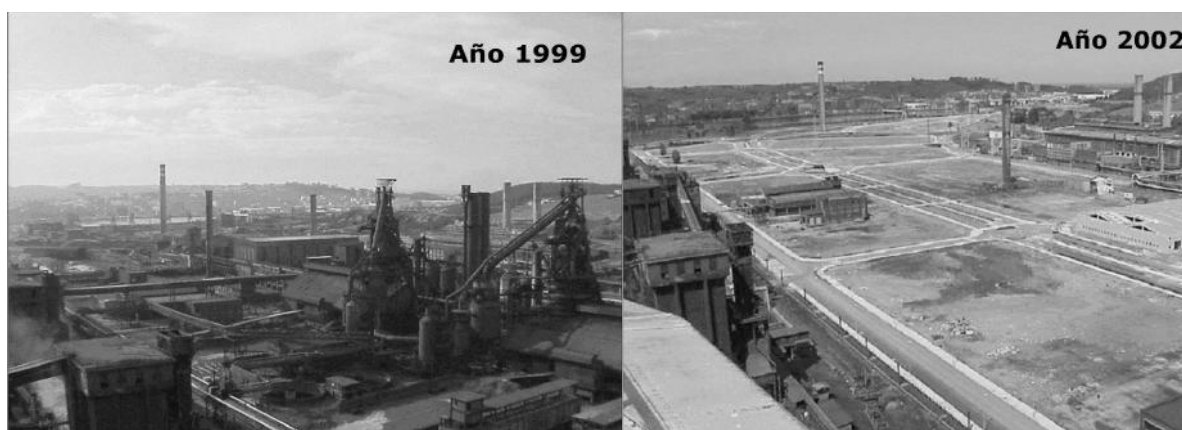


Figure 4: Transformation of the urban landscape as a result of the intervention at the abandoned iron and steel works in Avilés (Spain) (Source: Avilés City Council).



Figure 5: Niemeyer Cultural Centre built on an abandoned iron and steel site in Avilés (Spain) (Source: Virtual image provided by the Avilés City Council in 2010).

Conclusion

We may conclude by saying that the intelligent cities are those which can make the most of their heritage by creating spaces of opportunity, increasing urban competitiveness, enhancing the quality of their environment, and improving the quality of life of its citizens.

Public or private intervention into industrial heritage, however, must be responsible and selective: one cannot protect and preserve all industrial remains because this would mean fossilizing the territory and endangering the future of urban areas which need to renovate their plots and make available productive spaces to substitute those that have become obsolete and useless. We recommend the preservation and valorisation of compounds and buildings which are symbolic or relevant for some specific reason (historical-artistic value, collective emblem or symbol...), giving them a use above and beyond the mere contemplative, and raising them to the category of active resources for urban revitalization, whether by providing them with a new function (which can be cultural, recreational, educational), or for alternative productive activities (business centres, tertiary spaces and new technology industries).

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Tall buildings as urban objects for sustainable cities? A new approach to characterise urbanity of high-rises

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Abstract: Building skyward is considered as a solution for European cities aiming for higher density and international visibility. This is reflected in the emergence of new high-rise forms: mixed-use towers and sometimes 'vertical cities' are both usually conceived as more 'urban'. [E1] However, there is a lack of research concerning the impact of these tall buildings on the urbanism of existing cities. The objective of this paper is, therefore, to fill this gap and analyse the way high-rises relate to their urban surroundings and impact the city on a larger scale. This paper presents a literature review on skyscrapers and sustainable cities which shows the necessity for towers and their related semi-public spaces to be integrated within the existing urban fabric. In the context of privatisation of public spaces and the appearance of new contemporary urbanity, we find that the main emerging issue concerning these new towers is their ability to be 'urban', which requires tools to analyse and characterise. Our aim is to propose a new approach to the issue of high-rise buildings in European cities by providing an analytical grid composed of a set of criteria which can determine the degree of urbanity of tall buildings. Our findings can help in designing, developing and planning better integrated and [E2]more urban towers, that are not only architectural but also urban objects for sustainable cities.

Introduction

Despite a controversial scientific and societal debate, building skyward is experiencing a new rise in France and in Paris. [E3] New high-rise forms are indeed appearing on the French building market; more urban and multifunctional than the pioneers of the 1970s; they are now justified as intensifying [E4] objects of the existing city. The ability of these "pieces of vertical city" is to enable intensity and urbanity (urban quality) which will be examined. [E5] At first, through a historical perspective of the evolution of concepts of towers in France and around the world and through an analysis of built and planned towers within the Ile-de-France region, we show that social demand for a new form of "vertical city" exists. Expanding on [E6]the technical, social and territorial characteristics related to these particular objects, we propose a reflection on their ability to be 'urban'. These considerations highlight the issue of public-private relationships at organisational and spatial levels concerning both production and integration of such projects within the urban fabric.

Historical perspective of the evolution of high-rise concepts in France and around the world

Chronology of worldwide approaches to high-rises

Since the beginning of the urban society, the status and role of high constructions have evolved. Initially, and until the late nineteenth century, towers and high buildings were intended for the expression of political or religious power. In the early 1900s, with the first habitable towers dedicated to the tertiary sector, a turning point occurred

in North America: high-rises became symbols of the economic power of some great American companies. Then, in 1950, by playing a role in the ideological confrontation between the United States and the Soviet bloc, towers reconnected with political power. These skyscrapers, symbolic objects and synonyms of economic power and innovation, also had a strong influence on interurban competition: first between New York and Chicago from 1900 to the 1929 economic crisis, and then in the 1990s when the global “race for height” started (Peet, 2011). [E7] Since then, countries have been competing to have one of the world’s highest towers as an acceptance of the capitalist ideology. Nowadays, towers represent more than ever the strength and modernity of a nation, its economic power and its acceptance of globalised lifestyles of global cities (Didelon, 2010; Firley and Gimbal, 2011).

France, like other European countries, has not taken part in this “race for height” so far (Taillandier and Namias, 2009). Most Parisian towers are residential and were built between 1965 and 1975 in response to a housing shortage (Brunet, 2010). The majority are built on artificial ground, and respond to the concept of vertical separation of functions advocated by modern urbanism. In this context of post-world war economic prosperity and rise of tertiary sector, the demand for office spaces was becoming increasingly urgent in Paris and the Ile-de-France region. In response, during the 1950s, the French government proposed the construction of the Parisian business district [E8], *La Défense*. This business district, also built on artificial ground, is since well-placed in the international office space market. While policy guidelines had prohibited the construction of tall buildings in Paris (since 1974), we have recently noted a comeback of planned towers within Paris. To keep up in the international interurban competition and display an image of a twenty-first century city, Paris has decided to erect a few symbolic towers within its territory. These towers are then considered as solutions to the new challenges relating to the pressure on land and densification needs. They become tools for intensifying the city according to the principle that the inclusion of a high-rise in a mono-functional or undeveloped area could create or regenerate the attractiveness and intensity of the neighbourhood (Castex and Rouyer, 2003; Pousse, 2009; Schwanke, 2003; Taillandier, 2009). According to these principles, some outlying neighbourhoods have been chosen by the City of Paris [E9] to receive high-rise development as a symbol of renewal.

A new generation of towers: more multifunctional and more urban.

When considered in the logic of “urban acupuncture”, the intensifier role of towers is governed by certain conditions. Indeed, the urban intensity depends on many factors other than just the built-up density: an intense city is a city of short distances where the links between the functions and uses, the accessibility, the time and space continuity, the proximity, the diversity, the mix [E10] of urban functions, and the quality of public spaces, are essential (Da Cunha and Kaiser, 2009). By grouping urban functions in a restricted area while ensuring space and time continuity, towers could provide an opportunity for intensifying cities. In this case mixed-use towers can be considered as a solution to “rebuild the city on the city” [E11].

Since the beginning of the 21st century, in the United States and China, a new building concept has been appearing: the *Hybrid* or mixed-use building. Its emergence is strongly related to the context of urban densification and a still greater scarcity of useable land. The specific feature of these hybrid buildings is the mixing of several urban functions in a single envelope at a scale that breaks with the

proportions of the traditional city, while perfectly integrating into it. This scale-break is particularly true for mixed-use towers implementing the same principles of diversity and density by overlaying upright urban functions; these therefore are special cases of hybrid building (A+T Architecture Publishers and Holl, 2011; Schwanke, 2003).

Mixed-use buildings are becoming more and more developed in France; most of them are high-rises. Many new towers of the 2000s differ significantly from the pioneers of the 1960s and 1970s; they now offer more often a mix of functions throughout the building and become *mixed-use towers*. They also try to be more “urban” by integrating themselves into the city and its network of public spaces, and by treating their physical and visual relationships with the ground and their surroundings (Evo, 2008; Pousse, 2009; Taillandier, 2009).

The principle of urban diversity at the building scale is brought to a climax with the concept of the *Vertical City* or the city-in-the-sky. These terms are used today to characterise towers which are more human and more liveable and whose links to the ground and the neighbourhood are particularly elaborated. They mix urban functions which are interconnected by a network of common spaces open to the general public, from the ground up to the top, that are similar to the traditional urban fabric (Pomeroy, 2007; Yeang, 2002). To this end, the tower lives 24 hours a day and seven days a week and is highly accessible to the public; it offers common inviting spaces that interact with the ground and the public realm of the horizontal city. These open to the public pedestrian spaces can take different forms (sky-court, atrium on the ground floor, vegetated sky garden, street-in-the-sky, open lobbies, usable in-between spaces...) and could evoke a “sense of place” and become new semi-public spaces of the dense 21st century cities (Pomeroy, 2007; Yeang, 2002). The search for an urban insertion of these streets in the sky could allow the tower to shape the life and attractiveness of the neighbourhood and may enable urbanity and intensity (Castro, 2009).

We ask, therefore, how are these new constructions, intended to intensify and be a part of the symbol of the modern city, different from the towers built previously?

Overview of high-rises within the Ile-de-France region

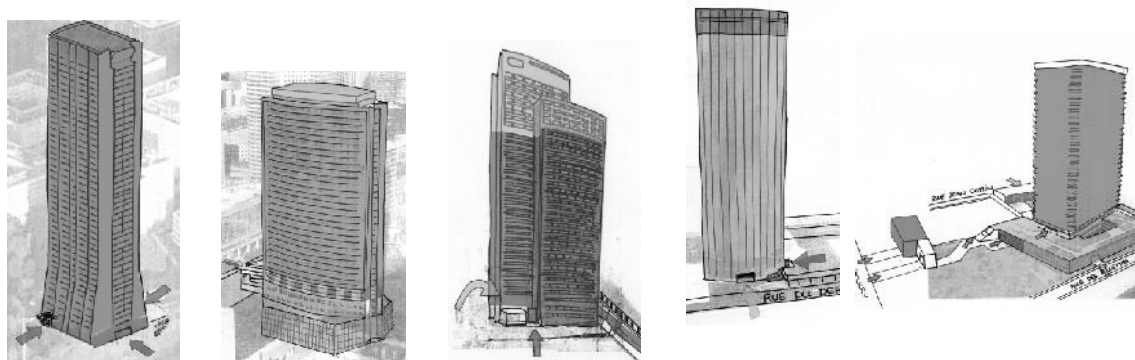
Definitions

There is no international or even French definition of “tower”. In France, the only term recognised and used in the regulations is “*immeuble de grande hauteur*” (IGH) literally “high rise building” in English. It means any building exceeding the maximum height accessible to emergency fire vehicles: 50 meters for residential buildings and 28 meters for all others. Thereafter, we designate as *tower* any building taller than it is wide that exceeds the limit of IGH regulations and stands out from the historic Parisian canopy or from the neighbourhood of reference; that is to say having a significant impact on the skyline of the city. Likewise, there is not only one definition of *mixed-use tower*. We designate as *mixed-use* any high-rise building which vertically mixes at least two main urban functions (offices, housing, shops, hotels and services) (CTBUH definitions).

Mixed-use towers in the Ile-de-France region: analysis of functional diversity and urban integration

During the last ten years in France, an increasing number of mixed-use towers projects have been proposed. They offer programs nesting more and more functions

and public or common areas in order to convince investors and citizens how attractive they can be (Taillandier, 2009). By conducting a census of the towers in Ile de France comparing the available databases* and on the ground observations, we found that there were mixed-use towers built in the 1970s, well before the new generation of the 2000s. We counted five towers that vertically mix at least two urban functions (regardless of the proportions of distribution) in the hundred towers built in Ile-de-France. We also listed "mixed-use" tower projects planned within the Ile-de-France region.^[E13]



Défense 2000 - 1974	Eve – 1974	Les Poissons Ciel - 1974	Montparnasse 1973	Boucry - 1974
Puteaux	Courbevoie	Courbevoie	Paris	Paris
136 m	109 m	128 m	210 m	99 m
Housing + nursery school	Housing + offices	Housing + offices	Offices + panoramic restaurant + touristic panoramic floor	Housing + offices + higher education + medical center ^[E14]
Legend : blue = housing, orange = offices, pink = services				

Figure 13: The five mixed-use towers found within the Ile-de-France region

We analysed the identified towers using the characteristics of the intense city. We first considered the functional diversity (distribution and organisation of functions) and their urban integration (physical and visual continuity, public spaces).^[E15]

We initially observed some homogeneity in the types of functional diversity of existing towers. We counted very few cases of "real" mixed-use high-rise overlapping several functions: rather we notice only one main function to which is added a side-line function (usually shopping or services). We however note differences between the existing mixed-use towers and the future planned towers. The new generation of towers tends to firstly be less mono-functional; of over one hundred built towers in Ile-de-France (having a height over 90m) only five are mixed-use, while today of the less than twenty high-rise projects planned, seven are mixed-use. Secondly, we find that the new mixed-use projects do not necessarily overlap functions much more than the towers of the 70s. However, where the towers of the 1970s completely separated flows and entrances of various uses, the new projects aim to combine users in indoor and outdoor common areas that are often open to the public.

* CTBUH inventory, *L'invention de la tour Européenne* (Taillandier and Namias, 2009), APUR study on height in Paris (APUR, 2007), PSS website inventory, Paris Skyscrapers.

Finally, other differences come to light concerning the urban integration of these towers. First, all of the mixed-use towers of the 70s are totally or partially built on large deck. Second, their entrances are not located at the street level and all break from the form of the traditional Parisian urban fabric. And third, traditionally there has been no physical or visual continuity between the street and the inside of the tower while new projects acknowledge their anchoring to the ground and look for a better integration into the existing city.

According to the number of projects of mixed-use towers within the Ile-de-France region and to the differences observed with the older generation of the 70s, we note a real social demand for new forms of mixed-use and urban towers. If their goal is to enable intensity, we then highlight the prime importance of that urban continuity, quality of public spaces and urbanity, even though these buildings are mainly produced by private stakeholders whose objectives are sometimes antagonistic to those of the public.

A comeback of high-rises within the Ile-de-France region: a renewal of public-private relationships

This public-private issue raises the problem of the actual ability of "vertical cities", and more generally mixed-use towers, to enable social ties and urbanity so essential for implementing the intense city. Indeed, many debates focus on the process of mutation or even disappearance of the urbanity, or urban quality, of contemporary cities (Banzo, 2009; Cybriwsky, 1999; Ghorra-Gobin, 2001, 2006; Pomeroy, 2007). These are directly related to discussions on the noted mutations of contemporary public spaces which are theoretically traditional places for diversity, exchange, confrontation and urbanity (Bassand, Compagnon, Joye, and Stein, 2001; Bertolini, 2006; Fleury, 2010; Foret, 2010; Garnier, 2008; Korosec-Serfaty, 1988; Mitchell, 1995; Picon, 2001). Although there is a debate on the very term 'privatisation', a phenomenon of mutation of these public spaces is widely recognised. It is materialised by a general requirement for control of people and uses, summarising both the need for safe places and attractiveness, as well as the tendency to limit the number of activities and users (privatisation of some public spaces, opening to the public of many privately owned spaces) (Dessouroux, 2003; Fleury, 2010; Gasnier, 2006; Ghorra-Gobin, 2006; Paquot, 2009). These new forms of public spaces considered as privatised by some authors are also seen as new generators of a different but existing sociability (Banzo, 2009; Cybriwsky, 1999; Korosec-Serfaty, 1988; Pomeroy, 2007). Although still widely debated, these issues of urban quality and public spaces have become a challenge for the stakeholders of contemporary cities (Germain, 2002), and high-rises are no exception.

The mixed-use tower as part of the intense city must take these considerations into account; its spaces (inside and outside), privately owned but more and more open to the public, can be considered as new forms of places of sociability of contemporary cities, provided that they ensure a certain continuity with the traditional public spaces (Cybriwsky, 1999; Pomeroy, 2007).. We decide to consider these privately-owned spaces that are open to the general public as potential places of sociability. It is therefore a question of their ability to enable urbanity and to interact with the public spaces of the horizontal city.

However essential is the implementation of urban intensity, these social considerations are unfortunately not always included in the priorities of private

stakeholders of the city. In particular, high-rise construction is taking place in the context of globalisation and territorial competition that changes the stakes for the production of the city (Baraud-Serfaty, 2008; Boisnier, 2010; Nappi-Choulet, 2009; Renard, 2008; Sassen, 2004; Theurillat, 2009). If it is seen as an urban marketing tool and a way of programming urban intensity (Castex and Rouyer, 2003; Didelon, 2010; Huriot, 2011; Paquot, 2008; Pélegrin-Grenel, 2011), high-rise construction nevertheless remains a private object developed and owned by stakeholders (sometimes de-territorialised) with short-term economic and financial profitability objectives (Didelon, 2010; Nappi-Choulet, 2009). However, its towering vertical scale and its symbolic aspect make its impact on public territory not to be underestimated, as the opportunity for development can also cause an important social and urban divide (Pousse, 2009; Schwanke, 2003; Taillandier, 2009). This particular scale, as well as the very complexity of the project, involves collaboration between public and private stakeholders, from not only the early stages to the end of the project but also afterwards. The issues of urbanity and territorial insertion, specific to the public's objectives, are added to those specific to investors, such as profitability and risk minimisation: the tower then reflects the duality between public and private interests at the intersection of the principles and practices of sustainable development and the globalised economy.

This duality, intensified for mixed-use towers or "vertical cities" seeking to be well integrated into the territory, is now also to be taken into account regarding the ability to enable urbanity. Mixed-use towers are associated with a system of specific technical, social and territorial constraints which seem to further complicate their implementation. Further, new issues on the definition of an intense urban object must be integrated into the contemporary city and extend or enable urbanity coming from:

- a lack of adequate regulatory environment,
- strong private ownership, in addition to an expanded territorial impact,
- complicated implementation due to functional diversity and height,
- specific high financial and investment risks,
- an expanded political and social concern.

How can urbanity be enabled or extended in this particular system of constraints?

These findings concerning the territory, stakeholders and public spaces reveal precisely a duality between public and private sectors in both the production of the building and its spatial organisation. The issue of the ability of such objects to enable sociability and to "be urban" requires special thinking on the concept of urbanity and its consideration at building scale. It is then necessary to consider mixed-use towers as objects of the city and think about the characteristics that can improve urban quality: characteristics of both spatial organisation and production. This new scale of urbanity is to be further considered in order to characterise the contribution of high-rises to the city and, more broadly, of large mixed-use buildings combining neighbourhood life at the building scale.

Conclusion

Following a census and an analysis of existing and proposed mixed-use towers within the Ile-de-France region, we have shown that, in the context of international interurban competition, there is a demand for a new form of high-rise buildings. This new form of towers is clearly differentiated from the pioneers of the 70s and breaks with the principles of modern urbanism from this time in order to contribute to the

intense city. These high-rises are mixed-use and look for urban insertion. Assuming mixed-use towers or vertical cities as potential generators of a twenty-first century urbanity and, therefore, as a tool of the intense city, we emphasise the importance of public-private issues in terms of spatial and organisational considerations. It is necessary to first rethink the concept of urbanity at the specific building scale and secondly, to propose the characteristics which apply to high-rises in order to analyse their potential urban contribution. In the longer term, this will lead to new political and operational strategies for better integration of these objects in urban areas during the twenty-first century.

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Halls of residence for researchers, tools of production and the case for promoting university cities: three university cities in France

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Abstract: In the context of developing a European space in higher education, backed up by research into this sphere, the above-mentioned factors, namely halls of residence, tools of production, and the case for promoting university cities, have been perceived as paramount in enabling university cities to attract interest. Furthermore, the accommodation and hosting of researchers is a strategic factor since the population of academic researchers is regarded as an important component in contributing more widely to the international positioning of cities, and would, therefore, be important in promoting local economic development. International researchers are very often considered by public officials as ambassadors and in the context of this paper as prestigious French-speaking partners. Once back home, these foreign researchers would possibly promote the university city in which they resided during their study period, and also report back on conditions in the host country. It is for these reasons that the question of accommodating foreign researchers has been raised since there are specific problems attached to this issue. Some university cities have already experimented with establishing innovative structures and services such as halls of residence for foreign researchers, whereas others have merely given thought to this matter. The aim of this paper is to reflect on this topic by investigating the infrastructure in terms of halls of residence for foreign researchers. These forms of residence are meant to answer real needs and to improve the international status of the city concerned (I). However, these infrastructures are seldom reflected upon in terms of their future capacity, their functioning and their management, a consequence of all of these being their malfunctioning (II). Finally, they contribute to the productivity of the metropolis and on occasion represent a trigger for the development and the regeneration or the revitalisation of an urban space (III). In this paper, we focus on three cities located in the western region of France, namely Nantes, Rennes and Brest. Although these cities have been selected for displaying this particular type of infrastructure, we have also included other relevant examples which would allow for a better understanding of this specific phenomenon.

Introduction

In an endeavour to extend higher educational knowledge in the context of European space occupied by foreign researchers in the short and long term, and that is backed up by research into this sphere, it is evident that competition between cities accommodating foreign researchers has compelled local authorities "to develop economies based on innovation and knowledge" (Aust and Crespy, 2009). In actual fact, research is perceived as a primary factor in making university cities more attractive and in promoting their role of accommodating and hosting researchers. This trend is strategically important in that the population of researchers is contributing more widely to the international status of the city in which their research activities are being conducted, and would, therefore, be an important factor in promoting local economic development (Soldatos, 2003).

Public role-players often consider international researchers as ambassadors and, in the context of this paper, as prestigious French-speaking partners. Once back in their countries of origin, the researchers might possibly promote the foreign university city in which they resided during their period of study. They could also relay positive feedback on the city hosting them back to their home country. It is for

this reason that the question of accommodating the foreign researcher has been raised since it presents specific problems - as we will show later. Some university cities have already experimented with innovative structures and services such as halls of residence for accommodating foreign researchers, while others have merely thought about this matter

The aim of this paper is to reflect upon "the economy and its articulation in space" (Ghorra-Gobin, 2012), in terms of the halls of residence established to serve foreign researchers. These are supposed to answer real needs and to improve the international reputation of the city in question (1). Nevertheless, these infrastructures are seldom reflected upon in terms of their capacity to serve the future needs of the foreign research population, their functioning and their management. As such, the consequence is inevitably malfunctioning systems (2). Finally, these halls of residence contribute to the productivity of the metropolis and more often than not trigger the development and the regeneration or revitalisation of an urban space (3).

The focus in this paper is on the western region of France - on the cities of Nantes, Rennes and Brest in terms of these infrastructural forms. However, it also includes other relevant examples to allow for a better understanding of this particular phenomenon.

Methodology

The data used in this research included information gleaned from the respective internal work papers of the university cities in question, as well as that emerging from discussions held over the research period.

1. Infrastructures considered crucial in the internationalisation of university cities

Although having no specific legal skills on the subject, Aust and Crespy (2009) indicate that local executives in university cities attempt to support the potential that the halls of residence hold for researchers in the context of fostering higher educational objectives and innovation. The accommodation and hosting of international researchers under the best possible conditions - which is a major factor in the internationalisation process - has become an essential stake for local authorities. This objective is in line with their quest for excellence which is based on innovation and creativity. It has been within this framework that halls of residence for foreign researchers have been erected by local role-players.

The objectives surrounding the establishment of these institutions are as follows:

1.1. At best to welcome the researchers

The halls of residence for foreign researchers could primarily be considered as a real necessity answering the actual logistical requirements of the French cities in question. Indeed, the question of accommodating foreign researchers is unique. First of all, the real estate market conditions of the large cities are often subject to particular tensions, which are associated with a shortage of accommodation and consequently with high prices. Furthermore, the circumstances of the foreign researchers are diverse. The level of affluence/poverty and the range and quality of the resources that they have at their disposal are variable. Another consideration is that they have not necessarily adapted to the culture and lifestyle of the French. Their marital status also varies in that some researchers arrive in their host countries

with their spouses and families - which presupposes the availability of a particular type of housing, as well as the necessity of mobilising other types of services (e.g. schools for the children). Moreover, even if the deposit has been paid by the researcher, finding a guarantor proves to be problematical. On the other hand, because research laboratories as institutions employing workers have no legal authority/status as such, they cannot meet this requirement.

Finally, the difficulties of finding accommodation vary according to the duration of the stay. Long periods of residence – generally up to several years - are mainly associated with PhD students, who are easily able to find solutions to their accommodation needs from the private rental stock. Very short periods of residence (e.g. for less than one month) also apply to a significant proportion of the foreign researchers seeking accommodation. The residents in this case are able to adapt by staying in hotels or in alternative housing. On the other hand, periods from one to six months are the most difficult to manage because the availability of such accommodation is limited. The group of residents requiring this type of accommodation constitutes the privileged target group for the halls of residence.

To simplify the issue of accommodating PhD students and foreign researchers has, therefore, become a necessity, the justification for which is found in all of the official files relating to the construction of halls of residence. On the contrary, only the city of Brest has indicated that there are no such demands there, the reasons being that on the one hand some of the research establishments have their own residences - which reduces the demand - and on the other, there are vacancies/opportunities in the real estate market of this urban area.

1.2. Positioning the university city as an international research city

Other aims associated with the construction of halls of residence for foreign researchers are listed in the infrastructural files of the various university cities. They include greater mobility and the intensification of inter-university competition at the European and world levels respectively (Brest Métropole Océane, 2011). The development of such infrastructures is part of the strategic approach adopted by the university cities. To develop the renowned international university city is apparently essential, with the potential of the city to attract researchers, more people and institutions, innovation and development being favoured by such an infrastructural form. Local consequences are to be expected in respect of the local economy and include amongst others the effect of training.

The competition between university cities is also very real. Each University City tends to emulate the developments of its fore-runners or rivals.

Most of the halls of residence for international researchers were erected in the various French cities during the same decade: Strasbourg (1999), Bordeaux (2001), Poitiers (2006), Nantes (2007), Clermont-Ferrand (2007), Orléans (2010), Marne la Vallée (2010), Grenoble (2010) and Saint-Etienne (2011). Others are in progress (Rennes) or in the project phase (Brest). Bordeaux does not hide from the fact that it was inspired by already operational halls of residence in Lille and Lyon. The universities of Bordeaux, in partnership with the surrounding local authorities, and having a measure of autonomy, have expressed their intention to assert themselves in the international exchange field by offering structures of quality accommodation. Amazement was expressed in 1998 by the Universities of Bordeaux at the fact that this type of infrastructure had not already been in existence in a city with such a

strong international image and which had already managed to forge scientific links with universities and research centres all over the world.

1.3. A strategic vision shared by all of the local role players

The halls of residence discussed above are the fruits realised through consensus amongst the local role players. They have been achieved mainly through a common political will held by various role players in the university community in the broad sense who exceed - sometimes with great difficulty - the logistical attempts of individual institutions to consider collaborative and federal projects to develop the renowned world of the university city. Owing to the costs associated with them, these urban infrastructures require financial mobilisation through the interventions of several of the associated role players, namely the state, the regional council, the general council, the city, and the EU (FEDER), etc.

Consensus amongst the various role players is necessary since "the increasing competition for space to attract companies and executives supports these dynamics, especially as the state and European financing are often conditioned in terms of the principle of additionality. Refusing to participate in acting consensually then is to take the risk that investments could be allocated to a region, to a department or to a nearby city, all of which could be direct competitors in the running" (Aust and Crespy, 2009).

2. Weak reflections for the future on the capacity, the functioning and the management of these infrastructures

The lack of reflection for the future on the capacity, the functioning and the management of these infrastructures has, on occasion, resulted in chaos and malfunctioning.

2.1. The impossibility of correctly calculating the mobility of foreign researchers and PhD students and thus of realistically estimating requirements

Once the decision has been made theoretically to set up a hall of residence for foreign researchers, the necessity to consider its capacity in terms of accommodation arises. That is why it is important to know the figures in respect of the mobility of foreign researchers in order to propose the capacity of the accommodation required. However, this is almost impossible in France since for the most part the researchers remain ensconced in laboratories and do not move much along public routes and in the public domain. It would be impossible to determine in a reliable way the mobility figures without conducting a survey covering the research laboratories of the university cities.

2.2. The difficulty of planning for the correct capacity in terms of the halls of residence

Data collectors from a private office were enlisted to determine the number of residents, and therefore the number of residential units that the planned hall of residence in question could accommodate. The survey covered 86 laboratories from the Rennes urban area. A 10 % increase over three years in these figures was subsequently proposed to result in a projection of 1320 mobilities in 2010.

In putting a figure to this projection, the office recommended an estimated capacity ranging from 96 to 144 housing units (the future hall of residence would in fact only accommodate 80) to cater mainly for researchers staying in the university city for a

period from one to six months. The proposed formula seemed to them an answer applicable to the short and rapidly-passing periods of residence. On the one hand, this researcher scheduled the duration of stay at less than six months, or, on the other, to a more limited period of time, thus allowing the foreign researcher the opportunity of finding alternative accommodation.

Important to note, however, is the fact that the private office did not attempt to determine the accommodation capacity of every institution of higher education, as compiled in the current inventory. However, some of the institutions did have these figures. By using the same method, the other French university cities were able to estimate the capacity of their halls of residence. As such, each hall of residence proved to be unique in terms of its estimated capacity: in Poitiers, 15 housing units; in Bordeaux, 56; in Clermont-Ferrand, 31; in Strasbourg, 27; in Grenoble, 64; and in Saint-Etienne, 30.

2.3. Dysfunctions associated with the halls of residence

The first dysfunction proved to be the profitability of each hall of residence. A hall of residence is generally financed through public funds and must be profitable. How is it possible to make a hall of residence profitable considering the cost it has to bear in accommodating and supporting foreign researchers? What minimum occupancy rate allows the hall of residence to reach the break-even point? The turn-over of residents staying only for short and average time periods proved to be very difficult to anticipate in that there are peaks of influx and, at the other extreme, flat periods. Such conditions represent high costs in terms of the logistics of, for instance, changing bed linen, and cleaning.

Some of the university cities introduced security measures and decided to set up residence halls of low capacity but dedicated only to local and foreign researchers. However, even with these precautions in place, the halls of residence were not shielded from the problem of maximising the number of residents which they supported when they first started up - as was the case in Nantes during its first five months. The situation has since been corrected and is now operating as initially planned.

The Clermont-Ferrand Hall of Residence also went through a difficult period initially. It entered into competition with the hotels of the city. Its pricing policy was virtually unreadable and incoherent, to the extent that, as a result of misunderstandings, the partner universities did not recommend this institution as a place to seek out for accommodation.

The second dysfunction proved to be the management of the hall of residence in question. The Descartes Hall of Residence in Marne-la-Vallée experienced significant difficulties in terms of its management during its first two years of operation. Examples of such difficulties that were experienced by this researcher in particular follow:

- The time required by the owner to find an administrator - which delayed the opening of the residence by one year;
- The lack of understanding and insight of the administrator into the unique nature of foreign researchers (people arriving at any time of the year for short and average time periods of residence, and not for the usual period, namely from September to June).

- The problems that the administrator had to face in having to deal with internationals, thus making an English-speaking staff imperative; and the possibility of receiving people requiring entry to the residence at any time (e.g. the night).
- The will of the administrator to impose local rates on foreign researchers. Such rates proved to be difficult to reconcile with the limited incomes of the PhD students and researchers,
- The *modus operandi* applied by the administrator (e.g. imposing longer, more profitable periods of residence on the researchers);
- The lack of any form of management in the building (e.g. this researcher had to travel to the rental agency used by the group which was situated 20km away to sign the contract, pay for the accommodation, and to take possession of the keys).

Because of the difficulties of finding accommodation for researchers and foreign PhD students, the halls of residence were eagerly anticipated by the local officials and role-players and more particularly by the foreign researchers themselves. Nevertheless, it is apparent that there should have been greater deliberation in reflecting on the so-called amenities ahead of time to avoid harmful dysfunctions in the accommodation system. It is not enough to build these structures. It is imperative to also consider their capacity, their effective functioning and their management.

3. Infrastructures integrated into an urban policy

Halls of residence for foreign researchers are also regarded as types of infrastructure that are addressed and included in urban policies and that should also contribute in actual terms to the productivity of the university city.

3.1. Symbolic structures

From an architectural point of view, residences are either rehabilitated buildings (as in Bordeaux) or new ones (as in Nantes, Clermont-Ferrand, Rennes and Brest). In both cases, they should appear as symbolic elements of the city. The French terms "House" and "Residence" would mean that these infrastructures are not simply dormitories but actual places in which to live, namely homes. The "international" qualifier is also supposed to evoke this connotation if applied to the city. However, many of these halls of residence also accommodate and host French researchers - as we saw previously. The building should reflect the image of the city and should be of a high quality since it contributes to the fame and reputation of the city as a university-centred settlement.

The erection of a hall of residence is a symbol of the will of internationalisation in creating a university city that must also be appreciated by the researchers who occupy it. The city of Nantes, for instance, expressed its wish for "an architecture embodied in a clear and honest, drawing expressing with seriousness a faith in the future and in research for its residents " (Communauté Urbaine de Nantes, 2004).

3.2. The creation of international urban poles

In most cases, the hall of residence for accommodating foreign researchers has been perceived as an entity inserted into a wider operation and allowing for the construction of a "pole" focusing on the international sphere. This entity or pole is

supposed to create synergies with other countries and other cities with which it has forged links. This makes for the reinforcement of the image of the city.

In terms of the Brest Hall of Residence project, the most significant innovation was to add on a large building which would conjoin the hall of residence with office areas, which in their turn could be opened up to other activities focused on the international sphere. Thus, a significant step could be taken once activities could be gathered together in this way to form a type of cluster, an economic node or subsystem based on "its functioning as part of the network, in a given space, and with various actors such as SME's, and to which universities could be added " (Paris, 2012). As such, the economic node would proceed from political decisions and not from " emergent dynamics" (Paris, 2012).

3.3. The location of the hall of residence as related to urban projects

The location of the hall of residence should be and is usually chosen with the utmost care. It is situated in a pleasant area to reflect the best possible impression of the city. The infrastructure should be very well established both in terms of accessibility and services to facilitate the everyday life of the resident population, which might not necessarily be settled close to the campus.

The choice of the location is often part of a wider urban strategy because this type of infrastructure sometimes contributes to the re-structuring of an area in the city. For example, plans for the future hall of residence in Rennes are to insert it as a wedge into a larger-scale project which will promote the further clustering of activities, namely three university institutions (the international relations pole of the city, the hall of residence for foreign researchers; and a university cafeteria), as well as a municipal sports centre. The hall of residence will be sited on the General de Gaulle Esplanade. It will be situated in the heart of the city and close to important urban operations, and will be particularly well served by public transport (the underground, bus and railway connections and stations).

Thus, the choice of the location of a hall of residence meets basic criteria, namely that the location should be effective in terms of accessibility and also be aesthetically pleasing - the latter to create a good impression of the city, because, as Pierre Veltz (2012) indicates: "What is a decisive factor, is the places where people want to go. These spaces are not any spaces, but those where the quality of life is important".

The project of establishing halls of residence for foreign researchers has been designed to give new life or to bring regeneration to an urban area. For the city, it represents a true trigger for the development, the renewal or the revitalisation of an area.

Conclusion

The concept of a hall of residence to accommodate foreign researchers is a very real answer to actual logistical requirements challenging in this context French university cities. These institutions will be required to tackle the obstacles associated with accommodating researchers and foreign PhD students at best. Apart from this valuable contribution that they could make, and under the conviction that these halls of residence are sources for raising the status of cities to internationally-acclaimed university cities, these infrastructures are an essential means for promoting the economic development of the cities in which they are located. It is in terms of this

belief that they manage to unite the role players in the university world for the purpose of setting up this symbol of internationalisation.

Apart from these positive benefits, the halls of residence for foreign researchers also feature as components in urban policies and actually contribute, therefore, to the productivity of the city. Indeed, each hall of residence is considered as an entity inserted into the wider sphere of urban operations, allowing for the establishment of a pole focused on international activities. In actual fact, such an institution is a component of a wider urban strategy since it contributes to the re-structuring of an area.

However, if the building receives all the attention, there is none left for its contents - both material and abstract. As such, because the accommodative capacity of the hall of residence, its effective functioning, as well as its management, have been given little consideration in current forward-looking studies, it is to be expected that the outcome will unfortunately be numerous dysfunctions.

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The cultural life of Poznań

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Abstract: Today culture, and more precisely the activity of cultural institutions (facilities) and the creative circles, is a measure of a city's prestige or even its importance, determining its rank and spatial impact. To some extent it is also a determinant of the level of civilizational development. In the recent conceptions of socio-economic development, culture is listed among its major factors, the development being generated by people involved in a creative artistic activity that make up the so-called creative class. However, cultural facilities are first of all a component of the city's social life because they organise and mould the activity of its residents (as well as visitors) by catering to their interests, tastes and skills, and inclining them towards artistic, intellectual or aesthetic reflection, or simply giving them pleasure. For the city authorities, the development, maintenance and constant improvement of the artistic level of cultural facilities is an often very costly task. For some organisers of cultural life it can also be a source of income. The aim of this paper is to characterise the cultural life of Poznań, which is taken to include the activity of cultural facilities and the participation of the city residents and visitors in its various forms. The facilities in question will be primarily musical institutions (the philharmonic hall, orchestras, choirs), theatres (the opera, the musical theatre and dramatic theatres), museums, art galleries, cinemas, and libraries. Mass culture and the creative class, understood in terms broader than cultural, will not be dealt with in any detail. An analysis will be made of the distribution of cultural facilities and venues of cultural events; the structure, scope and nature of the activity of the facilities will be discussed; and the participation of the city residents and visitors in culture will be examined. The artistic rank of the Poznań cultural facilities will also be assessed. The city's cultural life will generally be described for the years 1990-2010, i.e. in the new systemic conditions, and the focus being on the number of cultural facilities and of people participating in the cultural events they offered. The study period covering twenty-odd years will make it possible to trace tendencies in the development of the city's cultural facilities and to determine the trajectory of participation of its residents and guests in culture. Poznań is one of the biggest cities in Poland, and one of its major cultural centres, especially musical ones.

Introduction

The level of a city's cultural development, and more specifically the activity of its cultural institutions and artistic circles, is a measure of its prestige, or even importance. It is also a yardstick of the level of civilizational development. It is for those reasons, among others, that culture is listed as one of the major factors of social and economic development in the latest conceptions of this subject. People engaged in artistic and creative activity make up the so-called creative class that generates this development (Florida 2002, 2005; Klasik 2009; Musterd and Murrie 2010; Strykiewicz, *et al.*, 2010).

The activity of cultural institutions and facilities is, first and foremost, a component of the social life of the city, because it organises and, to some extent, shapes the activity of its inhabitants (as well as visitors), catering to their interests, tastes and talents, and ensuring a source of income for artists (Pasierb 1983, Giddens 2006).

In this paper the cultural life of a city is taken to mean the activity of its cultural institutions and the participation of its residents (and visitors) in its various forms. The institutions concerned will be those that both, present the city's cultural output and offer a form of its consumption as expressed by the participation of the community in

cultural events, or which mediate in making the creative output available to the public (museums, libraries).

The aim of this paper is to characterise the cultural life of Poznań as an essential component of the social life of this city. Its cultural life will be taken to include the activity of musical institutions (the Opera, the Musical Theatre, the Philharmonic Hall, orchestras, choirs), theatres (dramatic and alternative, the Dance Theatre and the theatre for children), museums and art galleries, cinemas, and libraries. An analysis will be made of the distribution of cultural institutions and places where cultural events are held. The structure, scope and nature of the activity of those institutions will be examined as well as the participation in culture of the city residents and visitors. An assessment will also be made of the artistic rank of the Poznań cultural institutions. The city's cultural life will generally be described for the years 1990-2010 (exceptionally for 2012), that is, in the new political and socio-economic conditions. The number of cultural institutions will be given as well as that of people attending the events held in them. This over 20-year-long period of analysis will make it possible to reveal tendencies in the participation of the city's residents and visitors in culture. The importance of this kind of study stems from the fact that Poznań, one of the biggest cities in Poland, is also one of its major cultural centres, especially musical; this is a field where its significance goes beyond the boundaries of the region and country. In the 1990s the present author considered the city to be the musical capital of Poland (Parysek 1991; Parysek and Nowak 1992). Regrettably, after 1989 it has been overtaken by Warsaw and Cracow in this competition, and now has to vie with Wrocław for third place.

Cultural institutions of Poznań and their activity

Musical life of the city - With its 550 thousand inhabitants, Poznań is one of Poland's chief cultural centres, its cultural facilities being among the most important ones in the country. The activity of Poznań artistic companies, especially musical and ballet ones, and to a lesser degree theatrical troupes, is also quite well known abroad. This has been so since the oldest times, both when Poland enjoyed state sovereignty and when it was divided among three partitioning powers. It was here, in Poznań, that the first structures of the Polish state developed, and the city was the seat of its rulers on whose courts poetry, theatre and musical culture flourished.

Today the city is the seat of the following musical institutions: the Opera (the Stanisław Moniuszko Grand Theatre), the Musical Theatre, and the Poznań Philharmonics, as well as ensembles giving concerts at home and abroad, the best-known being the Polish Radio Chamber Orchestra Amadeus, the Baroque orchestra Arte dei Suonatori, and the early-music ensemble Academia dell'Arcadia (Table 1). Naturally, there are a lot more musical groups in Poznań, like the early-music ensemble affiliated with the Poznań Museum of Musical Instruments, or the vocal ensemble Affabre Concinui.

Even though Poznań has lost its position of the musical capital of Poland, it is certainly still the capital of Polish choral arts. Its history goes back to the 15th century when a local choir sang in the cathedral, primarily during services. Today there are tens of choirs in the city, including three renowned professional male-voice ones: of the Poznań Philharmonics known as the Poznań Nightingales, the Poznań Boys' Choir, and the Cathedral Choir. There are choirs set up by the city's universities, occupational associations and organisations, cultural and musical societies, schools

and churches. They perform in various places (concert halls, community centres, churches, hospitals, nursing homes, etc.) and on various occasions (concerts, ceremonies, state and church festivities, masses, etc.), and take part in festivals and competitions at home and abroad.

Table 1: Chief musical cultural institutions in Poznań

Name	General characteristics
Stanisław Moniuszko Grand Theatre	One of the best operatic scenes in Poland; repertoire classical (operas and ballets); extensive cooperation with institutions abroad; Verdi Music Days; auditorium seating 900 persons; ca. 20 items in basic repertoire.
Musical Theatre	Ambitious operetta and musical repertoire; difficult technical conditions; constant public.
Poznań Philharmonics	Good orchestra; well-known choir of boys and men (Poznań Nightingales); diversified repertoire (classical, but also popular, film and jazz music), frequent performances by foreign artists, popularising activity for adults (Poznań Concerts) as well as for children and youth (Pro Simfonica). Concerts (ca. 50 annually) in university auditorium (860 seats), also outside Poznań.
Polish Radio Chamber Orchestra Amadeus	High-class musical ensemble giving concerts throughout the world; repertoire from J.S. Bach to modern music; popularisation of Polish music abroad; soloists include world-famous artists; several dozen concerts annually; many radio and CD recordings.
Baroque Orchestra Arte dei Suonatori	European-format early-music ensemble (mostly Baroque); cooperation with eminent conductors and instrumentalists; co-organiser and participant of 5 musical festivals; performances abroad; award-winning records; ca. 100 concerts annually.
Early Music Ensemble Academia dell'Arcadia	Ever better known early-music ensemble; populariser of Polish Renaissance and Baroque music, especially of Wielkopolska composers and J.F. Haendel; repertoire deriving from rich source of traditional rituals, customs, theatre and history.

(Source: own compilation on the basis of information material from institutions).

When discussing the musical life of the city, one should also mention wind orchestras, which give open-air concerts, but primarily take care of the musical side of national and state holidays, anniversaries, marches-past and processions, as well as religious festivities and burials. The best known Poznań wind orchestras include the Orchestra of Poznań City, the Air Force Representative Orchestra, and the Karol Kurpiński Railwaymen's Orchestra.

A great musical event is the Henryk Wieniawski International Violin Competition held in the city since 1952 in a 5-year cycle (the last one in 2011). As a meeting of young violin virtuosos, the Poznań competition is a ticket for the winners to the most

renowned concert halls of the world. What adds to the prestige of the competition is an international jury whose members are eminent violinists and pedagogues. Besides violin competitions, there are also international violin-making contests. Their organiser is the Henryk Wieniawski Musical Society, one of the major animators of the musical life of Poznań, a co-organiser of various concerts and competitions for young performers.

The Polish presidency of the European Union Council has brought a new, apparently fully successful and hopefully permanent concert initiative offering the highest level of performance, viz. the Poznań Baroque Festival. In November 2011 more than a dozen concerts took place under its banner, given by celebrated early-music ensembles from Poland and abroad. What boosted the rank of the festival was its financial support by the state authorities and the European Union, which made it possible to invite the highest-class performers. The second Poznań Baroque Festival was organised (with the help of more modest means) in 2012 and hosted performers no less known and attractive than those from the year before. May this type of initiative be possible to continue.

An animated and diversified activity is conducted, obviously enough, by the Poznań Music Academy, the two concert halls of which are venues of at least a dozen events every month (concerts, competitions, festivals, presentations, workshops, courses) with the participation of students and pedagogues (both its own and from outside, also from abroad), as well as invited guests. Another school engaged in concerts is Adam Mickiewicz University, not only with performances of its two excellent academic choirs and the organisation of the *Universitas Cantat* festival, but also with its Great Recitals in the University Auditorium, featuring world-famous artists.

Poznań is also the venue of so-called Concerts for the Earth. The first was given in connection with the climate conference that took place in the city in 2008, the next were organised in the following years (Nelly Furtado, Sting, Radio Head). Another event, staged as part of the celebration of the 50th anniversary of the Poznań workers' anti-communist protest of 1956, was a musical show by R. Waters, *Ca Ira*, viewed by an audience of more than ten thousand. Sometimes musical concerts accompany the Malta theatrical festival (see below), especially after the formula of this event changed in the early 2000s.

Classical music can be heard in many Poznań concert halls, although the city has not got a large hall. The biggest is the Adam Mickiewicz University auditorium with some 800 permanent seats. Other venues are the two concert halls of the Music Academy, *Aula Artis* of the Higher School of the Humanities and Journalism, the Grand Hall of the Cultural Centre (The Castle), halls of the Medical University, the University of Life Sciences, the City Hall, the Poznań Town Hall, rooms of Poznań music schools, as well as churches and museums.

Concerts of popular music are held primarily in the sports-and-show hall Arena and halls of the Poznań International Fair, and of jazz music, in clubs. There are also open-air concerts, arranged primarily on Lake Malta and in the stadium. Naturally, the musical life of Poznań is richer than the one described. Indoors and in the open, there are concerts of youth music and jazz (the Blue Note Club), performances given by pop singers, folk ensembles, wind orchestras, etc. In spite of the modest number of prestigious artistic events, the musical life of the city is one of the richest and most dynamic in Poland.

Table 2: Best known theatres in Poznań

Name	General characteristics
Teatr Polski (Polish Theatre)	Historical theatrical scene of Poznań (established 1873-1875 on the initiative of city inhabitants, then under Prussian rule; of great significance for maintaining patriotic spirit and Polish culture); classical dramatic scene of the city; some dozen plays in repertoire; ca. 300 performances annually (3 scenes for a total of 324 spectators) for ca. 30 thousand spectators.
Teatr Nowy (New Theatre)	In operation since 1932, the city's second dramatic scene with classical repertoire. Annually ca. 500 performances on 3 scenes (589 seats) for ca. 80 thousand spectators.
Animation Theatre of Poznań	Theatre for young spectators, one of the best in Poland. Initially (since 1854) puppet theatre, then puppet-and-actor theatre; repertoire of classical fairy tale performances and realistic modern plays for children. The theatre organises art festivals for children.
Polish Dance Theatre (Poznań Ballet)	Established in 1973, metamorphosed from classical corps de ballet to dance theatre; new genres and styles, new forms of artistic expression; performances throughout the country and abroad; organiser and conductor of international workshops of modern dance and International Festival of Dance Theatres.
Teatr Ósmego Dnia (Theatre of the Eighth Day)	Renowned at home and abroad, alternative theatre set up in 1964. Since 1979 professional company; politically engaged repertoire (communist regime, state of martial law). Between 1981 and 1990 performances in churches, streets and abroad. Reactivated in 1990; over 40 repertoire positions; has its own auditorium.
Teatr Biuro Podróży (Travel Office Theatre)	Another alternative theatre in Poznań (est. 1988); performs mostly outside Poznań and abroad, also in places of conflict and political tension; has prepared 14 indoor and outdoor performances.
Teatr Strefa Ciszy (Zone of Silence Theatre)	Last of Poznań's leading alternative theatres; open-air theatre performing in public spaces; happenings and street actions; reference to bourgeois traditions and urban culture; merrymaking, humour and jokes as pretext for touching on serious problems (limits of freedom, consumerism, attitudes towards ever-spreading absurdity, conformity, reification of human beings and interpersonal relations, unhealthy competition, compulsory rivalry).

(Source: own compilation on the basis of information material from institutions).

Poznań theatres - Apart from the mentioned Grand Theatre (the Opera) and Musical Theatre, there are two professional theatres in the city (the Polish and the New Theatre), the Polish Dance Theatre, the Animation Theatre of Poznań, the Theatre of the Eighth Day, the Travel Office Theatre, and the Zone of Silence Theatre, as well as several other theatres and theatrical companies (Table 2). The last group includes mainly amateur theatres (student and school ones, those affiliated with community centres, societies, etc.), as well as cabarets. Here one can also place the artistic activity of the Scene Upstairs and At Friends'. With their artistic activity as well as workshops offered, popularisation measures taken, and festivals and competitions organised, the Poznań companies have a rich repertoire in which the city residents can find performances they like and expect, or with which they are ready to get acquainted. There is a public for dramatic theatres, the dance theatre and the theatre for children. Also alternative theatres have audiences of their own, understandably, although they differ in the form of activity, the repertoire, things they emphasise, and often controversial messages conveyed. In sum, they offer a wide choice of performances in which everyone can participate in accordance with their taste (and often free of charge).

A well-known cultural attraction of the city is its Malta Festival, one of the most important artistic events in central Europe held annually in the late June/ early July since the start of the 1990s. Initially a survey of street, avant-garde or alternative theatres, in the recent years it has become an artistic festival embracing theatrical and dance performances, musical concerts, and film screenings, staged on the banks of Lake Malta, in the public spaces of the city, and indoors.

The latest cultural event in the city is the International Film and Music Festival, Transatlantic (the idea of the Oscar-winning composer, Jan A.P. Kaczmarek). It includes a film survey, musical concerts, composer competitions, as well as lectures and discussion meetings. The festival is supposed to be a discussion forum tackling current problems in culture and art as connected with the social environment.

Museums and galleries - There are dozens of museums, galleries and exhibition salons in the city. However, the leading role is played by the National Museum with its six Poznań branches: the Gallery of Painting and Sculpture, the Museum of Applied Arts, the Museum of the History of Poznań, the Military Museum of Wielkopolska, the Museum of Musical Instruments, and the Ethnographic Museum (which in turn has branches in Rogalin, Gołuchów and Śmiełów). Other major institutions include the Archeological Museum, one of the few and larger ones in the country; the Archdiocese Museum with a long tradition of activity; the Wielkopolska Museum of Fights for Independence, documenting the latest history of the city, and the Museum of the Poznań Bambergers (Tables 3 and 4). There are also museums of pharmacy, of motorisation and municipal communication, as well as museum exhibitions of the city's higher schools and other institutions. A characteristic feature of the city is also study rooms of its writers and composers, turned into museums.

Works of art are on display in a multitude of Poznań's galleries, which are also venues of other kinds of cultural events. There are dozens of such facilities. An important role in the cultural life of the city is played by the Cultural Centre (The Castle), with its artistic workshops, theatrical performances, concerts, film screenings, exhibitions, etc. This institution is funded from the city budget.

Table 3: Major Poznań museums

Name	General characteristics
National Museum	Opened in 1857; currently has 6 divisions: Gallery of Painting and Sculpture, Museum of Applied Arts, Museum of the History of Poznań, Military Museum of Wielkopolska, Museum of Musical Instruments, and Ethnographic Museum (see Table 4).
Archaeological Museum	Also established in 1857 on the initiative of Poznań Society of the Friends of Sciences; currently 5 permanent exhibitions: Death and Life in Ancient Egypt, Archaeology of Sudan, Rock Art of Northern Africa, Here Poland Was Born (beginnings of Polish statehood), and Prehistory of Wielkopolska, as well as changing periodic exhibitions; many exhibits found by museum staff themselves and Poznań archaeologists; in museum courtyard, an obelisk of pharaoh Ramses II (deposit from Berlin).
Archdiocese Museum	Set up in late 19th c. by archbishop F. Stablewski, in the building of former Lubrański Academy (1518-1530, rebuilt in 18th and 19th c.). The most valuable exhibit is St. Peter's sword (a relic). Its collections include: Polish Gothic painting and sculpture; Polish, Italian, Spanish and German painting; portraits of eminent Poles; woven fabrics (vestments and liturgical items, clothes, ornamental belts for old-Polish robes of noblemen, Gobelin and other types of tapestry, etc.); liturgical silver vessels, porcelain, glassware and silverware. The Museum is a property of the Poznań Archdiocese.
Wielkopolska Museum of Fights for Independence	Documents the latest history of Poznań and Wielkopolska; 5 divisions: (1) Wielkopolska Uprising of 1918 (the only successful armed rebellion in the history of Poland), (2) Martyrology of Wielkopolska People - Fort VII (martyrs of the Second World War), (3) Museum of the Poznań Army (heroic army of 1939), (4) Armament Museum, and (5) Museum of the Poznań Uprising of June 1956 (the first, ruthlessly suppressed protest against communist regime, 76 official victims).
Museum of the Poznań Bambergers	Presents history and culture of settlers from Bamberg (Germany, Franconia) brought to Poznań in 18th century to settle villages around Poznań, depopulated by cholera (attraction: fully equipped Bamberger house).

(Source: own compilation on the basis of information material from institutions).

Table 4: National Museum in Poznań: divisions

Name	Location	Characteristics
Gallery of Painting and Sculpture	Poznań, Marcinkowski Ave.	Ancient Art Gallery, Medieval Art Gallery, Gallery of Polish Art from 16th to 18th centuries, Gallery of Polish Art from late 17th century to 1945 (J. Malczewski, J. Chełmoński, P. Michałowski, A. Orłowski, A. Gieryski, J. Matejko, L. Wyczółkowski, O. Boznańska and others), European Art Gallery (G. Bellini, J. Tintoretto, B. Strozzi, Q. Massys, A. van Dyck, F. Snyders, F. de Zurbaran, J. Ribera, D. Velazques, J.C. de Miranda and others), Modern Art Gallery, Gallery of Posters and Design.
Museum of Applied Arts	Poznań, Przemysław Hill	Collection of ceramics, glassware, jewellery, goldsmithery, clocks and watches, artefacts in metal, smithery, founding, furniture, textiles (kilims, carpets, tapestries), clothes, coins, etc.
Museum of the History of Poznań	Poznań, Old Market (Town Hall)	Collections recording the city's history: documents (old prints, manuscripts, books), drawings, pictures, maps, photographs, postcards, souvenirs, products of Poznań crafts, insignias of craft societies and guilds, banners, photographic cameras.
Military Museum of Wielkopolska	Poznań, Old Market	Historical documentation, side-arms and fire-arms, uniforms, orders and medals, military symbols, photographs and other documents. Exhibition devoted to Wielkopolska Uprising of 1918.
Museum of Musical Instruments	Poznań, Old Market	Impressive collection of European musical instruments: string instruments (of Polish violin-making Groblich and Dankwart families as well as Italian violin-makers: A. Amati, G.B. Guadagnini, G.P. Moggini), key instruments (a harpsichord by J.A. Hass and a piano forte by A. Walter), wind instruments (from the best workshops of 18th-c. Europe). Collection of more than 70 mechanical music instruments, from music boxes to orchestrions, as well as phonographs, gramophones and pianolas. Folk instruments: Polish, European and non-European. Archival items (manuscripts, old prints, notes), engravings, pictures, graphics, photographs, remembrances of musicians, billboards, programmes, records, etc.
Ethnographic Museum	Poznań, Grobla Str.	Collections presenting the wealth of culture and folk art of Poland and the world (especially Mexico, Amazonia, the Andes, Africa, New Guinea, Asia): masks, tools, vessels, clothes, ornaments, folk religious sculptures, crosses, signposts, embroideries and lace, paper cut-outs, folk painting (on canvas, wood, glass, metal, paper), etc.

(Source: own compilation on the basis of information of the National Museum).

Poznań cinemas - Although it seemed that, in the age of expansion of the Internet, DVDs, and MP3 and Blue Ray recordings, cinemas belonged to the past, the new organisational form of film presentation, viz. multi-screen facilities, as well as new screening technologies have opened a new chapter in the operation of those cultural institutions. In Poznań, apart from multiplex cinemas - Multikino 51 Poznań, Multikino Stary Browar, Multikino Malta, Cinema City Kinopolis, and Cinema City Plaza (IMAX) films are shown in five traditional cinemas (two of which are cinemas for connoisseurs). In 1991 there were 18 cinemas in the city, today their number has dropped to 10, but the number of auditoriums has grown considerably.

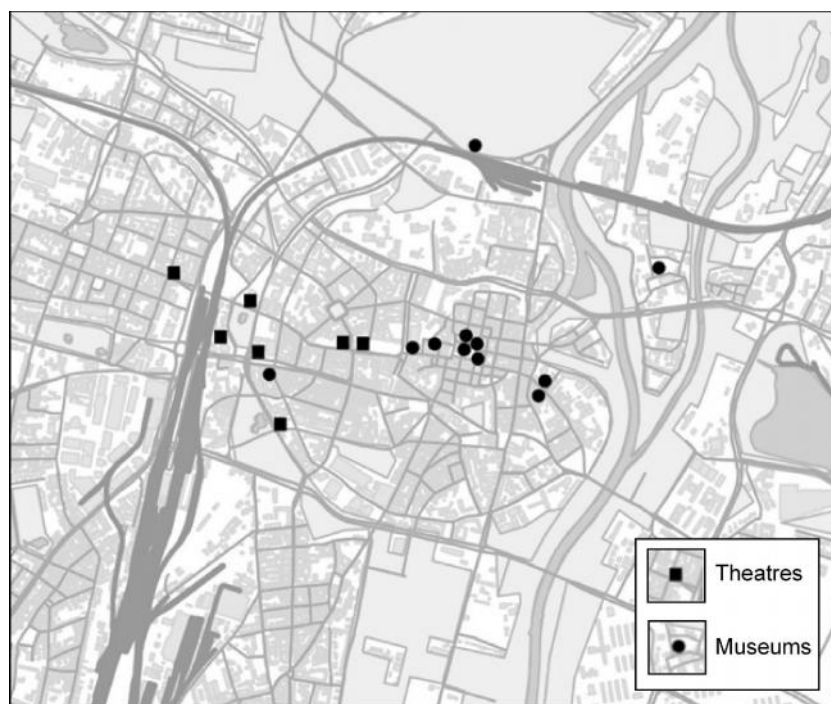


Figure 1: Poznań theatres and museums.

Libraries - It is hard to give the current number of libraries or library institutions in Poznań, because their organisational structure is complex. The city's main public library is the Raczyński Library located in a historic building (recently enlarged by a new wing) with a lot of lending branches throughout the city. Also higher schools have libraries of their own, both general and specialised (faculty-related), and so have scientific, cultural and professional societies. There are libraries at schools of various levels as well as parishes. Unlike American and Canadian libraries, those in Poland (and Poznań) are primarily book-lending facilities equipped with reading rooms.

Location of cultural institutions

The city's cultural institutions are located primarily in the centre (Figure 1). The degree of centralisation is especially high for musical institutions, theatres and museums: they are scattered within a radius of 1.2-1.5 km. Especially close to one another - within a radius of 500 m - are musical institutions (the Opera, Philharmonic Hall, Musical Theatre, Music Academy, and a music school). Equally densely distributed are Poznań theatres. Museums are a bit farther apart, especially the Wielkopolska Museum of Fights for Independence (in Fort VII on the periphery). Concentrated in the Old Town are branches of the National Museum.

The Old Town is also the site of the Archeological Museum, the Ethnographic Museum and that of the Poznań Bambergers. The Archdiocese Museum lies near the cathedral. Cinemas, once concentrated in the city centre, are now dispersed, because new multi-screen facilities are often situated in shopping centres on peripheries. Equally scattered are libraries, closely related to the distribution of higher schools and the population (branches of the Raczyński Library).

Participation in culture

It is hard to measure the participation of Poznań residents and visitors in the city's cultural life treated as a whole, because the statistics collected only concern the turnout at events organised by the city's chief cultural institutions. Still, an analysis of data available for the years 1990-2010 allows one to identify the tendencies. And those are not promising, considering the significance of the participation of citizens in the cultural life of their city for its civilizational development.

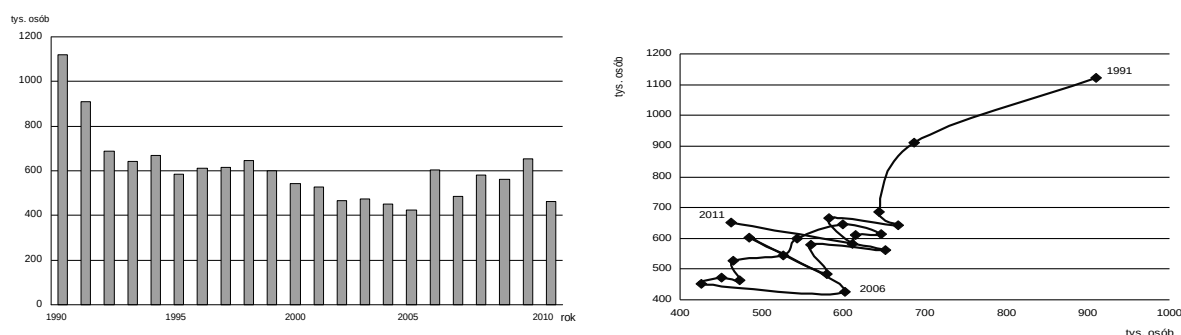


Figure 2: Number of spectators in theatres and listeners at concerts in years 1990 – 2011 (thousands).

The participation of residents and visitors in the city's cultural events was high in 1990, and this holds for all the basic forms, i.e. operatic and theatrical performances, concerts, film screenings, visits in museums, and membership of public libraries. After that year there were fundamental changes in attendance and readership (Table 5).

Between 1990 and 2011, the number of spectators in theatres and listeners at concerts dropped dramatically from 1,121.2 thousand to 462 thousand. It was a steady decline, although with a clear jump in 2006 (Table 5; Figure 2). By contrast, the number of cinema-goers, at 778 thousand in 1990, kept climbing systematically - first, until 1997, steeply, then, till 2008, in a more monotonic way, to start declining steadily and relatively slowly after 2008 (Table 5; Figure 4). There was also a sharp decrease in the number of museum visitors: from 969 thousand in 1990 to 308 thousand in 2011. However, since 1991 attendance has been steady, at 250-300 thousand persons annually (Table 5; Figure 3). The number of library members dropped from 110 thousand in 1990 to 87 thousand in 2011. Till 2004, however, the number of readers grew, to decline systematically since then (Table 5; Figure 5). In fact, in practically none of the cases were the changes in the level of participation in culture monotonic, as shown by the plotted trajectories of change (Figures 2 - 5). There can be several reasons for the observed state of affairs.

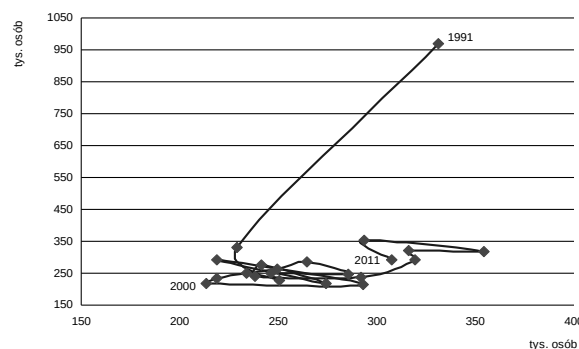
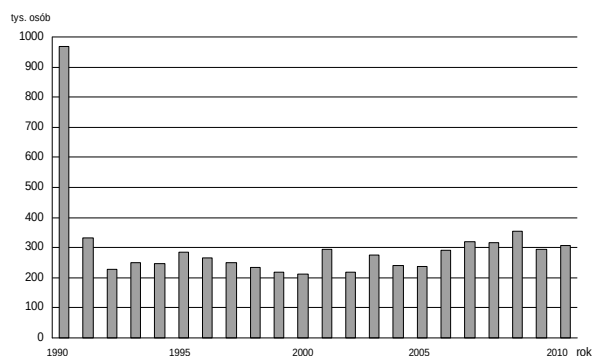


Figure 3: Number of museum visitors in years 1990 – 2011 (thousands).

Additional information about participation in culture was supplied by a survey study carried out in 2012. It revealed that 2.4% of those polled never went to the cinema, 4.6% to the theatre, 6.6% to the opera or the philharmonic hall, 5% to other concerts, and 5.5% to museums. Also, 29% of the Poznań respondents declared that they did not read books, 21% did not read papers, 25% did not listen to the radio, and 13.6% did not watch television, while as many as 37% spent their time (with varying frequencies) in bars, pubs, discotheques, etc. In turn, at least once a week 2.5% of the respondents went to the cinema, 0.3% to the theatre, 0.2% to the opera and the philharmonic hall, 0.5% to other concerts, and another 0.5% to museums. Those figures show that participation in cultural life is not a particularly popular form of leisure-time activity, although this relatively scant interest in culture is not the only factor responsible for the results obtained.

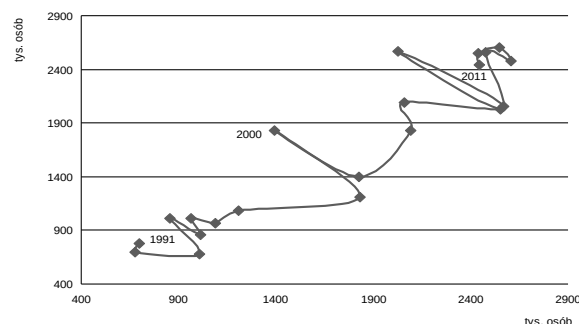
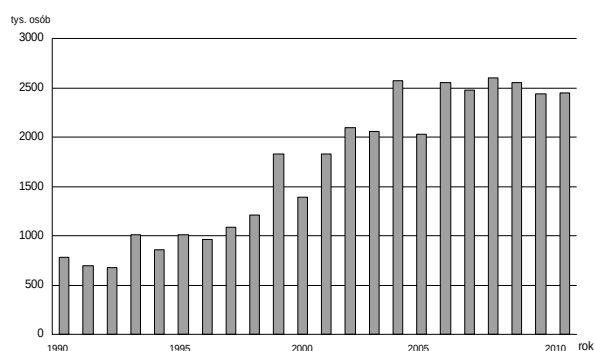


Figure 4: Number of cinema-goers in years 1990 – 2011(thousands).

One can attempt to identify reasons for the above pattern of participation in culture, but in this case there are no research results to rely on. The dramatic drop in participation after 1990 is certainly an effect of the systemic changes. The high level of inflation and unemployment as well as an increase in the costs of living, in conjunction with an increase in ticket prices caused by cuts in the funding of cultural institutions by the state and local governments, did not encourage attendance at cultural events, if only for financial reasons. What is more, so-called high culture met competition in mass culture as well as in the increasing popularity, first of television (in general and of its cable and satellite forms in particular), and then of ever more technically advanced audio-visual recordings and the Internet. Another reason for the decline in participation in culture can be a smaller number of concerts and performances than before 1991 - a result of financial limitations of cultural

institutions. This conclusion can be drawn from the early buyout of tickets for philharmonic concerts, operatic performances and some theatrical performances. Practically only cinemas with multiple auditoriums have no financial and technical obstacles to increasing their audiences. And indeed, the recent years have seen the cinema to enjoy ever greater popularity, not to say a revival, even though it is mostly mass culture. The drop in readership is partly a result of competition from the Internet, but also of the observed reluctance of modern society to reach for a book, journal or newspaper. Other factors responsible for the limited participation in culture, especially high culture, also include work, often to late hours, studying, a family situation, a distance between the place of residence and places offering cultural services, the value systems adopted, the way of spending one's free time, etc. Ticket prices do not seem to be an obstacle; in the case of so-called regular performances and concerts, a ticket to the theatre costs 20-50 zlotys, to the opera 30-60 zlotys, and to the philharmonic hall 20-60 zlotys, as against 20-30 zlotys to the cinema (1 euro = ca. 4.1 zlotys).

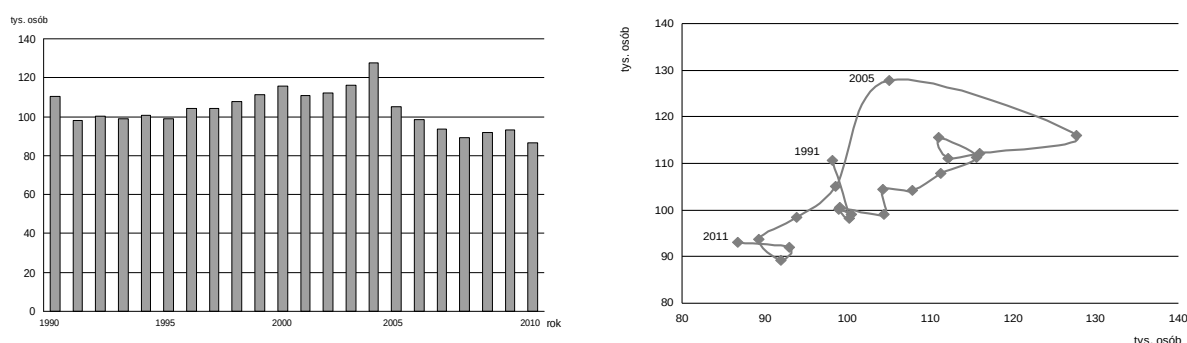


Figure 5: Number of library members in years 1990 – 2011 (thousands).

Cultural institutions are not profit-generating bodies. They can only operate with the financial support of the state, regional and local authorities, and the budgets of those authorities do not look good. Culture belongs to those fields of social life that have to suffer the most severe budgetary cuts. In the recent years expenditure on culture in the city budget has accounted for about 3% (at a similar level to sport). Most of the budgetary resources have to be earmarked for education, transport and communication, municipal economy and environmental protection, as well as for welfare assistance for the ever poorer local community. In the funding of Poznań cultural institutions some role is played by sponsorship. However, sponsoring firms tend to support financially primarily large mass-culture events (for marketing purposes).

Conclusion

It seems that the changes in the cultural life of Poznań reflect tendencies that can be observed in the social life of advanced countries of the modern world. The value systems of contemporary societies keep changing, and participation in events of high culture tends on the one hand to become the behaviour of an elite, and on the other, to meet competition from mass culture, consumption-oriented by nature and usually demanding no reflection, imposing much lower requirements on recipients because primarily intended to amuse. Equally competitive against participation in culture are the Internet and audio-visual techniques. A limitation can also be financial problems experienced by both, cultural institutions and urban communities.

In spite of those problems and tendencies, Poznań can be considered a city of culture. There are many cultural institutions and facilities operating here that present a high artistic level. Financial problems notwithstanding, amateur artistic movement keeps developing. There are many events offering free entrance, which makes participation in culture possible for people with financial problems. A big role in this field is played by the city's higher schools, especially the Music Academy, student organisations, artistic schools, various cultural societies, the church, the fire brigade, the army, and amateur artistic companies. As has been stated, together with Warsaw, Cracow and Wrocław, Poznań is a major cultural centre of Poland, primarily of instrumental music (symphonic, chamber, opera, early music), choral music, ballet, the theatre (especially alternative), and museology. It is the venue of well-known, important musical competitions and theatrical festivals. Considering the level of its artistic events, it features more and more prominently on the cultural map not only of Poland, but also of Europe, and even of the world, primarily because of their quality.

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Contested spaces: A Lefebvrian analysis of Mary Fitzgerald Square

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Abstract: This paper is a geographical analysis of public life in a changing urban landscape. Mary Fitzgerald Square is a public space in Johannesburg, South Africa that enables its concrete analysis as a social space of conflicting interests and interactions. Through fieldwork and on-going engagement with Lefebvre's *The Production of Space*, the *Right to the City* and Rhythmanalysis, the study found that Mary Fitzgerald Square is a regulated space which the city's youths are unable to use freely due to its private management and neoliberal practices. The democratic square is the lived space of skateboarders and fashion designers who perceive it as a site for artistic expressions, however, their constitutional liberties are prohibited by metro police and public space by-laws. Interestingly, prohibitions are *always* transgressed and negotiated in the very concrete space of mediated exclusion. The paper appeals for an adoption of Lefebvrian methods as tools in geography for analysing life through public space in changing South African cities. For future research the paper suggests a 'critical' discourse analysis of public space by-laws in relation to the trans-historical context within which public space is conceived and lived in light of the society's Constitution and the Bill of Rights in particular.

Public space: a short introduction

Public space refers to any physical space where people gather, meet and interact, and the kinds of social relationships that mediate and influence interactions in that space (Mitchell, 2003). Public space is a product of socialisation processes (Lefebvre, 1991) and is hence used for socialising by differently positioned members of an urban society. In today's world these public sites appear in the form of squares: large open spaces whose grounds are covered by concrete flooring and assigned meaning through architecture and various social uses. The Athenian agora of 4th and 5th centuries B.C. Greece is often cited as a classical example of public space that captured the richness and vitality of public life in a changing Greek context (Camp II, 2003). Much as it were a social space the agora was not as 'public' because it excluded significant portions of society and marginalised their political representation and imaginations from its perceived sphere of practice (Touaf, 2008).

Dominated by elitist and racially distinct few, the agora became a site for the privileged through its uses by an educated kind of public that was largely male and white (Graham and Aurigi, 1997). Females in general were excluded from the agora by virtue of their sex, and slaves, immigrants and the poor were barred from the space due to their class which affected their political identities (Mitchell, 2003). Since early Greek democracy and citizenship were grounded in the agora, the space became contested because of its political use. It became a tool for the simultaneous exclusion and inclusion of different social groups (Lefebvre, 1991) along racial, gendered and classist lines. Times changed significantly since the Athenian agora yet the 21st century urban publics continue to struggle with elitist interests for public space, examples include Beijing's Tiananmen Square (Lee, 2009) and Tahrir Square (Dhaliwal, 2012) in the Egyptian capital of Cairo.

South Africa's public spaces are not exempt from agora debates due to their racial, gendered and classist history and geopolitics in the formation and transformation of the society (Lemon, 1991). In light of the country's transition from institutionalised racial separation of society, to its integration in space through mutual citizenship (Ramutsindela, 2001) the paper analyses life in Johannesburg through empirical observation of its public space in democratic context. Through Henri Lefebvre's methodological approaches the paper presents Mary Fitzgerald Square as contested agora whose political practice excludes certain groups of young people from using it not because of their race, sex or class but because of their creative use and desire for it.

Mary Fitzgerald Square: background

Mary Fitzgerald Square is a public space in Newtown, Johannesburg that lies between Jeppe and Bree streets. Covering an area of 11 312m² the square is privately managed and is generally used for hosting public and private events. The Standard Bank Joy of Jazz and Arts Alive are examples of private events that go on for days in the square. Africa Day and the International Nelson Mandela Day are examples of public events that last a couple of hours in a single day. Organizations like the Democratic Alliance (DA), African National Congress (ANC) and the Congress of South African Trade Union (COSATU) often use the square at different intervals for political expression.



Figure 1: 21st century Mary Fitzgerald Square in Newtown, Johannesburg (Source: Google Earth (2012))

Occasionally the space is free from calendar activities allowing room for ordinary members of the urban society to make use of it. Generally the square is a passively experienced space since users mostly traverse it at different times between school, work, transportation nodes and home. Other than that, the square is not used for spontaneous gathering or games. Skateboarders are inhabitants of Johannesburg and are identified as users who struggle to appropriate the wide open square (Figure 1) because spontaneous practices are not permitted in the square. This paper is a Lefebvrian analysis of Mary Fitzgerald Square as a contested site where young people act and interact in.

A brief review of Lefebvrian methods in the context of the research

This paper adopts Henri Lefebvre's analytical methods developed in (1) *The Production of Space* (2) *The Right to the City* and (3) *Rhythmanalysis* texts to analyse Mary Fitzgerald Square. Although its politics are not well established in urban research, traces of the square's contested history can be found in the scholarly works of (Dirsuweit, 1999), (Gaule, 2005) and (Mlangeni, 2009). In *The Production of Space* Lefebvre (1991) contends that space is not an empty container waiting to be filled. It is a product of on-going processes and social relations to which people have a right to (UN-HABITAT, 2005). As the object of theoretical enunciation, the square provides the means through which the Right to the City, as an urban politics of inhabitants¹ (Purcell, 2002) is espoused. Based on the principle of appropriation by participation the Right to the City enables research to see and experience public space as a site of contestation where creative energies find the means to expression through struggle (Lefebvre, 1996). A Lefebvrian approach treats public space as creative tools for artistic expression necessary for democratic performance (Parkinson, 2006).

The period within which social performance appears and/or disappears in space and the length of time acquired by each social formation in space is imperative. Time-thinking is made possible by a general theory called Rhythmanalysis which, according to Lefebvre enables a thinking of space and time separately and together. Rhythmanalysis is defined as "a science, a new field of knowledge: the analysis of rhythms with practical consequences" (Lefebvre, 2004, p. viii). Its general theory states that everywhere time, space and expenditure of energy interact there is "rhythm" (ibid, p. 15). A Lefebvrian approach to public space takes into consideration elements of time and expenditure of energy in the perceived space of interest. These approaches are important for researching life in changing urban landscapes because it is not always well known how other people in different contexts live (Elden, 2004).

The Production of Space, *The Right to the City* and *Rhythmanalysis* are embedded in ethnography because they are immersed in the lived experiences and time practices of inhabitants, as well as the physical spaces they act and interact in (Conquergood, 1991; Chari and Gidwani, 2005). (Social) space is a (social) product (Lefebvre, 1991, p. 26). Humans, for Lefebvre, are not creators of space rather they are producers of space. The role of 'production' begins with an idea that produces the world; nature then produces the human being who in turn, and by display of struggle and labour, produces space through history, knowledge and self-consciousness (ibid, p. 68). For Lefebvre the space produced by humans is juridical, political, religious, artistic and philosophical. To articulate this view Lefebvre conceived a dialectical model of three interrelated and overlapping layers namely (1) *perceived space* or 'spatial practice', (2) *lived space* or 'representational space' and (3) *conceived space* or 'representations of space'. In this schema opposition, contrast or antagonism defines the relationship of lived and conceived spaces (Lefebvre, 1991).

Perceived space according to Lefebvre (1991, p. 57) is material space that is in place before its physical occupation and use by sets of autonomous actors. It

¹In *Right to the City* 'inhabitants' refer to any group of marginalised people in urban society for example young people, Africans, the urban poor, women and the homeless.

functions as the concrete space of representation for a society's spatial practices—actions and activities. This space presents a sophistry that often leads to its misconception (Zhang, 2006). For Buser (2012) perceived space embraces sensory and observable phenomena that can be seen, heard, smelled, touched and tasted thus involving processes of transformation. Lived space refers to the perceived space of inhabitants and their perceptions of it as part of the outside world (Lefebvre, 1991). Through use perceived space is shaped by the active actions of inhabitants and is produced as 'lived space'. It is the symbolic "space of the body, of everyday life, of desire, of difference and of Anti-Logos" (Merrifield, 1995 p. 297). It is subjective, qualitative and often linked to the clandestine or underground side of life where alternative imaginations of space are made possible in a terrain of struggle (Simonsen, 2005 in Buser, 2012, p. 284). Lived space is society's *dominated* and hence passively experienced space which the imagination seeks to change and appropriate (Lefebvre, 1991).

Conceived space is the conceptualised space of scientists, planners, urbanists, technocratic sub divisors, social engineers and certain type of artists with a scientific bent (Lefebvre, 1991, p. 38). It is the *dominant* space of society that identifies what is lived and perceived with what is conceived (Merrifield, 1995). Through planning and design it produces abstract space which manifests in perceived space as concrete space through its physical engineering and construction in space. Whole cities and squares are examples of conceived space. In their use by inhabitants they become perceived-lived spaces. The three aspects of the triad are always interacting with each other and are always simultaneously conceived. Figure 2 is my interpretation of Lefebvre's unitary triad with overlapping and constantly interacting elements in the social production of space.

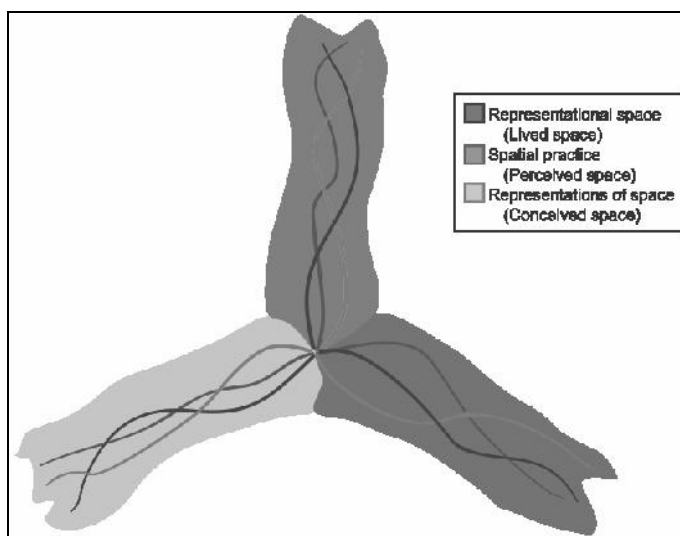


Figure 2: Lefebvre's spatial triad

In this conception spatial practices secrets society's space by embracing processes of lived space and its contentious relationship with conceived space in the resultant perceived space, which is closely associated with spatial practices (Merrifield, 1993). Throughout his body of works Lefebvre privileges lived and perceived space of inhabitants over conceived space of the scientific because human experience in lived space is different from when it is imagined (conceived) and perceived (Lefebvre, 1991, p. 40). The triad is a hollow device that is constantly interpreted and refined

from context to context, and across disciplinary fields. Its core function as Lefebvre notes is to grasp the concrete by revealing ways through which lived space is produced and influenced by physical (perceived and conceived) space in everyday life.

In planning for example Carp (2008) uses the spatial triad in a teaching and research context and incorporates the conceptual tool in the course and field work of undergraduate planning students to get them to appreciate and recognise differences between their perceived expectations in the field versus the social reality of what is actually there (lived space). The use of the triad in concrete situations as Carp (2008, p. 137) explains, enabled students to draw from their lived experiences gained from time spent observing and interacting with perceived spaces of inhabitants by focusing on each aspect of the triad in context. Through this process Carp was able to evaluate the practical contribution of the triad in planning education and research, also noted in the context is the triad's ability to influence and inform decision-making capacities of planning students as future producers of conceived spaces in society.

In the field of religion Knott (2005) explores Lefebvre's spatial triad in the development of alternative research methods for locating religion in spatial context and practice. Lived experience is inscribed in conceived sacred space like a church or mosque which structure bodily experiences of religion in practice. By introducing the body as foundational in the production of religion and religious spaces Knott arrives at spatial theory and method that is conscious of the simultaneity and multidimensionality of religion's 'space' as physical (perceived), mental (conceived) and social (lived). What is clear for Knott (2005, p. 27-28) is that contemporary analyses of any space and object in space must engage Lefebvre's unitary theory of social space and its related ideas inscribed in the triad because it is 'extremely' fruitful.

Lefebvre's spatial triad is not discipline bound as Carp and Knott's ethnographic works reveal. In geography generally, Lefebvrian methods and likewise ethnographic techniques are rare and underused (Megoran, 2006). The two research methods struggle for representation in the field they are most compatible with. Prevailing conditions as Herbert (2000) notes need to be carefully assessed because the continued neglect of ethnography (and Lefebvrian discourses) by geographers has detrimental consequences for the discipline. In the context of this paper a Lefebvrian analysis of public space considers *The Production of Space*, *The Right to the City* and *Rhythmanalysis* as expressions of each of the layers of the triad in the context of ethnography. *The Production of Space* in this regard occupies perceived space, *The Right to the City* takes on the politics of lived space and *Rhythmanalysis* engages the science of lived space in light of conceived space. Often one does not find urban geography research incorporating any three of Henry Lefebvre's immense texts in a single study. Traditional Lefebvrian research often focuses either on *The Production of Space* as a whole (McCann, 1999), or it extracts the spatial triad and use it in its abstract form; a practice which Lefebvre (1991, p. 40) cautions against. In other instances interest is on *The Right to the City* (Harvey, 2008) without *Rhythmanalysis* or on *Rhythmanalysis* without *The Right to the City* and *The Production of Space* (Simpson, 2012).

At other ends contemporary readers and experts of Lefebvre's vast works seek to globalise his methodological scholarship in the hopes of unearthing processes and

structures of coloniality in affected regions of the capitalist world (Goonewardena *et al.*, 2008). Purcell (2002) however recasts the ways in which Lefebvre's conceptual and theoretical methods can be used to contextualise contemporary urban life under neoliberal discourse. In 'excavating Lefebvre' Purcell combines *The Production of Space* with the Right to the City, and Space and Politics to arrive at a new *urban politics of the inhabitant* and its theoretical problematic as dominated lived space. In light of the brief literature review on Lefebvre's methods and approaches to research, the discussion turns to the post-apartheid spatial context informing the study.

Mary Fitzgerald Square: contested space of inhabitants

This study on Mary Fitzgerald Square began in 2009 with an undertaking of as postgraduate research in Geography at the University of the Witwatersrand. Encounters with a variety of African youths, and their physical presence in the perceived and conceived public space of research rendered the square as a site of *live* experiences and hence 'lived space'. Skateboarding is a pastime that is mainly done by a group of young people in the city, and this practice is strongly dependent on conceived urban space. By virtue of their social-spatial practice this group challenges dominant space by transgressing physical and abstract structures conceived to prohibit their use of public space (Németh, 2006). Their inability to resist the urge to use urban streets and squares generally makes their marginalisation from these spaces a practical reality.

In post-apartheid Johannesburg public space by-laws of 2004 are dominant text which mediates activities in the square by assigning what is permissible and determining the terms and conditions for use. That is, how the space should be/is allowed to be *lived*. Youth in general are marginalised in the representational text due to their energetic uses of public spaces. Dynamics between lived and conceived uses of public space lead to situations where skateboarders in particular and urban youth in general, are misrepresented as problem groups in need of regulation and constant monitoring (Malone, 2002).

Life in a post-apartheid urban landscape (2009-2010)

In Newtown skateboarders roam the urban landscape looking for opportunities to express themselves, and then finding ways of overcoming structural barriers that prohibit them from attaining that which they desire: spatial expression². They were observed in the precinct walking about with their tools of appropriation in their hands, representing a symbolic imagery of a democratic freedom and a right denied. As mentioned earlier, skateboarding is a spatial practice that is outlawed by municipality public space by-laws which state, in Chapter 3 under *Prohibited Conduct*, that "no person may within a public open space play an active game, except in an area designated for that purpose on a sport playing field or on a golf course" (City of Johannesburg, 2004, p. 11). An active game according to the municipality discourse, refers to any physical activity participated in by one or more people in an open public space and with potential to cause injury or harm to other users or the public space itself as municipal property.

²Democratic expression is a spatial right outlined in the Bill of Rights which embraces artistic creativity as a constitutional right for SA inhabitants (citizens) (Constitution of South Africa Act, No. 108 of 1996)

Skateboarding is conceived as an illegal spatial practice by municipality by-laws which prohibit skateboarders from using public space. Prohibition is the ultimate foundation of social space (Lefebvre, 1991). This prohibition immediately exempts this group from the square because they seek it for active socialising. None the less, skateboarders manage to transgress this abstraction through practice in the precinct streets (Phasha, 2012) rather than its wide open Mary Fitzgerald Square. The Right to the City discourse revealed itself in context not through formal texts but through skaters' lived experiences and encounters with abstract space of power. In their own words the struggle lies somewhere between their creative use of urban space and the city's perceptions of their use. One skater explained

"If you're a street skater, you use grinds and pavements. In a (formal) skate park you find a ramp and those things but street skating is much more creative than skate-park skateboarding because it (park-skating) is too safe!" (Interview, skateboarder, 2009).

From the statement it is clear that skaters have a creative energy that cannot, or is unable to, submit to 'spatial dictatorship' (Phasha, 2012, p. 78). Whoever controls space controls society (Lemanski and Saff, 2010). The City of Johannesburg is the dominant space which on the one hand, determines terms of public access and use of the square and on the other, facilitates its private uses and management (Peyroux, 2007). Skaters were probed about their visibly absent 'rhythm' in the square compared to surrounding streets. The square's design emerged as a hindrance (see Figure 3). This phenomenon is known as 'deterrence by design' (Doherty, *et al.*, 2008, p. 301), and it is a deliberate strategy commonly used by urban managers and technocrats to produce public spaces which discourage rather than facilitate their social use (Van Deusen, 2002).



Figure 3: The flat and bumpy surface of the 2009/10 square (Source: author).

Phasha's time-use rather than space-use research makes interesting contributions to this discussion. Skateboarders always find alternative ways of escaping prohibition by contravening established by-laws. In Newtown streets they have learnt the work-schedules of security guards and the police in ways that enable them to recognise specific days in the week and different clock times in those days for practice (Phasha, 2012). It may appear that street skaters in Phasha's research internalise work schedules of law-enforcement agents in an effort to escape lawful arrest and/or

finer for violating spatial use principles outlined in the by-laws. However, this paper perceives their time-use strategies as a form of resistance mechanism that informs the manner through which the group undertakes calculated risks to use the precinct's streets, and the lengths they would go to, to challenge their domination in space and to defend their marginal position in it.

With regards to skateboarders in the context of the Newtown square, it is the actual space than its time element that occupied the lived experiences of the 2009/10 group. Its flat and rough design prohibited them from use, leading them to cite its 'bumpy' surface as cause for their absent rhythm and disinterest. Their politics are a 'cry and demand' (Mitchell, 2003, p. 11) for representation in post-apartheid Johannesburg. In the Right to the City context this entails "the right to urban life, to renewed centrality, to places of encounter and exchange, to life rhythms and time uses, enabling the full and complete *usage* of ...moments and places..." (Lefebvre, 1996, p. 179).

One skater articulated their cry and demand

"...we're not here to do anything but skate. I think the City doesn't understand skating. They just think we're being a nuisance because we use streets and other things that people don't normally use" (Interview, skateboarder, 2010; emphasis added).

Another went a step further and shared this expression

"...it's understandable that the City might use (...) safety to stop us from skating but it's like stopping someone from playing soccer! My perception of life has changed because I am a skater. Maybe if they start arresting us then I think I will stop using the city" (Interview, skateboarder, 2010).

In light of the 2009/10 lived experiences of skateboarders in Newtown, it is evident that the lived space of skateboarding youth is held back from expressing itself in the conceived square by design techniques and public space by-laws that discourage their uses of it. Since the 2009/10 research period the square underwent aesthetic changes which prompted a return to the site.

On the post-2010 square

The surface design of Mary Fitzgerald Square changed significantly after 2010. What remains is a renewed public space with a concave topography and smooth gentle curves that bend with it (see Figure 4). The space continues to attract unchecked groups of young people whose mere presence warrants metro police to re-enforce the desired order for a youth free square. The over-regulated square is sought by the city's youths whose cry and demand enables them to escape imposed spatial dictates. In the 2013 space a simultaneous unfolding of live rhythms was experienced in the guarded square whose political practice is 'non-practice'. The first rhythm was produced by a group of vibrant fashion designers preparing a photo shoot for their clothing line called 'Dark Dindie' (see Figure 5). For the co-owners of the line the square is perceived and experienced (lived) as a studio that makes possible the reality of their creative works. However, continued hassles from metro police affect their mood whenever they use the space.

During conversation it emerged that their time spent at the square was an uncomfortable experience which made them feel bad for using "other people's stuff".

Their use of the space is a stolen moment and negotiated one (between them and the police) in a society whose constitution embraces freedom to artistic creativity even though the material places within which these creative energies can be unfurled are not made explicit. What is at stake then is a fugitive movement in space. This movement involves an escape and stolen life (time) whose relation to law is reducible neither to simple prohibition nor bare transgression (Moten, 2008 in Sexton, 2011).

In the same time-space a familiar sight appeared and etched itself onto the preserved site in full view of, and complete oblivion to, metro police stationed at the site. Figure 6 illustrates live transgression of the square by two skateboarders. This event was intriguing to witness because for the first time in the research journey skateboarders were seen in action in the square albeit for a few seconds in transit. This group was much younger and less political compared to the earlier group. They were lost and looking for their peers in order to participate in the awareness raising Global Skateboarders' Movement event. I offered to help and as we moved from the square and onto the sidewalk they ensconced me with their energy or as (Phasha, 2012, p. 77) describes it, a "spirit of oneness" that they exude in the moment of expression. They intuitively threw their boards on the pavement and rode gently around me as we moved in the space.



Figure 4: The re-designed physical space post-2010 (Source: author).

I was curious about their reasons for not using the square for practice like they do the streets. Interestingly they used the same utterances used by the earlier group; that the square is bumpy. I posed a rhetorical question 'Don't you think your ability to skate on the square proves that the space is skateable?' Their facial expression and lack of response indicated that the thought had never occurred to them. At this point I could not resist giving an informal lecture on the historical significance of the perceived space they so passively experienced. Their lack of historical insight was concerning in respect to their political imagination.

In *Introduction to Modernity* Lefebvre (1995, p. 160) bemoans the 'ignorance' of young people about matters concerning history. In continental Africa, (Diouf, 2003) articulates the realities of this fact on the part of African youth. African youth as Diouf states, have an "impulse to rip themselves away from the continent and to erase all attachment to history and place, young Africans symbolize the uneven trajectory of an Africa in search of its rhythm and its identity. Situated in a temporality both

indigenous and global, they express longings and demands that are much more creative than murderous” (Diouf, 2003, p. 10). As generations come and go so too do their spatial practices along with them. Through Lefebvrian analysis we can map generational differences in and new uses of public space to articulate contemporary social struggles for creative practices in Johannesburg city. For the post-2010 youth, urban life in the context of Mary Fitzgerald Square is but a series of on-going struggle for survival and mobility (Simone, 2005) in a changing urban landscape.



Figure 5: Creative inhabitants in regulated space (Source: author).



Figure 6: Creative transgression in practice.

Conclusion

Youths barely experience urban space as a social site for play and creative expression. The lived space of young inhabitants in context scrapes the margins of political and academic discourse when it should be occupying central debates so that it can be known how creative youths live in a changing Johannesburg. Using Lefebvrian methods the paper revealed the manner through which skateboarders and fashion designers struggle to occupy Mary Fitzgerald Square and the manner through which their creative energies are changed *for* them rather than *by* them. The square is a reformed agora which, by virtue of its conceived and elitist nature, is used as a tool to exclude certain groups of young people from appropriating it on the

basis of their creative practices. Current conditions render it a contested social space where ordinary users struggle to find means to democratic expression. This situation perpetuates the old spirit of segregation, this time by spatial practices as opposed to race, sex and class. This process counters the promises of a developing democracy and delays its envisioned advances for a society in transition. Furthermore, ignoring it undermines potential to bridge generational knowledge gaps in a fractured geographical society.

Acknowledgements

Warm thanks to Arina Potgieter and Breanne Robb in the Department of Geography (Unisa) for the technical assistance and review of the paper.

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IV. Housing and holidaying



Piran, Slovenia (Source: Nico Kotze)

Houses, services and jobs, the dilemma of the rural population in South Africa: a case study of Nthabaseng Village

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Abstract: A large proportion of the sub-Saharan population lives in housing units in urban and rural areas that do not provide for the basic needs of the inhabitants. In South Africa the government has attempted to address the housing issue by building Reconstruction and Development Programme (RDP) houses for the homeless. Unfortunately, the recipients of these housing units are of the opinion that these developments do not provide for their basic needs. Furthermore, their dissatisfaction has resulted in civil unrest in a number of urban settlements. The concept reflecting the level of satisfaction experienced in terms of housing is very complex; generally, it is defined as the level of satisfaction that a person experiences in terms of the housing unit which he/she occupies, as well as the neighbourhood and environment in which he/she lives. This case study investigates the quality of the housing units and services provided in Nthabaseng Village, Limpopo Province, in the northern region of South Africa. Facts that came to light were firstly, that the RDP houses have been constructed in an area where the employment opportunities for the inhabitants are limited. Hence, it was found that most of the interviewees are unemployed. Secondly, the interviewees are dissatisfied with the quality of the structure and the size of the housing units, as well as the services provided. Although the RDP houses in this development have bathrooms, these are not connected to a main water supply system. Of the three reservoirs that were installed in 2007, only one was still operational by 2011, when the data collecting process was being carried out, while only one communal tap served the entire community at that time.

Introduction

Historically, as a result of the previous Apartheid laws in South Africa, the movements of the majority of the country's population have been restricted and continue to have an impact on the accessibility of low-cost houses in terms of their availability and affordability – especially in the case of the poor (Moolla, Kotze and Block, 2011). Furthermore, inadequate planning for the provision of low-cost housing for the large impoverished black population and developments in this respect have generally led resulted in large backlog in housing in South Africa (Snowman and Urquhart, 1998). With the abolition in the 1980s of the influx-control laws, which restricted the movement of people of colour, the housing problem has become even more acute (Snowman and Urquhart, 1998). According to a report in 2008, the housing backlog stood at 2, 3 million housing units in the country (Bhengu, 2008). Furthermore, the urbanisation process in South Africa has exceeded the investment by local authorities in infrastructural development and services delivery, especially in the poorer urban areas (Westaway 2006; Kotze and Mathola, 2012).

This situation has been intensified through the legacy of Apartheid, with large pockets of poverty emerging in the townships which today are often dominated by informal shacks, bringing with them overcrowded conditions (Rosental, 2008). While on the other hand, the traditional white residential areas that were established during the Apartheid era have generally reflected an increase in property prices subsequent to the repeal of the Group Areas Act (Act 45 of 1986) in 1994, the black townships, on the other hand, have become more rundown owing to the overcrowded

conditions, the latter resulting from the influx of middle class black people (see Donaldson and Kotze, 2006; Kotze, 1999).

Attempts have been made to upgrade informal settlements in South Africa. However, this has often been shrouded in controversy, due to the 'legacy of Apartheid', where populations groups were often forcibly removed during the so-called renewal programmes, sometimes to unfavourable locations (Zack, 2002). A good case in point is the movement of people from District Six to Mitchell's Plain in Cape Town, and from Sophiatown to Soweto in Johannesburg. In both cases, the initial neighbourhoods were located in close proximity to the CBD of each city, while the new residential locations were located in the peripheral areas of each city.

The aim of this paper is to investigate the development and quality of Reconstruction and Development Programme (RDP) houses and of services to the population in Nthabaseng Village in Limpopo Province as well as to establish the quality of life as perceived by the interviewees living in this rural setting. This paper is divided into four sections: the first is a description of the study area and the methodology used in this case study, the second, is an overview of RDP houses in South Africa. The third section deals with demographic attributes, as well as the satisfaction levels of the interviewees in terms of their housing units in Nthabaseng Village; while the final section presents concluding remarks.

The study area and the methodology

Nthabiseng is a rural village near Morebeng (formerly known as Soekmekaar) and falls under the Molemole Local Municipality in Limpopo Province (see Figure 1). The village is located in a vegetable (potatoes, tomatoes, cabbage) and fruit- (mangos, peaches, oranges) producing area. Nthabiseng was developed in 1995 after the first democratic elections in South Africa to accommodate the former farm-workers of the area (Molemole Local Municipality, 2008).

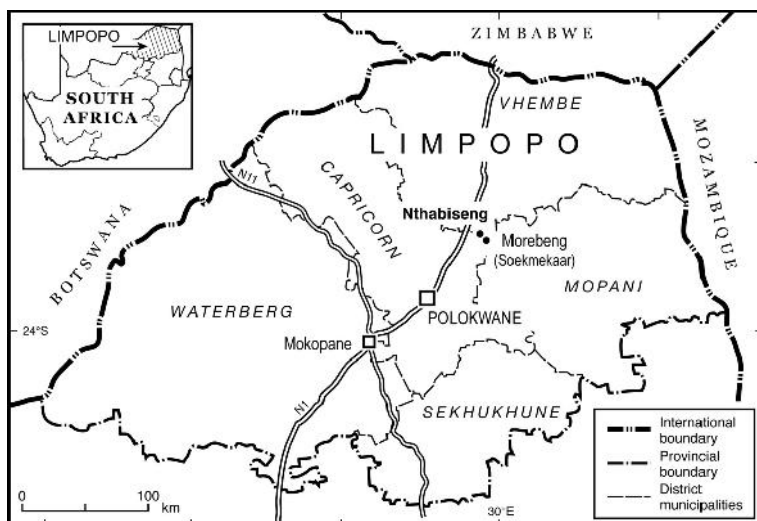


Figure 1: The location of Nthabiseng Village in Limpopo.

The data concerning the socio-economic attributes of the interviewees (the age, gender, income, qualifications and employment status of the respective heads of households), their housing, and perceptions of quality of life (the number of rooms per house, their level of satisfaction with regard to the RDP houses, extensions to their housing units, as well as the level of satisfaction with service delivery in the

village) were collected using a systematic sample. The first house in every street was chosen by chance with the aid of a gambling dice. Every fifth house following the first unit selected was included in the case study, the sample size being 120.

An overview of RDP houses in South Africa

When the African National Congress (ANC) government came into power in South Africa in 1994, it promised to increase the share of the national budget for the construction of subsidised housing for the poor from two percent to five percent. The government's vision was to build one million new housing units during the subsequent five years (Fitchett, 2001). The mechanism used by the new government to rid the country of the legacy of Apartheid and to redress the inequalities in society, namely the Reconstruction and Development Programme (also known as the RDP), focuses on all facets of transformation including the building of houses for the homeless (Fitchett, 2001; Donaldson and Marais, 2002).

The statistics on the number of RDP houses built during the first five years subsequent to the advent of the ANC as governing party in the country differ from those envisaged in the initial objectives as stipulated in the RDP documents. "It is estimated that between 500 000 and 750 000 housing units were constructed between 1994 and 1999" (Marais *et al.*, 2002:381). However, owing to rising unemployment and a shortage of affordable housing, the number of people without proper housing is still increasing (O'Leary, 2003). The backlog in housing, together with the slow rate of building low-cost houses, has further widened the gap between home-owners and shack-dwellers. Because of these deteriorating conditions, the South African government decided in 2008 that it would set out to improve the delivery of houses from 270 000 to 500 000 units on an annual basis until 2014, in the hope of eliminating the squatter camps and the slum areas in the country (Department of Housing, 2005, 2006; Bhengo, 2008).

A typical housing unit built under the RDP in South Africa has a proposed floor area of 36 square meters, developed on a plot of 250 square meters, which would supposedly give the unit access to clean water and a connection to a sewerage system (Thale, 2001; Cox, 2008). The standard unit, built of bricks and mortar, with a galvanised iron roof, metal doors and two or three small windows (Pollack, 2003), usually consists of an open-plan bedroom, lounge and kitchen, and a separate toilet. However, some adaptations to this basic plan were introduced (as seen in the case of Nthabaseng Village).

Only 30% of all the houses in South Africa constructed under this plan were larger than 30 square meters, however, and very few of these units constructed up to 1999 complied with the standard building regulations of the country (Pottie, 2003). In 2006, a typical RDP house cost about ZAR 45 000 to 50 000 to construct (USD 1.00 = ZAR 8.45 at present) (Cross *et al.*, 2006). Currently these prices could be much higher owing to inflation.

Building standards and the quality of the RDP housing units are at the forefront of housing debates in South Africa since the ANC government has not yet set the levels of acceptable standards required for the contractors and developers involved in building these units (Bond and Khosa, 2002). What is more, a number of rural and urban communities have lodged complaints levelled at the quality and safety of these houses (Rosenberger, 2003) with some such cases having led to civil unrest (Moolla, Kotze and Block, 2011). This dissatisfaction with the type of units provided in South

Africa must be seen in terms of the perceived quality of life (QOL) of the recipients of the RDP houses. However, QOL is a very elusive concept, because it has to be seen against the backdrop of a person's perceptions of his/her position in life against the milieu of the individual's prevailing cultural and social value systems within the area in which he/she lives (Pacione, 2003; Zhou *et al.*, 2011). However, in general, QOL tends to refer to a wide range of applications, such as the environmental conditions in which the person lives (the housing unit set in the natural environment) and/or the attributes of the members of the community/ population (Pacione, 2003; Zhang *et al.*, 2012).

Diaz-Serrano's (2009) contention is that the most effective way of determining an individual's subjective happiness or wellbeing is to look at domains such as work conditions, financial status, quality of housing and of the environment, as well as his/her health. This case study looks at the first four of these domains in Nthabaseng Village. The level of contentment within each of these spheres is determined not only by the individual's tangible circumstances, but also by the interviewee's individual aspirations and desires in each of these domains (Zhang *et al.*, 2012; Easterlin, 2006). However, universally, the most acknowledged dominant domain identified by scholars appears to be housing and residential satisfaction. Interviewees and individuals seem to regard this domain as the most important element, being representative of a good overall quality of life (Dunn, 2002; Diaz-Serrano, 2009, Baiden *et al.*, 2011). Møller (2001) as cited by Zhang *et al.*, (2012: 94) "has even gone so far as to say that housing is the most important predictor of life satisfaction."

Demographic attributes and levels of satisfaction concerning housing and services in Nthabaseng Village

In this section, the attributes of the interviewees in the case study were determined. Most of the household heads were female (55%). The largest number of interviewees came from the 31- to 40-years age category (30%). The percentages were found to decrease with an increase in age, with persons over 60 years of age representing only six percent of the sample (see Table 1). When the educational levels of the interviewees in the sample were scrutinised, it was clearly evident that the largest group (36%) fell into the category with only a primary school education. This seems to be in line with the rural population of South Africa of the past, with children tending to leave school at an early age. However, a large number of interviewees claimed that they have a tertiary qualification. This is of concern, especially against the backdrop of the very high unemployment rate.

The unemployment rate of the interviewees in Nthabiseng has reached the 72% mark (the national average for unemployment in South Africa recorded during the 2011 census was found to be almost 25%). This means that the developments involving RDP houses have been established in an area where the chances of finding employment are very limited. This is also evident from the income level of the interviewees, with 54% claiming an income of less than ZAR 1 500 per month (see Table 1), and points to the fact that their sole means of a livelihood lies in grants from the government.

Table 1: Demographic attributes of interviewed household heads.

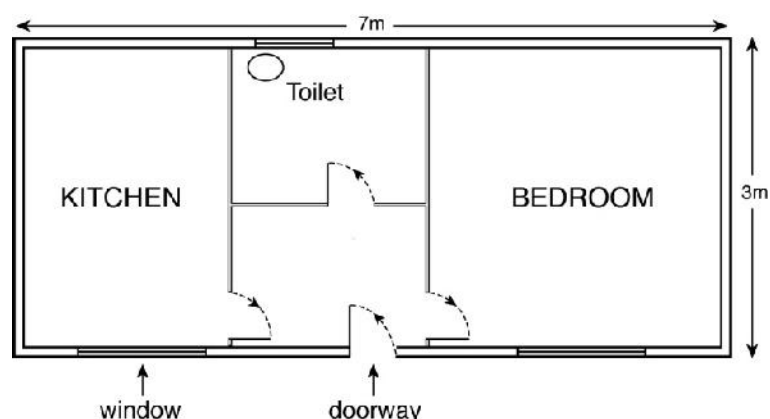
Gender of interviewees:	Male	45%
	Female	55%
Age of interviewees:	≤ 30 years	18%
	31 – 40 years	30%
	41 – 50 years	26%
	51 – 60 years	20%
	> 60 years	6%
Educational level of interviewees:	≤ Grade 7	36%
	Grade 8 – 11	32%
	Grade 12	18%
	Tertiary qualification	14%
Employment level of interviewees:	Employed	28%
	Unemployed	72%
Income of interviewees:	≤ ZAR 1 500	54%
	ZAR 1 501 – 2 500	20%
	ZAR 2 501 – 3 500	18%
	> ZAR 3 501	8%

Research revealed that the largest percentage (44%) of the interviewees had lived in the housing unit for more than 10 years (see Table 2). Only eight percent of the people included in the case study had stayed in the units for less than one year. Scrutiny of their previous accommodation showed that not one of the interviewees had lived in a formal house before moving into an RDP housing unit. Forty percent had lived with family and friends or had shared accommodation with another party (see Table 2). Thirty-six percent had rented a room, most probably a corrugated-iron structure – without the basic services – in the backyard of someone else's house. The remaining 24% of the respondents had lived in an informal house that would have been constructed from whatever building material was available in the area.

Table 2: Length of stay in an RDP house and previous accommodation

Length of stay in house:	< 1 year	8%
	1 – 5 years	20%
	6 – 10 years	28%
	> 10 years	44%
Previous accommodation:	Informal house (shack)	24%
	With friends and family	40%
	Rented flat or room	36%

An examination of the satisfaction levels concerning the RDP housing units revealed that most of the interviewees are dissatisfied with the provided houses. As opposed to other RDP houses, these units consist of three rooms, a living-cum-bedroom, a kitchen and a bathroom, with larger windows in the first two rooms and a very small window in the latter (see Figure 3). The least dissatisfaction was registered in terms of the size of the housing units, which is surprising, in the light of the fact that the size of these houses amounts to only 27 square metres on a 100 square-metre plot (well below what is recommended by the Reconstruction and Development Programme).

**Figure 2:** The design of an RDP house in Nthabiseng Village.

The highest levels of dissatisfaction (88%) registered were in terms of the bathrooms. Although they were developed as part of the house, they have not been connected to the water supply and the sewerage system. This source of discontent was closely followed by dissatisfaction levels of 80% for the roofs and windows of the houses. Another issue was the pitch of the roofs which could result in leaks during heavy rain-storms. Problems associated with the structures are evidently that no concrete beams or lintels were used above the windows and doors. Such poor workmanship could result in windows that are not easily opened, apparently the main grievance indicated by the interviewees. The doors and walls of the houses and the kitchens evoked dissatisfaction levels of 60%, 68% and 62% respectively. The finally umbrella statement of discontent was that 70% of the interviewees indicated

that they are generally dissatisfied with the houses built under the RDP for housing in Nthabiseng village.

Table 3: Satisfaction levels concerning housing units

	Satisfied	Uncertain	Dissatisfied
Size of house	36%	8%	56%
Roof of house	18%	2%	80%
Windows of the house	20%	0%	80%
Doors of the house	34%	6%	60%
Walls of the house	28%	4%	68%
Kitchen	32%	6%	62%
Bathroom	10%	2%	88%
Total structure	20%	10%	70%

The highest level of dissatisfaction registered by the interviewees was in terms of health care (90%), because there is no such service in the village. The closest medical clinic is located 12.5km from Nthabiseng and the closest hospital is Botlokwa Hospital, 32.5km away. Although the constitution guarantees access to clean water to the citizens of the country (Knight, 2001), 78% of the interviewees indicated that they were dissatisfied with the water supply for the village (see Table 4). During 2007, four water reservoirs were installed in the village. However, during the data-collecting process, only one of these reservoirs was found to contain water, while the total population of Nthabiseng village at that time proved to be reliant on only one communal tap.

The delivery of sanitation and electricity services in Ntabiseng recorded dissatisfaction levels of 64% and 62% respectively. Although the RDP houses were developed with bathrooms with flush toilets, these were not connected to a sewerage system. The dissatisfaction with the supply of electricity could relate to the increase in the cost of this service – as also found in other areas in the country (e.g. Kotze and Mathola, 2012; Moolla *et al.*, 2011). From this study, it seems that the interviewees are not as dissatisfied with the educational and recreational facilities in the village as they are with other criteria.

Table 4: Levels of satisfaction levels concerning services

	Satisfied	Uncertain	Dissatisfied
Sanitation	10%	24%	64%
Water supply	22%	0%	78%
Electricity	38%	0%	62%
Health care	10%	0%	90%
Education	36%	14%	50%
Recreation	25%	30%	45%

Conclusion

The people living in this village who had previously worked on commercial farms in the area lost their work and with it, were deprived of their homes. The government tried to address the plight of the homeless by developing RDP houses in the rural setting of Nthabiseng village. From this case study, it is clear that the residents of the village are not satisfied with the quality of the housing units, nor with service delivery. The houses are small and poorly planned. In some cases, the recipients of these houses have built on an outside kitchen to provide for their needs.

The problem arising from the development at Nthabaseng Village is it that was developed in an area with no employment opportunities, as is evident from the high unemployment rate in the study area. From the income of the interviewees, it is clear that they depend exclusively on government grants to provide for their basic needs. The people living in the RDP houses in this area can be easily recognised as poverty-stricken. They have been confined to an area without any opportunities for improving their living conditions and life style on account of the lack of employment and opportunity. As such, they rely on government grants to provide for their basic needs.

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Current trends on residential property ownership desegregation in Bloemfontein, South Africa

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Abstract: The investigation responds to the low ebb in racial property ownership desegregation discourse in South Africa. The paper provides a review of recent desegregation studies in South Africa and its empirical reflection in the secondary city of Bloemfontein. The investigation supports current discourses focused on desegregation of residential property ownership in urban South Africa. Drawing on the Bloemfontein experience, it is demonstrated that significant progress has been made in this type of desegregation.

Introduction

The legal segregation of different races, in terms of residential life and property ownership, was a defining feature of twentieth century South Africa (Robinson, 1996). This was the result of a range of interventions although the Group Areas Act of 1950 was the main legislative framework that underpinned the near-absolute segregation of different racial groups spatially. After this Act was repealed in 1991, all racial groups could choose where to live and own property (Christopher, 2005). Owing to the Apartheid-induced scarcity of appropriate economic opportunities, however, Black South Africans have, until recently, been severely restricted in options available for exercising these newly acquired spatial mobility rights, including the choice of where to reside (Christopher, 2001a). However, this has changed over the past two decades: the Black, Coloured, and “Indian” middle class is now larger than the entire White population (Donaldson *et al.*, 2013; Statistics South Africa, 2013).

Consequently, it has mainly been this nouveau riche cohort who have left previously designated townships and moved to less crowded, safer, and better serviced former White suburbs (Crankshaw, 2008; Horn and Ngcobo, 2003). The limited scholarship on urban desegregation has followed different methodologies. Most relevant investigations have been dominated by the work of Christopher (2001a, b, c, 2005), Crankshaw, 2005, 2008, 2012) and Horn (2000, 2002a, b, c, 2005) in detailed analyses of South Africa’s census records. Through comparison of the census data of the late Apartheid and early post-Apartheid eras, scholars argue that the high levels of White segregation that prevailed under the previous dispensation have changed slowly during the 1990s and 2000s. However, recent work by Crankshaw (2008, 2012) demonstrates that this trend is gaining pace in certain places, though still linked to class position. In a concurrent, but methodologically different debate, similar conclusions have been drawn. In those investigations, residential property ownership, as opposed to residential occupation measured in the census data, also indicates such trends (Donaldson and Kotze, 2006; Rex and Visser, 2009).

This investigation draws upon the latter methodology and chronicles current desegregation in Bloemfontein. The paper revisits investigations by Kotze and Donaldson (1998), and Rex and Visser (2009) in a city that was among the first to legislate residential segregation (as early as 1893). This study's objective is to determine the extent of subsequent desegregation. It is argued that considerable progress has been made in this respect.

A brief overview of residential segregation and desegregation in South African cities

Residential segregation is a worldwide phenomenon, chronicled and theorised extensively (Donaldson and Kotze, 2006). Segregation is typically based on personal attributes (race, class, ethnicity, religion) and/or other identity markers (such as sexual identity) (Donaldson and Kotze, 2006; Donaldson and van der Merwe, 1999a). Pacione (2005) has summarised these types of segregation, discerning three types of residential segregation: (1) segregation by social status; (2) segregation by family status and lifestyle; and (3) ethnic segregation. The (un)desirability of segregation is generally gauged on whether different types of residential segregation are voluntary or forced. In South Africa such segregation was forced and been investigated at length (Donaldson and Kotze, 2006).

Considering the effort devoted to investigating and recording residential segregation in South Africa during Apartheid, only a handful of geographers have investigated subsequent residential desegregation. Donaldson and Kotze (2006) note that the available academic scholarship is dominated by a small number of researchers, despite the scrapping of Apartheid legislation opening up a fertile field of research. Their studies have focused mainly on secondary and metropolitan cities (Crankshaw, 2008, 2012; Donaldson and Van der Merwe 1999a, b; Kotze and Donaldson 1998; Horn and Ngcobo, 2003; Lemanski 2005; Oldfield, 2004; Wood, 2000), while scant attention has been paid to smaller towns (Lemon and Clifford 2005).

Donaldson and Kotze (2006: 569–70) argue that desegregation studies in South Africa mainly endorse five viewpoints. The first is that not much desegregation has occurred and slowly at first (cf. Christopher, 2001a). The most recent national accounts of desegregation show that changes have been place specific, with the Free State Province being the most segregated, for example, while KwaZulu-Natal continues to be the most desegregated and group-specific, with the Black-White index of dissimilarity having remained high, although there has been some evidence of a decline (Christopher, 2005). Additionally, certain neighbourhoods are prone to become re-segregated (Horn and Ngcobo, 2003; Lemon and Clifford, 2005). Inner-city neighbourhoods generally have the highest desegregation percentage, except for Cape Town, which has remained largely White.

Secondly, most of the desegregation that has occurred has involved the movement of Black people into historically White areas, such as in Johannesburg (Crankshaw, 2008). In Pretoria, desegregation levels are highest in formerly White low- and middle-income residential areas (Horn and Ngcobo (2003; Prinsloo and Cloete, 2002) concomitant with an influx of higher income Blacks into newly developed middle-class and middle- to high-income areas. A third observation is that although forced racial segregation has been removed from the political landscape, it has been replaced by class-based segregation (Crankshaw, 2008; 2012). The clustering of higher income groups in gated communities, where certain neighbourhoods and new

estate developments are spatially closed off from other areas, has been driven primarily by class. Fourthly, Crankshaw notes that interracial mixing does not correlate with desegregation, however, the formation of new identities is evident in certain shared spaces (Crankshaw, 2008). Lastly, because Black people have not been active in the secondary housing market for very long, they are vulnerable under tough economic conditions. The exceptionally high interest rate during 1998–1999, the introduction of more stringent credit control, and the 2007 economic meltdown caused many to have their houses repossessed (Donaldson and Kotze, 2006). In the analysis that follows, it is our contention that to varying degrees, these trends can also be observed in Bloemfontein – the South African city that implemented residential segregation legislation first, and which is located in the country's most segregated region, the Free State Province (Christopher 2005).

Figure 1: Percentage desegregation levels per Bloemfontein suburb in 2007. (Source: Rex and Visser, 2009).

and two cemeteries (Krige, 1991; see Fig. 1 for an illustration of the current suburbs of Bloemfontein).

The first systematic post-Apartheid investigation into the desegregation of residential property ownership in Bloemfontein was undertaken to investigate the property data roll of the municipality, confirming extreme levels of segregation. In December 1995, the percentage of Black homeowners identified in the former White suburbs of Bloemfontein amounted to 2.3% (Kotze and Donaldson, 1998; Fig. 1). In most suburbs, less than 1% of homeowners were Black, except in the case of four areas: Fauna/Uitsig (1.0%), Pellissier (1.7%), Ehrlichpark (8.8%) and Lourierpark (25.9%; Kotze and Donaldson 1998; Table 1). These four suburbs are all situated to the south and south-west of the CBD and are either adjacent to or in close proximity to the respective Black and Coloured townships of Mangaung and Heidedal (Kotze and Donaldson, 1998; Fig. 2). Kotze and Donaldson (1998) argued that one reason for Black homeowners settling in these suburbs was that these neighbourhoods had the lowest property prices in the former White suburbs of Bloemfontein. Thus people with a lower income could more easily afford residential properties in these areas.

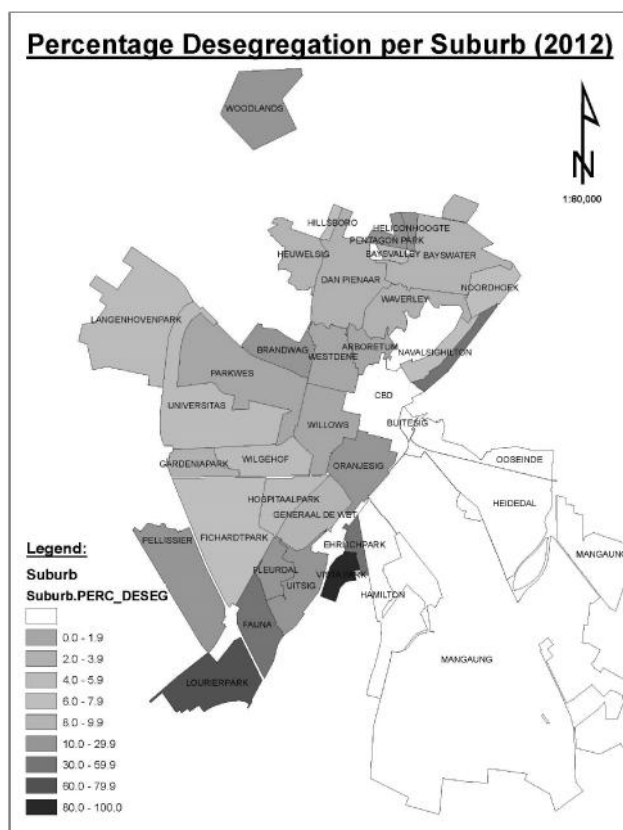


Figure 2: Percentage desegregation levels per Bloemfontein suburb in 2012. (Source: Calculated by the authors from the 2012 Property Data Roll of the Mangaung Metropolitan Municipality).

The Bloemfontein CBD was not part of Kotze and Donaldson's (1998) investigation, as it did not contain many residential properties. Nevertheless, the CBD witnessed a shift in the racial composition of residential property owners, from exclusively White ownership in 1991 to desegregation of almost 50% by 2001 (Jürgens *et al.*, 2003) and 77% by 2004 (Hoogendoorn and Marais, 2008). Jürgens *et al.* (2003) concluded that economically mobile "non-Whites" only reside in the CBD for an interim period,

aiming to leave the CBD, after a brief sojourn, to settle in former White residential areas. In comparison to other South African cities (except Cape Town), it was found that the Bloemfontein inner-city desegregation is taking place at a slower rate and on a smaller scale. This can be attributed to the compactness of Bloemfontein and the relatively close proximity of its Black townships, such as Mangaung, to the CBD, eliminating the need to move to former White areas in order to save on transport costs and travelling time (Jürgens *et al.*, 2003).

Current desegregation patterns in Bloemfontein

The analysis of the 2012 data source sought to indicate to what extent desegregation in terms of ownership has taken place within the former White suburbs of Bloemfontein since the 2007 investigation (Rex and Visser, 2009). It was possible to determine the type of ownership of each residential property in the suburbs and the results are tabulated in Table 1.

The 'Suburb' column in Table 1 is sorted according to the desegregation levels of each suburb, from the suburbs displaying the highest desegregation levels in the top row of the table, to the suburbs with the lowest desegregation levels at the bottom of the table.

An analysis of the data indicates that by 2012, 15.3% of the erven located in the former White suburbs of Bloemfontein were Black-owned, as compared to 11.4% in 2007 (Rex and Visser, 2009) and 2.3% in 1995 (Kotze and Donaldson, 1998). Almost 34.2% has been achieved in the desegregation levels of Black-owned erven within the suburbs of Bloemfontein since 2007. In their study of the 1995 data source, Kotze and Donaldson (1998) combined the various suburbs of Bloemfontein, categorising them into 17 suburbs, whilst the study of the 2007 data source by Rex and Visser (2009) was more fine-grained, categorising Bloemfontein into 30 suburbs. Since the 2007 study (Rex and Visser, 2009), the former White suburbs of Bloemfontein have expanded further, principally in a north-westerly direction. The suburbs of Woodlands and Arboretum are therefore now included in this study, categorising Bloemfontein into 32 suburbs.

Whilst there was only one suburb (Lourier Park) with a desegregation level of more than 10% in 1995 (Kotze and Donaldson, 1998) and eight suburbs with a 10% or higher desegregation levels in 2007 (Rex and Visser, 2009), the 2012 data source has indicated that 13 suburbs achieved a desegregation level of more than 10%. The five suburbs that obtained the highest percentage desegregation levels out of the 2007 data source are again the top five desegregated suburbs out of the 2012 data source. A significant observation concerns the fact that out of the four suburbs that displayed the highest percentage of desegregation levels in terms of the 1995 data source, three of these suburbs (Lourier Park, Ehrlich Park, and Fauna/Uitsig) are amongst the top five desegregated suburbs in 2012, whilst the third most desegregated suburb (Pellissier) in terms of the 1995 data source is amongst the top eight desegregated suburbs in 2012. This points towards a continuation of the desegregation patterns of the former White residential suburbs located close to former township areas.

Table 1: Bloemfontein: Ownership percentages by suburb in 2012 (Number of erven per suburb in parentheses) (Source: Calculated by the author from the 2012 Property Data Roll of the Mangaung Local Municipality).

Suburb	Black-owned Erven	'Asian' Owned Erven	White Owned Erven	Trusts and Companies	Sectional Titles	Other	Total
Vista Park	92.6 (679)	0.0 (0)	4.9 (36)	1.8 (13)	0.7 (5)	0.0 (0)	100 (733)
Lourier Park	62.3 (663)	0.0 (0)	6.6 (70)	1.9 (20)	0.5 (5)	28.8 (306)	100 (1064)
Ehrlich Park	48.9 (231)	0.0 (0)	33.7 (159)	1.5 (7)	1.5 (7)	14.4 (68)	100 (472)
Fauna	37.7 (390)	0.1 (1)	55.0 (569)	1.1 (11)	3.3 (34)	2.9 (30)	100 (1035)
Hilton	35.8 (152)	0.2 (1)	38.6 (164)	5.9 (25)	8.9 (38)	10.6 (45)	100 (425)
Helicon Hoogte	20.0 (24)	5.8 (7)	60.8 (73)	5.0 (6)	6.7 (8)	1.7 (2)	100 (120)
Brandwag	15.8 (89)	1.8 (10)	56.2 (316)	16.0 (90)	3.9 (22)	6.2 (35)	100 (562)
Pellissier	15.0 (216)	0.1 (1)	65.4 (943)	3.0 (43)	8.7 (126)	7.8 (112)	100 (1441)
Woodlands	15.0 (99)	1.8 (12)	56.6 (374)	22.7 (150)	3.9 (26)	0.0 (0)	100 (661)
Uitsig	14.4 (156)	0.2 (2)	74.0 (804)	1.4 (15)	7.0 (76)	3.1 (34)	100 (1087)
Fleurdal	12.0 (41)	1.2 (4)	77.3 (265)	1.7 (6)	4.1 (14)	3.8 (13)	100 (343)
Pentagon Park	10.9 (33)	1.0 (3)	37.8 (115)	10.5 (32)	36.8 (112)	3.0 (9)	100 (304)
Oranjesig	10.0 (30)	0.0 (0)	42.8 (128)	25.4 (76)	2.3 (7)	19.4 (58)	100 (299)
Heuwelsig	9.0 (52)	3.5 (20)	63.0 (364)	8.8 (51)	12.5 (72)	3.3 (19)	100 (578)
Generaal De Wet	8.8 (62)	0.1 (1)	82.5 (578)	1.6 (11)	1.6 (11)	5.4 (38)	100 (701)
Bayswater	8.8 (103)	2.2 (26)	70.7 (826)	7.9 (92)	6.2 (72)	4.3 (50)	100 (1169)
Noordhoek	7.9 (46)	0.9 (5)	80.3 (470)	5.6 (33)	0.7 (4)	4.6 (27)	100 (585)
Fichardtpark	7.2 (159)	0.3 (6)	82.3 (1824)	3.6 (79)	2.7 (60)	3.9 (87)	100 (2215)
Hillsboro	6.5 (6)	1.1 (1)	66.7 (62)	5.4 (5)	15.1 (14)	5.4 (5)	100 (93)
Navalsig	6.3 (17)	1.1 (3)	36.8 (99)	17.5 (47)	27.1 (73)	11.2 (30)	100 (269)
Bays Valley	4.8 (3)	0.0 (0)	36.5 (23)	12.7 (8)	44.4 (28)	1.6 (1)	100 (63)
Universitas	4.6 (99)	0.5 (10)	72.7 (1558)	9.1 (196)	8.5 (183)	4.6 (98)	100 (2144)
Langenhovenpark	4.6 (74)	0.1 (2)	65.6 (1058)	9.4 (152)	17.2 (277)	3.2 (51)	100 (1614)
Wilgehof	4.5 (42)	0.1 (1)	78.5 (728)	3.6 (33)	9.3 (86)	4.0 (37)	100 (927)
Hospitaalpark	4.2 (29)	0.3 (2)	83.5 (582)	3.0 (21)	3.4 (24)	5.6 (39)	100 (697)
Gardenia Park	3.6 (18)	0.2 (1)	85.3 (430)	2.8 (14)	2.6 (13)	5.6 (28)	100 (504)
Dan Pienaar	3.0 (46)	0.7 (10)	76.0 (1159)	9.9 (151)	5.8 (89)	4.6 (70)	100 (1525)
Waverley	2.0 (12)	0.3 (2)	65.0 (396)	14.8 (90)	9.9 (60)	8.0 (49)	100 (609)
Willows	1.2 (3)	0.4 (1)	18.3 (44)	17.8 (43)	38.6 (93)	23.7 (57)	100 (241)
Westdene	0.6 (3)	0.0 (0)	49.0 (264)	23.9 (129)	19.1 (103)	7.4 (40)	100 (539)
Park West	0.4 (1)	1.8 (5)	63.8 (173)	16.6 (45)	5.5 (15)	11.8 (32)	100 (271)
Arboretum	0.0 (0)	0.0 (0)	15.0 (6)	25.0 (0)	27.5 (11)	32.5 (13)	100 (40)
Totals	15.3 (3578)	0.6 (137)	62.8 (14660)	7.3 (1704)	7.6 (1768)	6.4 (1483)	100 (23330)

The suburb of Vista Park, situated adjacent to Ehrlich Park, is the suburb in Bloemfontein that has achieved the highest levels of desegregation out of the analysis of the 2012 data source, namely 92.6%, as well as the lowest levels of White occupancy, (4.9%, Table 1 and Figure 2 for a spatial illustration thereof). Vista Park, having been established during 2005, is one of the newest suburbs of Bloemfontein and is currently in the process of being developed with middle class residences for the Black first-time buyer in mind.

Similarly, high desegregation levels have been registered for similar types of developments elsewhere in South Africa (Donaldson and Kotze, 2006). Vista Park and Ehrlich Park are also situated en route from the southern parts of the township of Mangaung towards the CBD of Bloemfontein and confirm a trend observed in other South African cities (Prinsloo and Cloete, 2002). Furthermore, the erven within Vista Park and Ehrlich Park have the smallest average size, as well as the lowest average Municipal erf valuations of all the suburbs that were not formerly Black Group Areas, making them the most affordable suburbs to reside in. In our view, these factors contribute to the high levels of Black homeownership in these suburbs. By contrast, the lowest levels of desegregation were recorded in the northern and western suburbs of Bloemfontein, situated the furthest away from the former Black and Coloured suburbs on the city's southern outskirts.

The highest percentage increase in desegregation levels since 2007 has been recorded in the suburb of Brandwag (119.4%), from 7.2% in 2007 to 15.8% in 2012. It should, however, be noted that this increase is distorted, as amongst others the Mangaung Metropolitan Municipality, as part of its Social Housing Project within the suburb of Brandwag, consolidated 126 erven into three erven during 2010.

The suburbs in Bloemfontein that are known for their high number of Black residents (comprising students and single residents) are Westdene, Willows, and Navalsig. The low desegregation levels of the suburbs of Westdene (0.6%), Willows (1.2%), and Navalsig (6.3%) obtained in this study, however, contradict this knowledge. It must, however, be stressed that this study only focused on the desegregation of Black-owned residential erven and that these suburbs have large numbers of flats, townhouses, and business premises within them, predominantly owned by Trusts and Companies.

To explain this pattern of desegregation, similarities and dissimilarities between the different types of erven were sought, beginning with an investigation of possible relationships that exist between erf size and value in relation to the suburban levels of desegregation.

The average erf size per former White suburb of Bloemfontein was calculated from the 2012 data source and a ranking was allocated from largest average erf size to smallest, ranging from 1–32 respectively. Table 3 shows the suburbs arranged hierarchically from highest desegregation levels (in terms of residential property ownership) to lowest, with each suburb's percentage of White ownership also indicated. Quite noticeable is that, on the whole, the suburbs with the highest number of Black-owned erven (with desegregation levels of 30% and higher) correspond with the suburbs having the smallest average size erven.

Table 2: Bloemfontein: Percentage Black erf owners per suburb – comparison between the 1995, 2007, and 2012 data sources (The 1995 data source indicates the combined suburbs in parentheses as categorised by Kotze and Donaldson (1998)).

Suburb	2012 Data Source	% increase(+)/decrease (-) in desegregation levels between 2007 and 2012	2007 Data Source	1995 Data Source
Vista Park	92.6	6.3	87.1	-
Lourier Park	62.3	2.5	60.8	25.9
Ehrlich Park	48.9	-8.3	53.3	8.8
Fauna	37.7	21.6	31.0	1.0 (Fauna/Uitsig)
Hilton	35.8	5.0	34.1	0.6
Helicon Hoogte	20.0	19.0	16.8	0.8 (Bayswater)
Brandwag	15.8	119.4	7.2	0.5
Pellissier	15.0	11.9	13.4	1.7
Woodlands	15.0	-	-	-
Uitsig	14.4	20.0	12.0	1.0 (Fauna/Uitsig)
Fleurdal	12.0	44.6	8.3	1.0 (Fauna/Uitsig)
Pentagon Park	10.9	17.2	9.3	0.8 (Bayswater)
Oranjesig	10.0	23.5	8.1	0.4 (Central South)
Heuwelsig	9.0	8.4	8.3	0.9
Generaal De Wet	8.8	66.0	5.3	1.0 (Fauna/Uitsig)
Bayswater	8.8	17.3	7.5	0.8
Noordhoek	7.9	5.3	7.5	0.5
Fichardtpark	7.2	20.0	6.0	0.2
Hillsboro	6.5	51.2	4.3	0.9 (Heuwelsig)
Navalsig	6.3	65.8	3.8	0.6 (Hilton)
Bays Valley	4.8	-2.0	4.9	0.8 (Bayswater)
Universitas	4.6	27.8	3.6	0.2
Langenhovenpark	4.6	58.6	2.9	0.8
Wilgehof	4.5	40.6	3.2	0.3
Hospitaalpark	4.2	13.5	3.7	0.2 (Fichardtpark)
Gardenia Park	3.6	50.0	2.4	0.3 (Wilgehof)
Dan Pienaar	3.0	30.4	2.3	0.4
Waverley	2.0	-28.6	2.8	0.3
Willows	1.2	-36.8	1.9	-
Westdene	0.6	20.0	0.5	0.0
Park West	0.4	0.0	0.4	-
Arboretum	0.0	-	-	-
Totals	15.3	34.2	11.4	2.3

Table 3: Bloemfontein: Average erf area per suburb in 2012

Suburb	Black Owned Erven (%)	White Owned Erven (%)	Average Erf Area (m ²)	Rank
Vista Park	92.6	4.9	400	32
Lourier Park	62.3	6.6	840	29
Ehrlich Park	48.9	33.7	670	31
Fauna	37.7	55.0	940	24
Hilton	35.8	38.6	840	28
Helicon Hoogte	20.0	60.8	1430	7
Brandwag	15.8	56.2	960	23
Pellissier	15.0	65.4	1290	11
Woodlands	15.0	56.6	1230	14
Uitsig	14.4	74.0	860	27
Fleurdal	12.0	77.3	1120	18
Pentagon Park	10.9	37.8	1210	15
Oranjesig	10.0	42.8	690	30
Heuwelsig	9.0	63.0	1600	3
Generaal De Wet	8.8	82.5	1030	21
Bayswater	8.8	70.7	1480	5
Noordhoek	7.9	80.3	1160	17
Fichardtpark	7.2	82.3	1190	16
Hillsboro	6.5	66.7	1530	4
Navalsig	6.3	36.8	1360	10
Bays Valley	4.8	36.5	1280	12
Universitas	4.6	72.7	1440	6
Langenhovenpark	4.6	65.6	1390	9
Wilgehof	4.5	78.5	950	25
Hospitaalpark	4.2	83.5	930	26
Gardenia Park	3.6	85.3	1020	22
Dan Pienaar	3.0	76.0	1400	8
Waverley	2.0	65.0	1840	1
Willows	1.2	18.3	1080	20
Westdene	0.6	49.0	1100	19
Park West	0.4	63.8	1250	13
Arboretum	0.0	15.0	1780	2

(Source: Calculated by the authors from the 2012 Mangaung Metropolitan Municipality Property Data Roll).

The average Municipal erf valuation, per former White suburb was calculated from the 2012 data source and a ranking was allocated from high to low according to average Municipal erf valuation, ranging from 1–32. Table 4 arranges the suburbs hierarchically from those with the highest to those with the lowest desegregation

levels, with each suburb's percentage of White ownership also indicated. Once again, it is significant that the suburbs with the highest number of Black-owned erven (with desegregation levels of 30% and higher) correspond with the suburbs having the smallest average Municipal erf valuation.

Table 4: Bloemfontein: Average Municipal erf valuation per suburb in 2012

Suburb	Black Owned Erven (%)	White Owned Erven (%)	Average Municipal Erf Valuation (Rand)	Rank
Vista Park	92.6	4.9	255 000	30
Lourier Park	62.3	6.6	205 000	32
Ehrlich Park	48.9	33.7	318 000	29
Fauna	37.7	55.0	550 000	24
Hilton	35.8	38.6	237 000	31
Helicon Hoogte	20.0	60.8	910 000	8
Brandwag	15.8	56.2	748 000	15
Pellissier	15.0	65.4	725 000	18
Woodlands	15.0	56.6	1 247 000	4
Uitsig	14.4	74.0	591 000	23
Fleurdal	12.0	77.3	643 000	19
Pentagon Park	10.9	37.8	1 271 000	3
Oranjesig	10.0	42.8	342 000	28
Heuwelsig	9.0	63.0	1 245 000	5
Generaal De Wet	8.8	82.5	603 000	21
Bayswater	8.8	70.7	726 000	17
Noordhoek	7.9	80.3	515 000	25
Fichardtpark	7.2	82.3	763 000	14
Hillsboro	6.5	66.7	1 037 000	6
Navalsig	6.3	36.8	472 000	27
Bays Valley	4.8	36.5	903 500	9
Universitas	4.6	72.7	848 000	11
Langenhovenpark	4.6	65.6	818 000	12
Wilgehof	4.5	78.5	506 000	26
Hospitaalpark	4.2	83.5	603 000	22
Gardenia Park	3.6	85.3	618 000	20
Dan Pienaar	3.0	76.0	937 000	7
Waverley	2.0	65.0	1 284 000	2
Willows	1.2	18.3	808 000	13
Westdene	0.6	49.0	877 000	10
Park West	0.4	63.8	734 000	16
Arboretum	0.0	15.0	1 785 000	1

(Source: Calculated by the authors from the 2012 Mangaung Metropolitan Municipality Property Data Roll).

With a view to investigating the desegregation patterns further, the suburbs of Bloemfontein were divided into three regions, namely the south-western, western and northern suburbs. Owing to the high percentage of non-residential land use, the suburbs on the periphery of the CBD of Bloemfontein – Westdene, Oranjesig, Navalsig, and Hilton – were excluded from this exercise. The rankings obtained for the average erf area and Municipal erf valuation per suburb, shown in Tables 3 and 4, were used to determine the averages per region. The results are tabulated in Tables 5, 6, and 7. The average percentage of desegregation per region was also obtained. The results that were obtained for the three regions during the 2007 study are also indicated at the bottom of Tables 5, 6, and 7 for comparison purposes.

Table 5: South-Western suburbs of Bloemfontein: average erven area ranking, average erven valuation ranking and average percentage desegregation

Suburb	Average Erven Area Ranking	Average Erven Valuation Ranking	Average Percentage Desegregation
Hospitaalpark	26	22	4.2
Generaal De Wet	21	21	8.8
Ehrlich Park	31	29	48.9
Vista Park	32	30	92.6
Fleurdal	18	19	12.0
Uitsig	27	23	14.4
Fauna	24	24	37.7
Lourier Park	29	32	62.3
Pellissier	11	18	15.0
Fichardtspark	16	14	7.2
Totals	23.5	23.2	30.3
Totals for 2007 (Rex and Visser, 2009)	21.7	20.2	28.1

(Source: Derived from Tables 3 and 4).

Further accentuating the desegregation patterns in 2007, the 2012 data source strongly corroborates the trend that the suburbs of Ehrlich Park, Vista Park, Uitsig, Fauna and Lourier Park, situated in the south-western portion of Bloemfontein, and the closest to the former Black township of Mangaung, achieved the highest levels of desegregation of all the former White suburbs. Furthermore, the suburbs to the south-west of the CBD have obtained the highest levels of desegregation of all the suburbs of Bloemfontein with an average of 30.3%, with rather high average ranking points of 23.5/32 for the average erf area and 23.2/32 for the average Municipal erf valuation.

These average ranking points further indicate that the smallest and most cost efficient erven are found in this part of Bloemfontein, confirming the earlier suggestion that these suburbs comprise attractive options for first time Black homeowners within the former White residential areas. A further attractive feature for homeowners lies in the fact that five major shopping centres, three secondary schools and five primary schools are located in these suburbs. Although, owing to method, the case of Bloemfontein and Mangaung cannot be directly compared with the other studies, this echoes a trend also identified in Johannesburg's formerly

White residential suburbs in close proximity to Soweto and *en route* to the Johannesburg and Pretoria CBDs (Horn and Ngcobo, 2003; Prinsloo and Cloete, 2002).

The suburbs to the west of the CBD have obtained the lowest levels of desegregation of all the suburbs with an average of 5.6%, although having favourable average ranking points of 16.3 for the average erf area and 16.7 for the average Municipal erf valuation (Table 6). One of the possible reasons for the low desegregation levels is that these suburbs are located directly on the opposite side of the CBD in relation to the townships of Mangaung and Heidedal. Another factor for their low desegregation levels is the lack of amenities such as schools and shopping centres that are more readily found in other parts of Bloemfontein. In addition, it would appear that prospective Black homeowners perceive these western suburbs as being politically conservative areas. Indeed, looking at the political representation of electoral wards for the western suburbs of Bloemfontein, it is found that generally 'White middle class' political parties enjoy strong support.

Table 6: Western suburbs of Bloemfontein: Average erven area ranking, average erven valuation ranking and average percentage desegregation

Suburb	Average Erven Area Ranking	Average Erven Valuation Ranking	Average Percentage Desegregation
Langenhovenpark	9	12	4.6
Brandwag (See Appendix A)	23	15	15.8
Universitas	6	11	4.6
Gardenia Park	22	20	3.6
Wilgehof	25	26	4.5
Park West	13	16	0.4
Totals	16.3	16.7	5.6
Totals for 2007 (Rex and Visser, 2009)	14.7	15.8	3.3

(Source: Derived from Tables 5 and 6).

If one considers that the lowest average ranking points of 8.6 for the average erf area and 8.6 for the average Municipal erf valuation (Table 7), suburbs north of the CBD have obtained respectable levels of desegregation, averaging 8.8%. These average ranking points highlight the fact that the erven with the largest average areas, as well as the highest Municipal erf valuation are found in these suburbs. A possible reason for these levels of desegregation is that these areas are where the wealthiest people of Bloemfontein reside. Generally, the Black elite, comprising company directors and high-ranking government officials, are willing and able to pay the high price of erven in these suburbs for investment purposes and the status linked to residing there. Further corroborating this contention, the new, gated suburb of Woodlands has obtained a desegregation level of 15.0% although it obtained a ranking of 4 for the Municipal erf valuation (i.e. the fourth most expensive erven are found in the suburb of Woodlands). Another contributing factor for the desegregation found in these suburbs could be the presence of good English primary and secondary schools, typically patronised by South African Black elites.

Table 7: Northern suburbs of Bloemfontein: Average erven area ranking, average erven valuation ranking and average percentage desegregation

Suburb	Average Erven Area Ranking	Average Erven Valuation Ranking	Average Percentage Desegregation
Helicon Heights	7	8	20.0
Pentagon Park	15	3	10.9
Bays Valley	12	9	4.8
Bayswater	5	17	8.8
Noordhoek	17	25	7.9
Hillsboro	4	6	6.5
Waverley	1	2	2.0
Dan Pienaar	8	7	3.0
Heuwelsig	3	5	9.0
Woodlands (See Appendix F)	14	4	15.0
Totals	8.6	8.6	8.8
Totals for 2007 (Rex and Visser, 2009)	6.9	7.1	7.1

(Source: Derived from Tables 3 and 4).

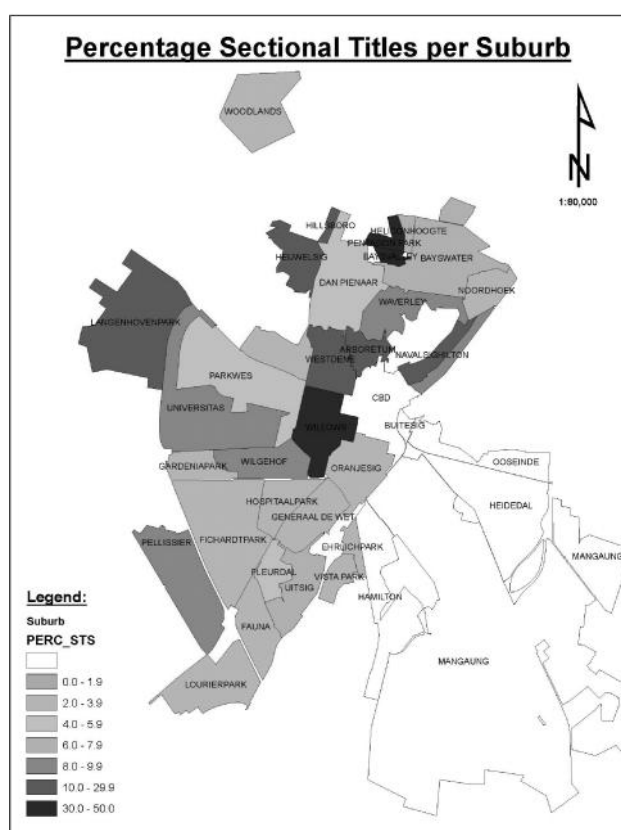


Figure 3: Percentage Sectional Titles per Bloemfontein suburb in 2012 (Source: Calculated by authors from the 2012 data source).

Table 8: Bloemfontein: Sectional Title ownership percentages by suburb in 2012

Suburb	% Sectional Title Developments per suburb (Number of erven in parentheses)	% Sectional Title Units Ownership (Number of units in parentheses)					
		Black-owned units	'Asian' owned units	White-owned units	Trusts and Companies	Other	Total
Vista Park	0.7 (5)	87.5 (7)	0.0 (0)	12.5 (1)	0.0 (0)	0.0 (0)	100 (8)
Hilton	8.9 (38)	76.9 (60)	0.0 (0)	9.0 (7)	14.1 (11)	0.0 (0)	100 (78)
Ehrlich Park	1.5 (7)	51.9 (28)	0.0 (0)	14.8 (8)	33.3 (18)	0.0 (0)	100 (54)
Lourier Park	0.5 (5)	40.0 (4)	0.0 (0)	40.0 (4)	20.0 (2)	0.0 (0)	100 (10)
Navalsig	27.1 (73)	33.7 (397)	3.6 (42)	50.6 (596)	12.1 (143)	0.0 (0)	100 (1178)
Fauna	3.3 (34)	24.8 (57)	0.0 (0)	65.2 (150)	10.0 (23)	0.0 (0)	100 (230)
Willows	38.6 (93)	16.9 (323)	0.1 (2)	61.1 (1169)	21.6 (413)	0.3 (6)	100 (1913)
Uitsig	7.0 (76)	15.2 (73)	0.0 (0)	76.7 (368)	8.1 (39)	0.0 (0)	100 (480)
Bayswater	6.2 (72)	14.7 (81)	0.5 (3)	48.2 (265)	36.2 (199)	0.4 (2)	100 (550)
Oranjesig	2.3 (7)	10.0 (8)	1.3 (1)	86.3 (69)	0.0 (0)	2.5 (2)	100 (80)
Westdene	19.1 (103)	9.9 (99)	3.7 (37)	59.5 (595)	26.9 (269)	0.0 (0)	100 (1000)
Pellissier	8.7 (126)	7.0 (69)	0.6 (6)	80.1 (792)	12.3 (122)	0.0 (0)	100 (989)
Brandwag	3.9 (22)	6.7 (13)	0.0 (0)	55.2 (107)	36.6 (71)	1.5 (3)	100 (194)
Waverley	9.9 (60)	6.6 (12)	1.7 (3)	64.6 (117)	27.1 (49)	0.0 (0)	100 (181)
Helicon Hoogte	6.7 (8)	6.0 (4)	0.0 (0)	76.1 (51)	17.9 (12)	0.0 (0)	100 (67)
Bays Valley	44.4 (28)	4.9 (9)	0.5 (1)	70.7 (130)	23.9 (44)	0.0 (0)	100 (184)
Park West	5.5 (15)	4.4 (7)	0.0 (0)	57.9 (92)	35.2 (56)	2.5 (4)	100 (159)
Pentagon Park	36.8 (112)	3.8 (22)	1.6 (9)	66.3 (379)	28.3 (162)	0.0 (0)	100 (572)
Langenhovenpark	17.2 (277)	2.8 (99)	0.5 (16)	79.1 (2795)	17.6 (621)	0.0 (1)	100 (3532)
Fleurdal	4.1 (14)	2.8 (12)	0.0 (0)	80.7 (352)	16.5 (72)	0.0 (0)	100 (436)
Woodlands	3.9 (26)	2.7 (14)	0.8 (4)	56.5 (288)	40.0 (204)	0.0 (0)	100 (510)
Hillsboro	15.1 (14)	2.7 (1)	0.0 (0)	91.9 (34)	5.4 (2)	0.0 (0)	100 (37)
Arboretum	27.5 (11)	2.6 (3)	0.9 (1)	78.1 (89)	18.4 (21)	0.0 (0)	100 (114)
Heuwelsig	12.5 (72)	2.5 (14)	1.4 (8)	82.2 (465)	13.8 (78)	0.2 (1)	100 (566)
Hospitaalpark	3.4 (24)	2.4 (8)	0.0 (0)	71.9 (243)	11.2 (38)	14.5 (49)	100 (338)
Wilgehof	9.3 (86)	2.3 (20)	0.0 (0)	72.5 (630)	9.8 (85)	15.4 (134)	100 (869)
Ficardtpark	2.7 (60)	2.3 (9)	0.0 (0)	84.5 (333)	13.2 (52)	0.0 (0)	100 (394)
Universitas	8.5 (183)	1.9 (23)	0.2 (3)	74.6 (909)	23.2 (283)	0.0 (0)	100 (1218)
Dan Pienaar	5.8 (89)	1.5 (15)	0.2 (2)	78.6 (784)	19.4 (194)	0.3 (3)	100 (998)
Gardenia Park	2.6 (13)	0.9 (1)	0.0 (0)	93.1 (108)	6.0 (7)	0.0 (0)	100 (116)
Generaal De Wet	1.6 (11)	0.0 (0)	0.0 (0)	100.0 (24)	0.0 (0)	0.0 (0)	100 (24)
Noordhoek	0.7 (4)	0.0 (0)	11.1 (1)	77.8 (7)	11.1 (1)	0.0 (0)	100 (9)
Totals	7.6 (1768)	8.7 (1492)	0.8 (139)	70.0 (11961)	19.3 (3291)	1.2 (205)	100 (17008)

(Source: Calculated by the author from the 2012 Mangaung Metropolitan Municipality Property Data Roll).

The data also contained information regarding the ownership of sectional titles. The analysis indicated that 7.6% of all properties (5.8% in 2007) contain sectional title developments (Tables 1 and 8). The results, indicating the number of sectional title developments – and units – per suburb are presented in Table 8. The suburbs column in Table 8 is sorted according to the suburbs with the highest desegregation levels in Sectional Title unit ownership in the top row of the table to the suburbs with the lowest desegregation levels in Sectional Title unit ownership at the bottom of the table. The numbers of sectional title developments per suburb are illustrated in Figure 3.

The suburbs achieving the highest sectional title unit desegregation levels are Vista Park, Hilton, Ehrlich Park, Lourier Park, and Navalsig. The high sectional title unit desegregation levels obtained for the suburbs of Hilton and Navalsig could indicate that less mobile Black homeowners reside in and around the city in order to be in close proximity to either their workplace or places of education. The average Black ownership of 8.7% for sectional title units being lower than the average percentage Black erf ownership of 15.3% – together with the fact that the suburbs of Vista Park, Lourier Park, Ehrlich Park, Fauna, Hilton, Helicon Heights, Brandwag, Pellissier, Woodlands, and Uitsig are known for areas of ‘Single Residential’ erven with the highest desegregation levels – indicates that the mobile Black homeowners are inclined to purchase ‘Single Residential’ erven in the former White suburbs of Bloemfontein rather than units in sectional title developments.

Conclusion

The analysis of the 2012 Property Data Roll of the Mangaung Metropolitan Municipality has indicated a 15.3% desegregation level in residential property ownership in Bloemfontein. If we compare this to the 11.4% desegregation level in 2007 (Rex and Visser, 2009), it is clear that even though the world economy has slowed down since late 2007 (with a concomitant impact on the South African economy), significant desegregation has taken place in Bloemfontein over the past five years (an increase of almost 35%), particularly as Christopher (2005) has calculated a Dissimilarity Index value of 96 from the 2001 Census data. Even more significant is the fact that the current study did not investigate rental housing and it could be argued that the desegregation value of 15.3% obtained is a conservatively low value.

The top five desegregated Bloemfontein suburbs in 2007 remain for 2012. Furthermore, the top five desegregated suburbs in 2012 are situated closest to the townships of Mangaung and Heidedal. Additionally, six of the ten most desegregated suburbs are situated within the southern and south-western portions of Bloemfontein. This clearly indicates that the same spatial desegregation trends, highlighted by Rex and Visser (2009) and first suggested by Kotze and Donaldson (1998, 475) have continued since 2007 and will probably continue in future.

The suburbs with the highest percentage levels of Sectional Title Schemes within them (cf. Table 8 and Figure 3) are also among the suburbs with the lowest levels of desegregation. Table 1 indicates that mobile Black property owners are more likely to purchase more affordable ‘Single Residential’ erven, than units in Sectional Title schemes. A further telling statistic enhancing this observation is that in 2012 only 8.7% of all available Sectional Title Units (1492/17008) are Black-owned, compared to 7.2% (1022/14144) in 2007. On the whole, existing trends in the desegregation

discourse of urban South Africa are corroborated in this investigation. However, some new avenues for future investigation also come to the fore.

An observation that can be highlighted is that some suburbs are demonstrating trends towards re-segregation from nigh totally White to Black.

Desegregation trends are relatively low in wealthier suburbs and at levels that do not come anywhere close to reflecting the provincial racial demographic which is overwhelmingly Black.

Desegregation has taken place mainly at the lower end of the residential property market or near the top. Sectional title ownership has not desegregated to any large extent.

In this respect, it would also be insightful to come to an understanding of why prospective Black property owners do not invest in these types of residential developments when in cities such as Bloemfontein they tend to be ideal investment vehicles for those aiming to get a foothold in the property market.

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Non-metropolitan gated developments in the Western Cape, South Africa: from large city to small town

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Abstract: Gated developments have become a feature of urban living throughout the world and have been the subject of intensive research. They are a ubiquitous feature of the post-apartheid urban landscape with many new developments in the form of secure estates or fortified townhouse complexes. Gated developments are not only present in metropolitan locales, but have been increasing its presence in non-metropolitan locales. This paper traces the spatio-temporal diffusion of gated developments and maps the extent of their proliferation in non-metropolitan Western Cape, South Africa. In addition, as safety and security is a dominant theme in gated development research, the varying levels of security in 399 gated developments are investigated with a view to establish degrees of gatedness in the study area. Two towns are case-studied in order to explore the reasons for the establishment of gated developments. It is found that location-specific needs and the processes of municipalities, rather than safety and security, have a bearing on the proliferation of non-metropolitan gated developments. Nevertheless, the potential exists for non-metropolitan settlements to become part of a fortified future.

Introduction

Increased urbanisation in the South African settlement landscape has not been confined to the metropolitan areas as smaller settlements have grown apace. In the Karoo a general increase in the absolute population growth of small towns, with a racially-differentiated migration to and from small towns, has been observed (Nel *et al.*, 2011). Much of this migration is farm dwellers moving to small towns with resulting pressure on the need for municipal services (Nel *et al.*, 2011). This in-migration, from various sources, into non-metropolitan¹ settlements in the Western Cape has produced an average population growth rate of 24% between 2001 and 2007 for these settlements (Spocter, 2013). In addition, there is an outmigration, from urban areas to rural areas – the process of counter urbanisation (Ingle, 2010). Counter urbanisation is facilitated by the interconnectedness of global communication systems and the penetration of the global village into rural locales (McCarthy, 2008). Managers and inhabitants of rural places have recognised that there are urbanites who wish to escape the city to enjoy a more relaxed rural atmosphere (O'Reilly, 2007). Consumptive urban lifestyles brought by in-migrating urbanites are transforming rural landscapes into sites of consumption, driven by tourism and leisure activities (Hoogendoorn, Visser and Marais, 2008).

The contemporary South African urban and rural spatial form has moved away from a legally enforced race-based segregation to one displaying elements of class-based segregation driven by forces of neoliberalism and globalisation (Donaldson, 2009). City landscapes are changing. Gated developments are mushrooming in cities around the world and they are altering the way cities are administratively, socially, politically and economically organised. Residential gated developments have become a ubiquitous feature of the contemporary South African urban landscape. Driven by various actors in the private and public domains, these gated developments have expanded their spatial manifestation beyond the borders of South Africa's

metropolitan areas. Forces of commodification and consumption have resulted in the transplantation of the essentially metropolitan phenomenon of residential gated developments, onto the non-metropolitan landscape of the Western Cape. This paper investigates residential gated developments in the non-metropolitan Western Cape. Attention is focused on diverse theoretical contexts. The research locates, identifies and analyses these developments in the study area; analyses their security aspects; and investigates aspects that are unique to specific towns.

Definitional, theoretical and spatio-temporal aspects

The definition of gated developments in the context of this paper, the theoretical underpinnings of the research and the location of non-metropolitan gated developments in the study area requires attention. In South Africa, Landman (2003) focussed on the morphological characteristics of gated developments to derive two broad types and six subtypes. Further subtyping is possible, but this runs the risk of the typology becoming too large and unwieldy. The dashed box on Figure 1 indicates the typological focus of this paper, namely, security estates and townhouse complexes.

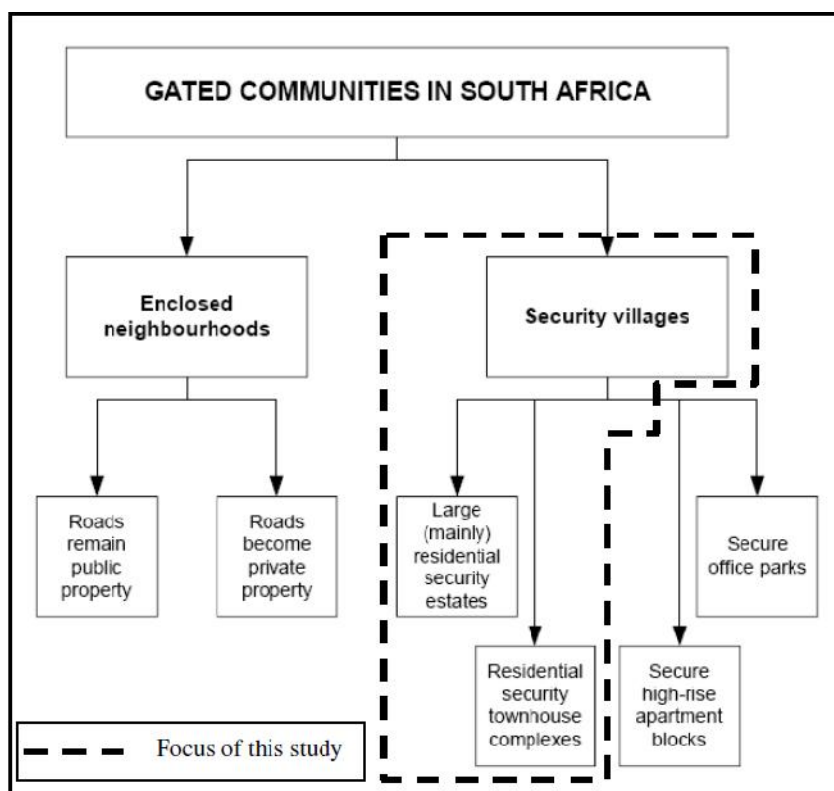


Figure 1: Typology of gated developments in South Africa (Source: Adapted from Landman, 2003).

Given the conundrum concerning what constitutes a rural place in South Africa, and considering the focus of this research on gated developments outside the city, a clear distinction is required for delineating the study area. Although the Municipal Structures Act (Act 117 of 1998) does not define urban and rural, it does contain a politico-administrative definition based on a particular tier of government. The Constitution (Act 108 of 1996) does make provision for the establishment of metropolitan areas in South Africa. This process is facilitated by the Municipal Demarcation Act (Act 28 of 1998) which gives criteria and procedures for the

determination of municipal boundaries by an independent authority, namely the Municipal Demarcation Board. Eight metropolitan municipalities have been determined by the Municipal Demarcation Board, of which only the City of Cape Town is located in the Western Cape. The rest of the Western Cape is governed by district and local municipalities which are called non-metropolitan municipalities. Hence, rather than employing the term rural to describe the area of investigation, the politico-administrative term of non-metropolitan is preferred for this study. This politico-administrative term labelling includes all the towns in the Western Cape irrespective of population size and density, level of urban function and level of main economic sector. However, there are differences between the various district and local municipalities regarding population size, population density, main economic sectors and geophysical factors.

The theoretical positioning of gated developments has evolved over a number of years and in a number of locales throughout the world. It is fundamentally important to place this research in the ambit of a particular theoretical position by drawing on global experiences of gated developments. This research is unusual in that it draws on elements of urban residential gated developments in order to position it, or at least position elements of it, in the non-metropolitan settlement arena. This transplantation and engagement with urban theory is beneficial to theorising about non-metropolitan locales (Woods, 2007).

Smith-Bowers and Manzi (2006) have reviewed a number of discourses on the rise of gated developments and they conclude that there are limited theoretical perspectives on the phenomenon and that the theoretical positioning of gated developments requires a more complex analysis. They maintain that gated developments should be positioned within the broader theoretical perspective of securitisation. However, in reviewing the various theoretical arguments for the emergence of gated developments, they do not pigeonhole the views of particular authors' specific perspectives because a particular author may have two or more viewpoints on the emergence of gated developments. For example, the work of Low (2003) can be placed in the theoretical understanding of the culture of fear, the realm of the impacts of globalisation and in the ambit of social exclusion. Similarly, Marcuse and Van Kempen (2000) position their work in the growth of global cities theory and in the domain of undemocratic urban governance. The challenges faced by Smith-Bowers and Manzi (2006) to analyse the theoretical underpinnings of the emergence of gated developments illustrates the difficulties of positioning the gated development phenomenon within broader theoretical debates. Nevertheless, it provides a starting point from which to analyse these debates with a view to positioning this research on a broader theoretical base because all the debates on gated developments concentrate on the urban metropolitan context whereas the focus of this research is the non-metropolitan locale. The theoretical stances investigated by Smith-Bowers and Manzi (2006), namely gated developments as symbols of a fortress mentality; gated developments as isolationist; as an outcome of a new world order; as a manifestation stemming from the fear of crime and violence; and gated developments as club goods.

No longer is the suburban dream the only point of call for the middle class, but the latter have expanded their preferences and reach to small towns that are mostly close to metropolitan areas. As such, the non-metropolitan sphere has transformed from being exclusively areas of production for the consumptive metropolitan areas.

New activities and consumptive practices are occurring in non-metropolitan areas, largely to cater for the new in-migrants. This represents a shift from conventional non-metropolitan spatial practices. To explain this non-metropolitan consumptive shift and production focus, agricultural and rural geographers, *inter alia*, have recognised that the theoretical underpinnings are moving from a productivist non-metropolitan landscape to a post-productivist non-metropolitan landscape. Post-productivist theory has been applied in examinations of second-home ownership in South Africa (Hoogendoorn, Visser and Marais, 2008).

Some studies have endeavoured to position gated developments within the theoretical realm of commodification. Post-productivism is linked to commodification in that asset commodification of the non-metropolitan sphere and the declining importance of primary resource-based activities are essential to post-productive theory. Raposo (2006) established a framework for the social reproduction of gated developments in Lisbon, Portugal. She viewed commodification as being more omnipresent than capitalism as it has the capacity to redefine reality to create new areas of commodification.

An understanding of non-metropolitan gated development distribution is a good basis for the investigation of the developments' presence in specific towns. The survey yielded 449 non-metropolitan gated developments in the province (Figure 2). The location of gated developments is important in that it relates to other features in the ruralscape such as proximity to the coast, medical facilities, natural resources, recreation areas, the metropolitan area and national roads.

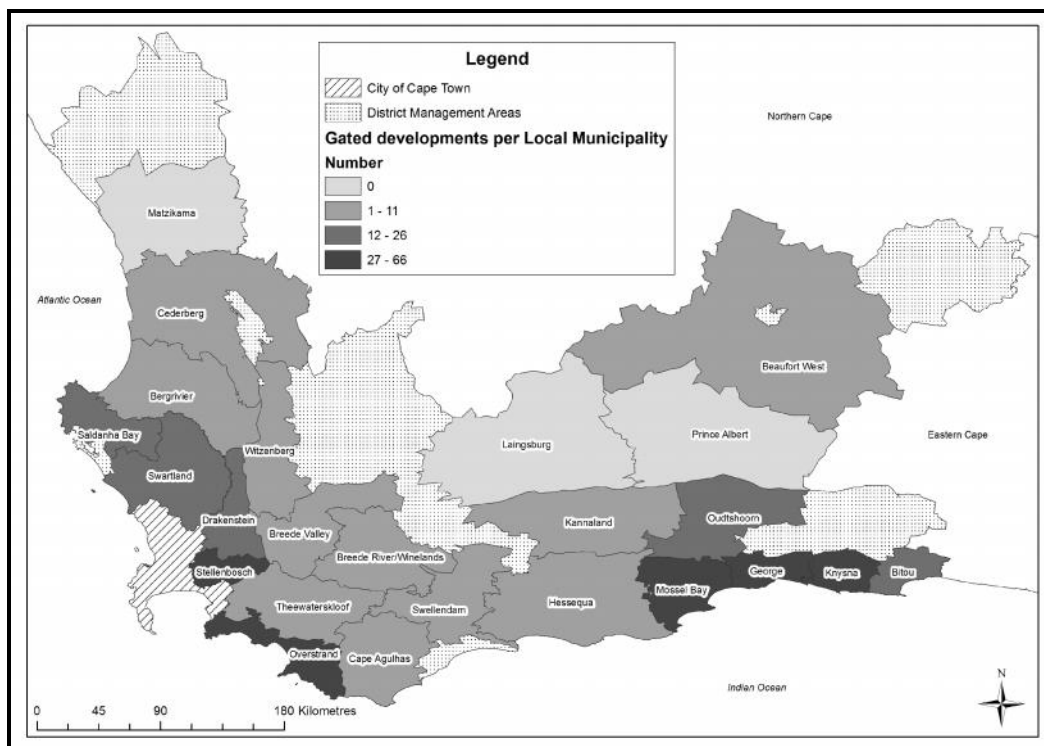


Figure 2: Distribution of gated developments by local municipality in the Western Cape.

A graphical timeline allows one to visualise when peaks and troughs of non-metropolitan security estate development occurred in the province. Figure 3 indicates when 197 security estates were authorised over a 24-year period and shows that a

surge in the authorisations of security estates started in 1995 followed by an erratic pattern of increases and decreases until a maximum in 2006 after which a dramatic fall in numbers occurred.

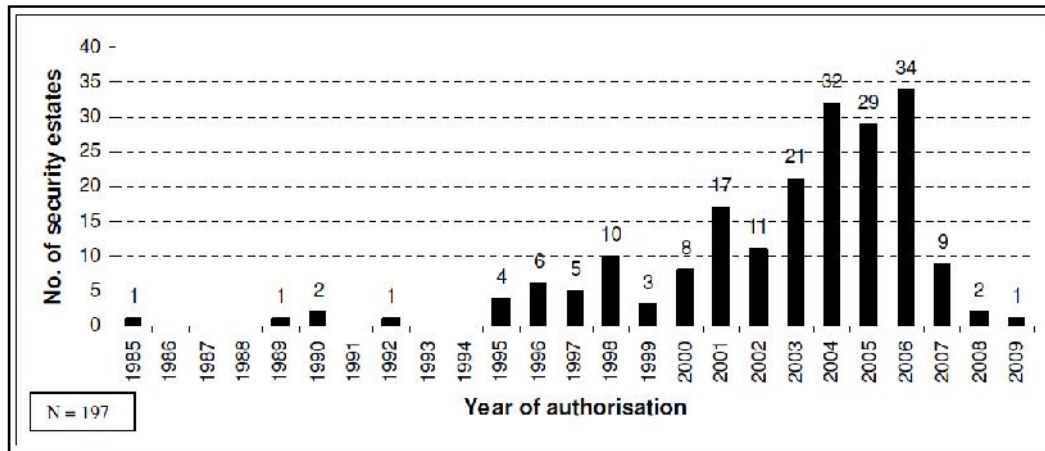


Figure 3: Timeline of security estate authorisations in non-metropolitan Western Cape, 1985 to 2009 (Source: Spocter, 2013).

The most discernible authorisation period was 2003 to 2006 followed by an almost fourfold decline in 2007 and again in 2008. Approximately 96% of security estates were authorised during the 13-year period 1995 to 2007. The six years from 2001 to 2006 witnessed about three quarters of planning authorisations of security estates in non-metropolitan Western Cape.

Levels of security

Gated developments in South Africa are synonymous with security because the state of feeling or being free from danger or threat is a primary reason for their proliferation (Landman, 2003). Gated development imply that a gate and other security features and arrangements are present. Brunn, Andersson and Dahlman (2000) call the various security features of gated developments the elements of security used to express landscapes of defence. The survey recorded that each of the gated developments had two or more of the following security features: gates, booms, walls, fences, razor wire, intercoms, access cards, cameras, guards, and guardhouses (Table 1).

Various permutations of these security features were observed. Gated developments in different parts of the study area show predilections for particular arrays of security features and the presence or absence of these features differed between local municipalities, towns and type of gated development. There is no standard assemblage of security features that must be present in gated developments. The diverse arrays of security features add to the challenge of arriving at an all-encompassing definition of gated developments. Some gated developments captured in the survey did not even have a gate!

A picture of the securedness of security estates provides a spatial indication of levels of security in various locales in the study area (Figure 4). The Bitou and Witzenberg LMs have the highest index values of 60 for their security estates, though Witzenberg LM has only one security estate, and Bitou LM has 15. The economic bases of the two municipalities are also different in that the Witzenberg LM is dominated by agriculture and agroprocessing (Witzenberg Local Municipality, 2010)

while Bitou LM has tourism and construction as its main economic bases (Bitou Local Municipality, 2009). One could intuitively link security estates with tourism and recreation because a tourism economic base can be identified with the leisure and amenity-driven nature of security estates. The link between security estates and agriculture and agribusiness is not very clear so that Ceres is case studied later to investigate this possible link.

Table 1: Security features of non-metropolitan gated developments in the Western Cape

ALL LOCAL MUNICIPALITIES												
Type		Gate	Wall	Inter-com	Fence	Guard-house	Electric fencing	Guard	Boom	Camera	Access card	Razor wire
se 193	N	159	99	76	98	104	49	83	62	34	5	2
	%	82	51	39	51	54	25	43	32	18	3	1
tc 206	N	203	150	132	58	31	63	22	10	5	3	2
	%	98	73	64	28	15	31	11	5	2	1	1
Total 399	N	362	249	208	156	135	112	105	72	39	8	4
	%	90	62	52	39	34	28	26	18	10	2	1

Source: Spocter (2013)

A second set of local municipalities have index values between 41 and 54 for their security estates (Figure 4). Part of this group are the Overstrand, Stellenbosch, Drakenstein and Swartland LMs which are all contiguous with the metropolitan City of Cape Town. Analysis on 2008/09 crime statistics has shown that the Stellenbosch and Drakenstein LMs have lower crime occurrences than the Overstrand and Swartland LMs (Van Niekerk *et al.*, 2010). It is thus unclear if perceptions and fear of crime are influenced by proximity to the city. The George and Mossel Bay LMs with their populous towns, as well as the recreation and amenity-driven Saldanha Bay LM are also in this group.

Swellendam LM has a security index value of 47 for its six security estates which are all located in Swellendam, higher than the provincial average. Yet the local municipality has a smaller population than the other local municipalities in this group and it has an approximately six-kilometre coastline (along which there are no gated developments). This begs the question why there is this concentration of gated developments with a relatively high security index in a town which has a relatively small population, is not amenity and leisure driven, and is situated 60 km from the coast. A closer investigation of Swellendam as a case study should produce answers to this conundrum.

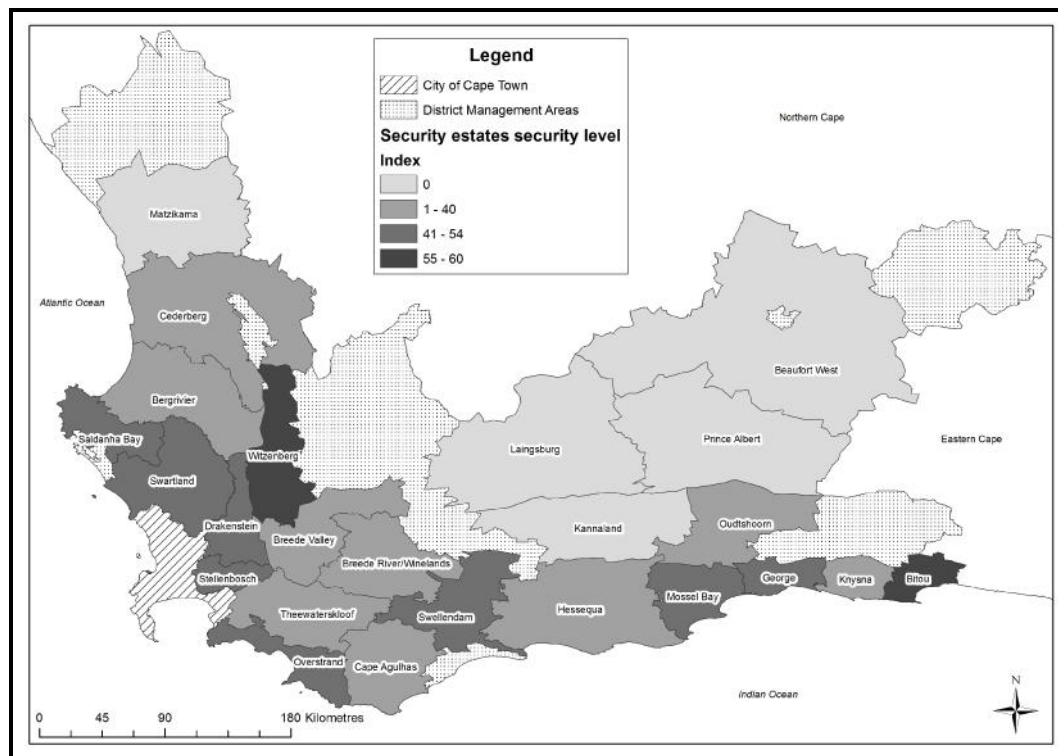


Figure 4: Security levels of non-metropolitan security estates by local municipality in the Western Cape

Case study towns

Ceres

Ceres had a population of approximately 33 224 in 2011 and is situated at the foot of the Skurweberg Mountains along the Dwars River in the Witzenberg LM. The importance of agriculture in the Ceres district is witnessed by the dominance of the agriculture, forestry and fishing sector's contribution to the economy of the Witzenberg LM. The sector consistently contributed more than 30% of the Gross Value Add of the Witzenberg LM in the period 1995 to 2009. The Witzenberg LM is one of only two local municipalities in the Western Cape where agriculture has improved or maintained its importance in the economy between 1995 and 2009 (Spocter, 2013).

Although agriculture is the mainstay of the economy, most of the employment opportunities occur during the harvesting season (Ally-Schmidt, 2005). Out-of-season employment for women is mainly domestic work. Ceres is characterised as a site of chronic poverty with employment being scarce and low-paid with significant shifting labour trends (Ally-Schmidt, 2005). Du Toit and Ally (2003) noted that 35% of the temporary labour in the Ceres district was sourced from the Eastern Cape. Ownership of the Ceres economy is in the hands of a small number of landed elite who are bound by kinship ties, economic alliances and political affiliation (Coetzee, 2006). Areas of poverty in suburbs on the outskirts of the town can be juxtaposed with the areas of economic certainty closer to the centre of the town. The gated developments of Ceres are located in the latter space.

Half of the respondents felt that the crime level in Ceres is high, while less than one quarter was of the opinion that it is low. Sixty per cent of female respondents

indicated that crime levels were high in Ceres, compared to 44% of males. The fear of crime in Ceres appears to have a gender dimension. Although the gendered fear of crime is a multi-component concept, it is a consistent aspect in who is fearful of crime (Whitzman, 2007). Respondents affirmed that the level of crime in Ceres had worsened over the years. Housebreaking and theft were mentioned as the most common form of criminal activity the residents of Ceres were exposed to. Taljaard (2011, pers com) believes that housebreaking and theft are not problems in Ceres, but acknowledges that crimes were committed due to alcohol abuse. This point to domestic abuses and social problems in the suburbs surrounding the Central Business District (CBD), with the CBD experiencing minimal crime. Even though half of the respondents felt that the town's crime rate was high, respondents felt safe in Ceres.

Housing in Ceres is expensive, especially for younger buyers so that they are forced to seek rental accommodation or move away from the town to find affordable accommodation elsewhere – similar to the experiences of young home seekers in rural England (Lowe and Ward, 2009). Thus the rental market is extremely popular in Ceres, resulting in a severe shortage of rental housing stock (Kotze and Smit 2011, pers com) and long waiting lists for rental accommodation in the town (Taljaard 2011, pers com). The gated developments that cater for the rental market in Ceres are there in response to the demand for housing in the town. It is not lifestyle-driven: “Ceres is 'n mooi dorp maar ons het nie coffee shops hier nie ... hier is dit landbou”¹ (Taljaard 2011, pers com). The security components of gated developments in Ceres are used as a marketing tool as this strategy fits well into peoples' perceptions that it is more secure to reside in a gated development. However, there is such an acute shortage of rental housing in Ceres that even if developments were not gated they would be snapped up by prospective renters.

Swellendam

Swellendam had a population of approximately 18 971 in 2011 and is situated at the foot of the Langeberg Mountains along the Koorndals River in the Swellendam LM. Swellendam is the third-oldest settlement in South Africa after Cape Town and Stellenbosch. Consequently, there are a considerable number of architectural heritage sites in the town, with more than 50 dwellings being declared national monuments (Pam Golding Properties, 2009). Although the relative importance of the agricultural sector has declined, the historical and cultural importance of the town has assisted in growing the tourism industry and minimised the adverse effects of the declining agricultural sector (De Lange 2011, pers com). The growing wholesale and retail trade, catering and accommodation sector includes revenue from tourism with Swellendam as the core.

The Integrated Development Plan of Swellendam LM records that there are opportunities for the subdivision of land in the town, with a view to increased densification and spatial integration (Swellendam Municipality, 2010) and that the individual plots within gated developments are a means of achieving increased density through subdivision (Hattingh 2011, pers com). A similar process of increasing densities through the construction of gated developments in spaces in an older town core has been documented in Tijuana, Mexico (Gallegos, 2009). The

¹ Ceres is a beautiful town, but we do not have coffee shops here ... agriculture is here.

Swellendam Spatial Development Framework (SDF) formulated that the town advocate densification as a means to promote social integration, mixed land use, and contain urban sprawl (Swellendam Municipality, 2008) based on the densification and urban integration objectives contained in the provincial SDF (Western Cape Provincial Government, 2005). Gated developments in Swellendam are used to densify and contain the growth of the town (Hattingh 2011, pers com).

Seventy-nine per cent of the respondents said that Swellendam experiences low levels of crime and 84% feel safe in the town. Almost all (99%) of the respondents feel safe inside their gated developments. Respondents mentioned that they feel at ease when walking in the streets of the town, even at night, and that they are able to identify strangers in the developments. Crime in Swellendam was described as petty crime with no crime syndicates present or organised crime activities taking place. Ninety per cent of the population in Swellendam is Afrikaans-speaking (Swellendam Municipality, 2010) and they have a similar value system so that townsfolk get along well with one another and this contributes to the peacefulness in the town (Steyn and Meyer 2011, pers com). Respondents describe Swellendam as a peaceful town. However, violent crime does occur (Steyn, 2010). A developer in Swellendam confirmed that security features are used as a marketing tool as well as assuring peace of mind to prospective buyers regarding the security aspect of the development, but security features can create the impression that crime is a problem in the town (Erasmus 2011, pers com). It has been suggested that it is not the gated developments that have attracted the buyers per se, rather that the affordable lock-up-and-go dwellings in Swellendam are only available in gated developments (Whittle 2011, pers com). The main reason for people buying into gated developments is not for security purposes, but because there are no other small-sized houses available in the town (Whittle 2011, pers com). According to the respondents gated developments in Swellendam are not necessarily responses to a security or crime problem, rather to the need to have peace of mind regarding safety, with developers using security as a marketing tool.

Conclusion

Gated developments in South Africa have spread from larger urban areas into smaller towns as illustrated in this paper, using the Western Cape Province as study area. The types of gated developments that were focussed upon are security estates and townhouse complexes in the study area. Gated developments have been theorised under a number of theoretical viewpoints with the issue of the fear of crime and violence most widely accepted as the theoretical underpinning for gated developments. However, non-metropolitan gated developments, through their very location, calls for an examination of rural change theories such as post-productivism and commodification as an alternative theoretical context.

The distribution of gated developments in the Western Cape relates strongly to features such as proximity to the coast, natural resources, recreation areas, national roads, the metropolitan area and medical facilities. Thus, most gated developments are found in amenity-use areas close to the City of Cape Town or along the Garden Route (a tourist area). An examination into the granting of planning authorisation for the construction of security estates indicates rapid growth in the numbers of gated developments from 2001 to 2006, where after the global economic slump impact negatively on new developments. Nevertheless, the surveyed developments reveal various levels of security – being that security is such an integral part of different

phases and facets of gated developments and gated living. The diverse array of security features exposed security estates in certain areas as more secure than those in other areas.

Ceres and Swellendam were case studied to establish if gated development residents feel safe in their towns and within their developments. In both instances it was found that respondents felt safe in the towns and that safety and security was peripheral to the reasons for the development of gated developments there. The lack of alternative rental accommodation and the lack of alternative affordable housing options, coupled with the planning aims and objectives of municipal planners were the foremost reasons for the proliferation of gated developments in Ceres and Swellendam. Nevertheless, safety and security was used as an important marketing tool by the developers of these developments. The case studies suggest that every municipality, with guidance from the provincial planning authority, require a gated development policy (informed by local conditions) to direct such developments in a meaningful way. The alternative would be fortified non-metropolitan towns and spaces emulating the fortification practices employed in the larger urban centres in South Africa.

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Moving house every weekend? The nature of second home development in Dullstroom (Mpumalanga, South Africa)

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Abstract: The worldwide growth in international mobility and associated leisure migration resulting from an increasingly globalised world are arguable major reasons for the rapid development and emergence of second homes worldwide. This trend is particularly prevalent in South Africa. Although second home development (SHD) is not a recent phenomenon in South Africa there has been a general lack of South African research on this topic (Visser, 2006). With a vast amount of research having been done on international studies of SHD, there is a need for South African research on the nature of SHD and the impact this phenomenon has on affected local communities (Hoogendoorn and Visser, 2004). This statement is corroborated by Rogerson and Visser (2007) which state that SHD is raising a lot of attention in relation to the advantages and disadvantages for local communities. Recent investigations on SHD in South Africa have realised a number of concerns and benefits associated with the growth of SHD in various regions in South Africa. One such growth node for SHD is Dullstroom in the Mpumalanga Province. This study focuses on the nature of SHD and the associated economic contributions to the local economy in Dullstroom.

Introduction

Today the world is becoming more integrated due to globalization resulting in the “death of distance” as a result second home development is an emerging new trend of the global village (McIntyre *et al.*, 2006). Second home development (SHD) is a growing trend internationally and locally emanating from consumption led migration. It has been noted that with an increase in mobility in the industrialized world, leisure migration has increased nationally and internationally (Williams and Hall, 2003). Tourism and mobility are an integrated part of SHD which is a growing phenomenon internationally, South Africa has not been exception from this trend. This study investigates one such growth node in South Africa, Dullstroom.

Literature review

Visser (2006) indicated that second homes are an important part of the tourism industry together with an increase in mobility this movement of leisure property has grown globally. Before exploring SHD within South Africa it is important to define second homes in order to understand the relationship of migration and tourism. Various academics have introduced a number of definitions for second homes, for the purposes of this research the following definition of Hall and Muller (2004, p. 5) is accepted, “a second home is a property rented or owned for the purpose of occasional use mainly for recreational purposes.” Second homes in different locations are interlinked with tourism and leisure. Tuulentie (2007, p. 282), states that “tourism introduces future locals to a place, and thus serves as a starting point for a closer relationship with the place.” This indicates that tourist experiences can lead to future commitment at the destination through acquiring leisure property at that place. There are a number of motives for purchasing a second home, to some it is to have

a low cost holiday, to others it is to escape from the city to exclusive experiences, to others second homes represent a status symbol and for others it is for retirement purposes (Hall and Muller, 2004). It has been argued that SHD is a result of the growth in global mobility which is associated with international leisure migration leading to second homes (Hoogendoorn and Visser, 2004).

Consumption-led migration and production-led migration has been increasing in South Africa which has resulted in a number of impacts from this movement. Second home use is part of tourism and the economic significance with regard to SHD is important to acknowledge. Development of site consumption has grown in South Africa; this resulted in a rise in the development of goods and services as well as labour and entrepreneurial migration. Production-led migration does not necessarily offer permanent or good employment opportunities as low-skilled work is usually required and seasonality is often a negative factor (McIntyre *et al.*, 2006). Hoogendoorn *et al.*, (2009), state that "second home development as a consumptive phenomenon, and particularly the expansion of second home development in comparison to its past development, can be attributed to the development of the post-productive countryside."

This growth in SHD is raising a lot of attention to the advantages and disadvantages on host communities (Rogerson and Visser, 2007). Tourism, migration and mobility are interlinked and forms of leisure property involve diverse forms of mobility (Tuulentie, 2007). Visser (2006) points out that SHD in South Africa is not a new phenomenon even though there is a lack of research on this topic. With a vast amount of research done on international studies of SHD, there is a general lack of research on second home development within a South African context (Hoogendoorn and Visser, 2004). A number of recent studies (Visser 2003; 2006; 2009; Hoogendoorn and Visser, 2004; 2010; Rogerson and Visser, 2007; Hoogendoorn *et al.*, 2009, Baker and Mearns, 2012) on SHD have however raised a number of concerns and benefits associated with the growth of second home. This investigation adds to this debate by investigating SHD in Dullstroom, a small town in the Mpumalanga Province of South Africa.

The phenomenon of second homes can be traced back to ancient societies where it was considered an exceptional asset to have a house located in the countryside (Coppock, 1977). Since the 18th century this phenomenon grew as new modes of transport developed. These different forms of mobility had a major influence on the desired geographic location of second homes (Hall and Muller, 2004). In South Africa, SHD can be traced back to investments in small holiday and weekend houses in small towns along the coastline. The development of second homes originated along the Western Cape coastline and later the KwaZulu-Natal coastline. The investment in second homes predominantly came from the Johannesburg area (Visser, 2006).

A major increase in SHD originated from the 1950's -1970's during South Africa's economic boom, which resulted in increases in disposable income and leisure time (Visser, 2003). A trend that followed this economic boom was the investment in second homes for holiday and leisure purposes along the coast. The development of second homes was not only amongst the elite but also amongst middle classes in the form of flats and timeshare units (Visser, 2006). About a decade ago a new trend emerged which included a higher demand for second homes located in close proximity to the main urban areas (such as Cape Town and the Gauteng Province)

for weekend leisure (Visser, 2006). This trend has resulted in a high demand for weekend getaways to places that are more exclusive with opportunities for investment and retirement. Not far from these main metropolitan regions are beautiful natural landscapes, one such destination emerging as a node for second home development is Dullstroom.

Table 1: Demographic profile of respondents

Gender	Responses (%)
Male	48.4%
Female	51.6%
Age Group	
36-45	38.7%
46-55	45.1%
56-65	9.7%
66 +	6.5%
Marital Status	
Married	90.3%
Divorced	9.7%
Race *(31)	
White	100.0%
Home Language	
Afrikaans	54.8%
English	45.2%
Academic Qualification	
Grade 12/Matric	25.8%
Diploma	19.4%
Bachelor's Degree	29.0%
Master's Degree	25.8%
Doctoral Degree	3.2%
Household Annual Income	
Under R500 000	23.3%
R500 001-R1million	20.0%
R1million&1-R1.5million	50.0%
R1.5million&1-R2million	6.7%
Over R2million	0.0%

Dullstroom is a rural town in the Mpumalanga Province that is approximately 250km away from Gauteng. Cunningham (2012) states that “Over the past decade investor interest led to a property boom in Dullstroom- especially in the leisure estate market”. Cunningham (2012) indicated that the boom brought economic sustainability to the area and with Dullstroom being along the route from Gauteng to the Kruger National Park it has become a tourist route that is a close two and a half hour drive from Gauteng. Dullstroom is known for its unique trout fishing and attracts visitors who are interested in fishing, relaxing, hiking, horse-riding and visiting Dullstrooms’ quaint shops and restaurants (De Jager, 2010). Cunningham (2012) also states that “Dullstroom is an authentic country village perfect for escaping the concrete jungle.” Dullstroom has a variety of homes for second home owners to choose from, there are farms and country houses, residential houses, country estates and vacant land to build on. The estate development in Dullstroom has progressed over the years however most of these estates are situated outside the town in order to preserve the peaceful atmosphere of the country village (Cunningham, 2012). Countryside towns near the main Metropolitan areas have capitalized on this increased economic activity by offering ‘getaways’ in close proximity to these cities. Dullstroom has been able to capitalize on its rural village atmosphere and unspoilt natural setting in close proximity to the Johannesburg metropolitan area.

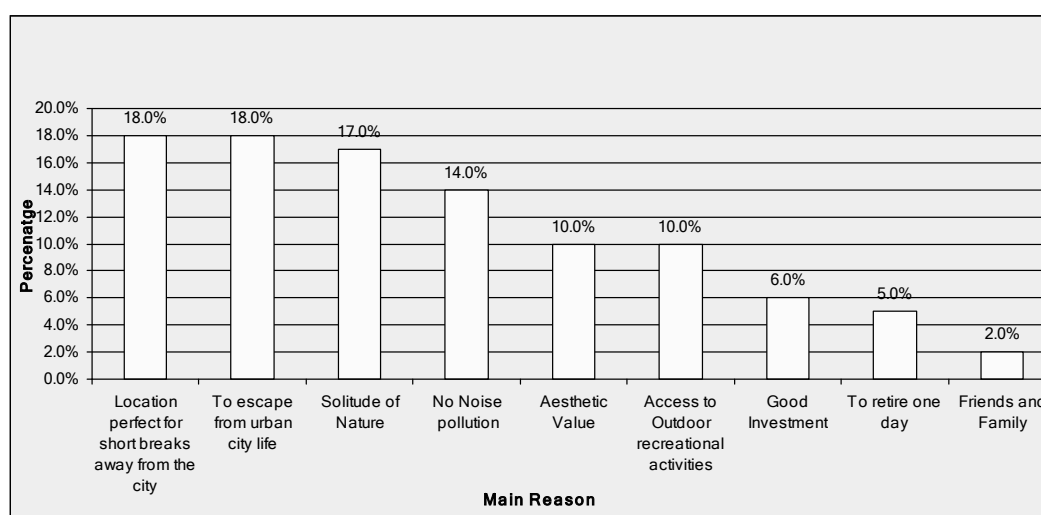


Figure 1: Reason for buying a second home in Dullstroom

Research design and methodology

This study was an empirical investigation making use of both primary and secondary data. Primary data was collected through interviews and questionnaires, while secondary data was obtained through existing sources. The questionnaire addressed issues relating to the demographic profile of owners, motivation for purchasing a second home, spatial and economic distribution and residential characteristics of second home owners in Dullstroom. Second home owners were contacted using snowball sampling via email through estate agents from Dullstroom. A total of 31 completed questionnaires were received.

Demographic profile of respondents

The respondents were fairly equally distributed in terms of gender with 51.6% being female and 48.4% male. Overall 45.1% of the respondents were between the age of 46-55 years and 90.3% were married. A significant demographic finding was that all

of the respondents were white South Africans whose home language is Afrikaans (54.8%) and English (45.2%). The majority of the respondents had some form of tertiary education (74.2%). Fifty percent of the respondents had an average income between R1million-R1.5 million which indicates that the owners of second homes had high levels of income which enabled them to absorb the expenses associated with owning a second home.

Results and Findings

Motivations for purchasing a second home in Dullstroom

The main reasons respondents purchased a second home in Dullstroom are illustrated in Figure 1.

Eighteen percent of respondents indicated the main reason for buying a second home in Dullstroom was the location which was seen as perfect for short breaks away from the city. 17% of the respondents indicated that the solitude of nature and the rural setting of the destination was a main reason for purchasing a second home in Dullstroom. No noise pollution played a big role, as 14% indicated that this was important. Outdoor recreational activities and aesthetic value were selected by 10% of the respondents as reasons for purchasing a second home in Dullstroom. Only 6% of the respondents purchased a second home for investment opportunities, while 5% bought a second home in Dullstroom with the intention to retire there one day. From these results it is evident that the location of Dullstroom and the natural environment are the greatest motivating factors for purchasing a second home in Dullstroom. Compared to the study done on Clarens by Hoogendoorn and Visser (2004), where the main motivating reason was retirement

Spatial distribution of second home owners in Dullstroom

It was noted earlier that about a decade ago was an increase in second home owners seeking properties at destinations that are located relatively close to their primary residence. The empirical evidence collected supports this trend. The results in Table 2 illustrate the spatial distribution of the second home owners.

The table shows that 80.6% of all the respondents investing in Dullstroom are from the Gauteng Province. Similar to other popular destinations for SHD like Clarens and Hartbeespoort Dam, Dullstroom is also located in an area that is easy to commute to from Gauteng on a regular basis over weekends and holidays. As illustrated in Table 2, 19.4% of second home owners in Dullstroom come from other provinces within South Africa, such as Mpumalanga, Western Cape and Limpopo; no respondents were from outside South Africa. This indicates that Dullstroom attracted only local South Africans second home owners as a result of its convenient location; being a rural natural environment close to metropolitan source areas where second home owners can travel to on a regular basis, 87.1% of the respondents live within 100-300km away from Dullstroom. "The geographical distance between the second home and the permanent home is regarded as one of the most important factors in determining the second home location" (Muller and Marjavaara, 2007, p. 205). The results emanating from this investigation confirm the findings of Muller and Marjavaara (2007).

The purchase dates of second homes in Dullstroom vary among individuals. None of the respondents purchased their property in Dullstroom before 1985. Although the

majority of the properties purchased took place within the last decade, this being 61.4% of the respondents.

Table 2: The spatial distribution of second home owner respondents

Place of permanent residence	Responses (%)
Johannesburg	51.6%
Pretoria	29.0%
Mpumalanga	9.7%
Western Cape	6.5%
Limpopo	3.2%
Distance between permanent residence & second home in km	
<100km	3.2%
100-300 km	87.1%
301-600 km	3.2%
>601 km	6.5%
Date of Purchase	
<1986	3.6%
1986-1990	0%
1991-1995	10.7%
1996-2000	14.3%
2001-2005	21.4%
2006-2010	50%

Second home ownership and utilization patterns

Seventy one percent of the respondents were sole owners, while 29% had joint ownership. The most common type of joint ownership was with relatives (44.5%). A large portion (45.2%) of the respondents purchased their property between R500 000 and R1.5 million, 19.4% of the respondents purchased their property for under R500 000 the remaining 35.4% of respondents purchased their second homes for prices exceeding R1.5 million. Of the second home owners 41.9% of the respondents let out their second home while they're not occupying the home themselves. This indicates that 41.9% of the respondents' second homes are occupied throughout the year. These second homes are therefore are occupied throughout the year by other individuals who could also economically contribute to local economy.

Table 3: Residential characteristics of second home owner respondents

Sole Owner	Response (%)
Yes	71.0%
No	29.0%
Nature of joint ownership	
Business Associates	0.0%
Friends	22.2%
Relatives	44.5%
Other	33.3%
Purchase price of second home when bought	
Below R500 000	19.4%
R500 001-R1000000	22.6%
R1000001-R1500000	22.6%
R1500001-R2000000	16.1%
R2000001-R2500000	12.9%
R2500001-R3000000	3.2%
Over R3000000	3.2%
Do you hire out your second home	
Yes	41.9%
No	58.0%
To whom	
Tourists	84.6%
Tenants	7.7%
Other	7.7%

The utilization patterns of second homes provides an indication of how often the second home owners utilize their second home and could provide a useful insights into the economic benefits that are associated with the occupancy of their second homes. The first usage pattern indicates when second home owners make use of their second home. After gathering the data it was found that the majority of second home owners indicated that they stay at their second homes over weekends (Figure 2). The length of stay at second homes varied from 32.3% which on average stayed 1-2 nights when visiting their second homes, 51.6% of the respondents stay at their second home for 3-4 nights.

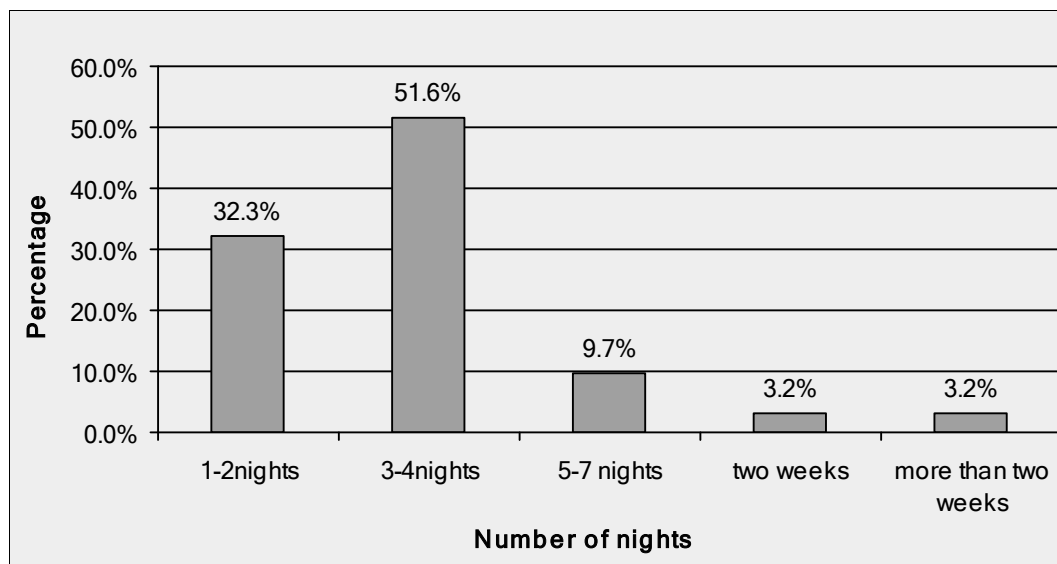


Figure 2: Average number of nights spent at second home per visit

After analyzing the length of stay it was also necessary to establish how often second home owners make use of their second home. Figure 3 illustrates the average number of times the respondents travel to their second home per year.

Twenty five percent of the respondents made use of their second home more than 12 times per year. The second highest use rating indicated that 23% of the respondents made use of their second home either 9-10 or 11-12 times per year. This indicates that the majority of second home owners utilize their second homes more than 9 times per year, this almost equates to once per month. These usage patterns suggest that the majority of the second home owners make use of their second home 9 or more times per year for between 1 and 4 nights. It may be concluded that second homes are used primarily as weekend getaways throughout the year rather than holiday homes for long periods of time.

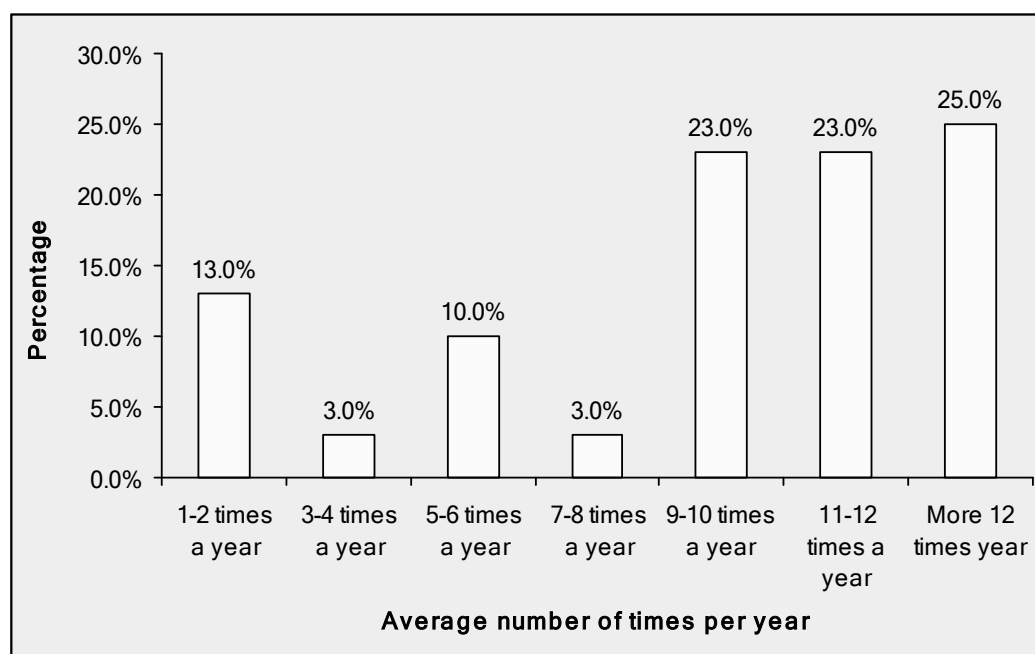


Figure 3: Average annual number of visits to second home in Dullstroom

Economic Impacts

Second home developments have the ability to contribute significantly to the local economy (Visser, 2004). From the usage patterns discussed above it may be noted that second home owners are travelling to Dullstroom on a regular basis and as a result have significant economic impacts on the local area. All tourism, including second home tourism, contributes to changes in the destination area and the tourist-generating area (Hall and Muller, 2004). In this section some of the economic impacts of SHD in Dullstroom will be alluded to.

Employment

Although second homes are invested in for leisure purposes there are a number of costs associated with maintaining a second property. Maintenance is a recurrent expense and as a result of the location of the second home being away from their primary residence, second home owners are dependent on hiring local community members to help maintain their second home (Visser, 2006). Respondents were requested to indicate whether they made use of local domestic workers and gardeners, their responses are indicated in Table 4.

Table 4: Local workers

Employees	Full Time	Part Time	Total % of respondents
Local Domestic worker/s	47.8%	52.2%	74.2%
Local Gardener/s	59.1%	40.9%	71.0%

The majority of respondents (74.2%) indicated that they employ local domestic workers and 71% indicated that they employ local gardeners. SHD as a result has a multiplier effect on local job creation within the Dullstroom region. SHD has led to an increase in small businesses to support the economic opportunities created by SHD, particularly construction, security and tourism services. Although SHD contributes to employment in the Dullstroom area, only a small number of employment opportunities are created many of which are part-time. It should also be noted that domestic workers and gardeners generally earn very low incomes. These factors lead to irregular incomes and often lead to underemployment due to low wages or even overexploitation (Hoogendoorn *et al.*, 2009). Even with the limitations discussed above, SHD makes a significant contribution to local employment.

Renovations to second home

Second homes in Dullstroom are used by the owners themselves as well as for tourist accommodation. These properties all require maintenance and renovations. Visser (2004) states that a major source of economic contributions to the Second Home town is through renovations. The results of this research support this, as 67.7% of the respondents renovated their property after purchase. Twenty-nine per cent of the respondents spent more than R300 000 on materials and 23.8% spent more than R300 000 on labour during renovations. The main portion (57%) of the respondents who did renovate their second homes spent less than R100 000 on materials and 52.3% spent less than R100 000 on labour (Figure 4).

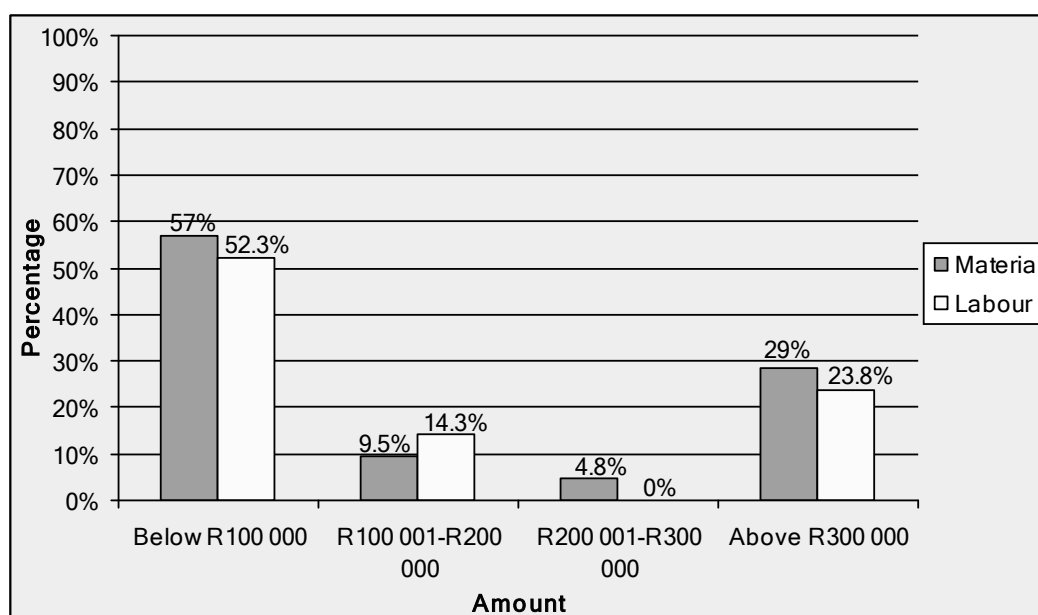


Figure 4: Average expenditure on labour and materials during renovations

The majority of the labour (90.5%) and material (76.2%) for the renovations were purchased locally (Table 5). This economic contribution supports the local businesses and contributions to employment opportunities.

Table 5: Percentage of materials and labour purchased locally

Source area	Labour	Materials
Purchased Locally	90.5%	76.2%
Purchased Elsewhere	9.5%	23.8%

Expenditure on local amenities and leisure activities

Another contribution to the local economy is through the consumption of goods and services. Hall and Muller (2004, p.17) state that “the distance between second home and primary residence also influences the expenditure patterns of the households of second home owners.” Of the respondents 87% of the purchased goods and services locally these include consumables, food and leisure activities.

It was found that 80.6% of the respondents indicated that they partake in leisure activities while staying at their second home. The majority of the respondents indicated that fly fishing was their main recreational activity, followed by bird watching and hiking. Other recreational activities mentioned were quad biking, horse riding, bicycle riding, and mountain biking. SHD increases direct visitor expenditure in the Dullstroom.

Local municipality income

A large contribution to the local economy from SHD is through necessary expenses in running a second home. These expenses include electricity, water, refuse removal, rates and taxes that are paid to the local municipality (Hoogendoorn *et al.*, 2009). The local municipality for Dullstroom is the Emakhazeni Local Municipality.

With there being no street lights and limited tar roads the municipality can use the funds collected from second home owners to address more urgent needs such as the restricted water supply within the Dullstroom region. SHD therefore have a positive impact on the income levels of the local municipality.

Conclusion

The majority of the respondents who own a second home in Dullstroom were white South Africans from relatively high income groups that are well educated and fall within the middle age group. Their main motivating reasons for purchasing a second home in Dullstroom was as a result of the location of Dullstroom being close by to their permanent place of residence, in this case predominantly Gauteng. The second home owners make use of their second homes on a regular basis generally over weekends on average once a month. SHD leads to economic contributions to the local community, through renovations, maintenance, employment, expenditure on local amenities, and contributions to the local municipality through the payment for services, rates and taxes. Recommendations to further enrich this study would be to do an analysis on the community's perceptions on SHD to determine how the property price increases and increases in rates and taxes have impacted local peoples' lives. Second home owners could also be requested to indicate the amount of money they spend on services in order to quantify the monetary income for the local municipality.

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Perspectives on social impacts of second homes in rural South Africa

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Abstract: The geographies of rural areas in both developed and developing contexts have undergone dramatic social change and restructuring because of a variety of underlying political, economic, environmental and social forces. Through rural economic restructuring and concomitant depopulation, many rural properties become available for potential second home owners. Second home development as an element of social, and general, rural change in the countryside can be associated with a transformation of the countryside into what is described as a more post-productivist state or consumption landscape. The countryside is currently increasingly known for its amenities and imagined rural lifestyle. Although second homes as a phenomenon have been researched in some detail in developed countries, considerably little scholarship has been presented on this phenomenon in the developing world where it can be used to understand social perspectives and resultant impacts of this phenomenon on rural communities. Against this background the aim of this investigation is to shed light on a specific set of issues that can take developing world scholarship on the social impacts of second home ownership further. It is argued that social perspectives and social impacts on rural communities in developing countries have not been investigated adequately within mainstream second home research and deserve attention to more fully understand and theorise them. To understand social perspectives on second home owners clearly, three issues are investigated. Firstly: why do people have second homes in rural areas? This question has preoccupied several researchers over the past twenty years. A number of explanatory motives have been put forward, most notably the desire to escape from routine, home life, and, ultimately, from modernity itself. Another reason why people have second homes in rural areas might be the 'visiting friends and relatives' factor (VFR tourism), which could perhaps be interpreted as another form of escape. It has been argued that there is an inseparable link between VFR tourism and second home tourism as a consumptive phenomenon. The paper *inter alia* focuses on the VFR factor amongst especially lower income groups. The second question the investigation addresses relates to the possible impacts second home owners have on host communities – and *vice versa*. It is suggested that dichotomies of outsider/insider and landscape/place could possibly be applied to rural communities in developing countries, not least rural South African second home destination regions. Place could be experienced as an aesthetically pleasant landscape by one individual or group and may be experienced by another as a place of home with a wholly distinct identity and set of meanings. The insider's place is rapidly being remade into something wholly unknown by outside forces, for instance: disparities in lifestyle, class and core values, as well as social inequities and community conflict - the whole character of small towns could change. Part of this research investigates the seasonal and weekend resident attachment to such a landscape, but also farm dwellers' migration during weekends to townships or "informal dwellings." This represents a different trend compared to the worldwide trends. The last question is: to what extent is the theory of post-productivism aligned to the study area? The post-productivist countryside is no longer seen primarily as a "food factory" but as a place for leisure and residence. In addition to leisure and residence, the possible role second homes play in rejuvenating the post-productivist countryside will be examined. It is argued that it is possible to measure the shift from productivism to post-productivism on the basis of six indicators. They argue that the concept of post-productivism needs to be adapted and developed to address conditions outside the developed world by embedding it possibly with theoretical discussions surrounding the Southern-based concept of 'deagrarianisation' and also emphasising that the theoretical notion of multifunctional agricultural regimes (a regime that conceptually, temporally and spatially follows on from the post-productivist transition) may be more appropriate to describe the possible 'endpoint' of contemporary agricultural change, and that – in line with similar calls from an advanced economies perspective – the notion of post-productivist agricultural regimes should only be used to describe a specific (and relative) transitional phase of agricultural change.

Introduction and orientation

The geographies of rural areas in both developed and developing contexts have undergone dramatic social change and restructuring because of a variety of underlying political, economic, environmental and social sub-forces (Gallent and Tewdwr-Jones, 2000). Through rural economic restructuring and concomitant depopulation, many rural properties become available for potential second home owners (Müller, 2011). Second home development as an element of social, and general, rural change in the countryside can be associated with a transformation of the countryside into what is described as a more post-productivist state or consumption landscape (Hall and Müller, 2004). These post-productivist countrysides emerge as involving entities which reflect the breakdown of an almost absolute productivist past (Halfacree, 2012). The countryside is currently increasingly known for its amenities and imagined rural lifestyle (Hall and Müller, 2004).

Although second homes as a phenomenon have been researched in some detail in developed countries, considerably little scholarship has been presented on this phenomenon in the developing world where it can be used to understand the social perspectives and resultant impacts of this phenomenon on rural communities. Müller (2011: 137) confirms this contention when he states that the “scope of the phenomenon is largely unknown”, especially regarding the societal changes on rural communities such as restructuring, the influence of technology and globalisation. Hoogendoorn and Visser (2010b: 548) indicate that second home scholars in the developing world most often “analyse the impact of second home owners from an economic perspective.”

Internationally, second home researchers have predominantly focused on the middle classes, in countries such as Sweden and New Zealand (Müller, 2011), and the upper classes, in the United Kingdom (Gallent and Tewdwr-Jones, 2000). Even in developing countries, Hoogendoorn notes that scholarly reflection on second homes mostly focus on white, rich and mobile second home owners (Hoogendoorn, 2010), which only represents a section of the second home users of a country. He therefore states that “second home research in South Africa on people with lower incomes as second home owners is almost completely absent” (Hoogendoorn, 2010: 4).

Against the background of these facts and concerns, the aim of this investigation is to shed light on a specific set of issues that can take developing world scholarship on the social impacts of second home ownership further. A critical argument of this investigation is that the social perspectives and social impacts on rural communities in developing countries have not been investigated adequately within mainstream second home research and deserve urgent attention to more fully understand and theorise them. To understand social perspectives on second home owners clearly, three issues are put forward. Firstly: why do people (of all classes) have second homes in rural areas?

This question has preoccupied several researchers over the past twenty years (e.g. Clout, 2005; Hoggart, 2007). A number of explanatory motives have been put forward, most notably the desire to escape from routine, home life, and, ultimately, from modernity itself (Quinn, cited in Hall and Müller, 2004). Another reason why people have second homes in rural areas, according to Hoogendoorn (2010), might be the ‘visiting friends and relatives’ factor (VFR tourism), which could perhaps be interpreted as another form of escape. He argues that there is an inseparable link

between VFR tourism and second home tourism as a consumptive phenomenon; which is in line with Müller's (2011) thinking. This paper *inter alia* focuses on the VFR factor amongst especially lower income groups.

The second question the investigation addresses relates to the possible impacts second home owners have on host communities – and *vice versa*. It is suggested that Walford's (2004) dichotomies of outsider/insider and landscape/place could possibly be applied to rural communities in developing countries, not least rural South African second home destination regions. Place could be experienced as an aesthetically pleasant landscape by one individual or group and may be experienced by another as a place of home with a wholly distinct identity and set of meanings. The insider's place is rapidly being remade into something wholly unknown by outside forces, for instance: disparities in lifestyle, class and core values, as well as social inequities and community conflict. According to McWatters (2009) the whole character of small towns could change, and change is a part of its identity. Part of this research investigates the seasonal and weekend resident attachment to such a landscape, but also farm dwellers' migration during weekends to townships or "informal dwellings." (Informal dwellings refer to settlements alongside towns which have sprung up because of non-regulated migration. After 1994 the government launched a number of projects to allocate land, housing and better services in these areas). This represents a different trend compared to the worldwide trends.

The last question is: to what extent is the theory of post-productivism aligned to the study area? The post-productivist countryside is no longer seen primarily as a "food factory" but as a place for leisure and residence (Marsden, 2010). In addition to leisure and residence, the possible role second homes play in rejuvenating the post-productivist countryside will be examined. Wilson and Rigg (2003) argue that it is possible to measure the shift from productivism to post-productivism on the basis of six indicators. They argue that the concept of post-productivism needs to be adapted and developed to address conditions outside the developed world by:

"embedding it possibly with theoretical discussions surrounding the Southern-based concept of 'deagrarianisation' and also emphasising that the theoretical notion of multifunctional agricultural regimes (a regime that conceptually, temporally and spatially follows on from the post-productivist transition) may be more appropriate to describe the possible 'endpoint' of contemporary agricultural change, and that – in line with similar calls from an advanced economies perspective – the notion of post-productivist agricultural regimes should only be used to describe a specific (and relative) transitional phase of agricultural change" (Wilson and Rigg, 2003: 681).

The three questions/issues discussed form the basis of this investigation.

Research methodology

The investigation elected for a mixed method paradigm as qualitative/quantitative research is a holistic and inductive approach where a specific social phenomenon is explored, understood and described, rather than predicted (Anderson, 2002). The aim is to gain a fuller and more in-depth understanding of how second home ownership unfolds in a particular setting, what it means for participants to be in that setting, what their lives are like and what meaning they ascribe to experiences in relation to second homes (adjusted from Denzin and Lincoln, 2011). The focus is not only on the outcomes of the study and the whole research process is considered important (Denzin, 2013). The attempt was not to prove hypotheses but rather to

draw parallels between the findings of this case study and the existing discourse in second home research, and detect novel trends. Data will be analysed inductively, with the aim of gaining an in-depth understanding of the phenomenon studied. An in-depth case study design is regarded as suitable for the current study. An in-depth investigation of a natural case will be reported on and therefore the current study can be regarded as realistic (Yin, 2011). The focus of the current study is to gain an in-depth understanding of the social issues of second home owners on host communities and *vice versa* - namely Rosendal/Mautse in the Eastern Free State and; to understand the emotional reaction of various groups of individuals in the town/area owing to the erosion of the socio-cultural fabric of rural values displaced by the urban values of second home incomers. Therefore, no prior hypothesis was set, but a problem statement was formulated to guide curiosity about the practice itself (Stake, cited in Beeton, 2005).

Data was gathered over several months during 2010 to 2013 (June/July 2010; December 2010 and January 2011; December 2012 and January 2013) in one location, namely Rosendal, which is divided into sub-areas: Rosendal town, Mautse township and Rosendal farming community. Figure 1.1 provides an aerial view of the case study area.



Figure 1: Rosendal/Mautse case study location.

Second home owners were identified through the rates base address listings of the Dihlabeng municipality within which Rosendal is located. If a homeowner's tax and services accounts were sent out to an area other than the Dihlabeng municipal area in which the property was located, the owner was identified as a likely second homeowner. However, many of the addresses were outdated and therefore another data collection technique also had to be used. Purposive and snowball sampling as a data collection technique was used. Some municipal officials and residents of Rosendal assisted with telephone numbers and e-mail addresses of second home owners. Thirty semi-structured interviews were conducted with stakeholders in the Rosendal town area, which include businessmen, entrepreneurs, local residents and second home owners (Category A).

Structured questionnaires form part of Category B informants. In total 74 participants responded, namely: 40 second home owners from Mautse; 37 second home owners from Rosendal town and 10 second property owners on farms in the Rosendal district. Participant observation over the three year period informs the result of the interviews and questionnaires throughout.

Owing to the descriptive nature of mixed methods research, the data is presented in the form of letters and symbols (Coffey, Atkinson and Delamout, 2003). A SPSS software programme (version 19) was used to analyse the quantitative data. The data was captured in Excel spreadsheets and analysed statistically. The thirty qualitative interviews were transcribed into Microsoft Word documents. However, owing to the relative manageable extent of the research data, the researcher organised, managed and categorised the data herself. This implied that after the data was coded, themes, patterns, relationships and connections within and between categories were identified through the building of networks, code families, tables and matrixes (Coffey *et al.*, 2003).

A profile of Rosendal and its second home owners

The purpose of this section is to provide a profile of Rosendal and its second home owners. It will be argued that traditional second home ownership, as it exists in developed countries, is also prevalent in Rosendal/Mautse. More importantly, however, it is argued from the empirical data that a new dimension of second home ownership exists in Rosendal/Mautse, namely ownership by lower income groups. Further, it will be argued that reasons for buying/being allocated a second home differ according to different income levels. Keeping the above arguments in mind, it has to be noted that the study area as a whole is very small and hence requires very high levels of detail. The universum of this study for Rosendal town is 37 second home owners out of 150; 10 second property farm owners while for Mautse it is difficult to determine. The municipality could not assist with the calculation due to the unstructured and uncontrolled management of the plots. However, after interviews with different stakeholders, 100 possible second property owners out of the approximately 8000 residents were eventually located. All second home owners in Rosendal town (the former White Group Area), in terms of the survey participants of Rosendal town, are white, while in Mautse township (the former Black local authority) they are all black. Most of the second home owners are male (69%). The languages spoken vary from Afrikaans (37%), English (15%) to Sotho (49%). Given that Mautse consists of approximately 8000 residents, while Rosendal town consists of approximately 150 residents, this is in line with the language profile of the area. It has to be pointed out that this investigation makes a critical addition to the South African second home discourse by including this cohort of second home owners. This phenomenon of second home owners in a rural settlement like Mautse, can in part be ascribed to the fact that the government provided plots to previously disadvantaged groups in South Africa after 1994. The Reconstruction and Development Plan (RDP) was a socio-economic policy framework implemented by the ANC government with the aim to address the immense socio-economic problems brought about by the consequences of the struggle against its predecessors under Apartheid.

Another personal characteristic of second home owners is that 49 percent of the participants have a Grade 12 level education or lower, mainly those owners in Mautse, which indicates that this group of people can also own or develop a second

home. Similar findings were reported more than a decade ago by Chaplin (1999) with her study in France under British second home owners, where occupational and educational backgrounds vary from professional and managerial classes to workers in factories. Second home ownership seems by no means to be exclusively for the professional or elite classes. In the current study, the occupations vary, including farm worker, metal worker, bricklayer, construction worker, receptionist, interior designer, architect, medical doctor, lecturers, journalists and professions such as film producer, executive chef and engineers.

The reasons for purchasing a second home in Rosendal also vary. Most of the second home owners (32%) reported that their families stay in Rosendal area and they therefore feel attached to the area. This was the case with the owners in Mautse. Thirty-five percent of owners indicated that they bought the property for aesthetic value and to escape from city life. This is in line with Florida's study (2010: 86) which claims that there are "three key attributes" that make people happy in their communities and cause them to develop a solid emotional attachment to the place they live in, namely: an environmental attachment which refers to the natural beauty, the aesthetic context, and the openness of the area. The social attachment refers to how easily people can meet others, make friends and plug into social networks. The open-mindedness attachment refers to general acceptance and tolerance of diversity. Similar findings from Hoogendoorn's study (2010) are reported which include motivating factors such as the natural beauty of the surrounding area, the diversity of leisure activities and the promise of a lifestyle associated with the countryside. Müller (1999) and Heins (2000) have discussed in their research the 'cult of nostalgia' and the 'rural idyll' that second home owners pursue when they visit their second homes in an attempt to re-connect to rural living or a lifestyle that is considered to be more 'natural' than living in major metropolitan areas.

Impacts of second home owners on Rosendal/Mautse

During the course of the study a number of themes regarding the impacts of second home development in Rosendal/Mautse emerged, which forms the basis of the aforementioned arguments. These themes are developed through eight sections of analysis and discussion, namely: the supportive character of second home owners; the financial contribution to the local municipality through taxes/rates and employment creation; the involvement in different activities; generating new ideas; the engagement with locals; values of locals vs. second home owners; the character of the town that has changed from a traditional agricultural farming area to an environment with a mix of modern urban values and traditional values; and the effect of second home ownership on property prices.

The first theme induced from the empirical data – regarding the impacts of second home development – has to do with the social and financial supportive character of second property owners in Rosendal/Mautse. This impact is partially seasonal and/or at month end and varies according to the owners' length of stay at their second homes. These owners, but also importantly their guests, provide seasonal and month end stability in the demand for a range of tourism-related functions, which in turn service the tourist market. In Mautse, the supportive character of second home owners is also experienced by local businesses, but somewhat differently to that of Rosendal town, because cultures differ (African people enjoy their music and traditional beer) as do income levels. The owner of one of the taverns in Mautse confirms the support of "both locals and second home owners". He mentioned that

second property owners (especially the farm workers) normally “come during month end after they receive payment”. A second theme concerning the impact of second homes on Rosendal/Mautse is the financial contribution second home owners make. Hall and Müller (2004) argue that second home tourism makes a large financial contribution to local authorities through rates and taxes. In addition to the financial contribution second home owners make, second home owners are dependent upon hired assistance to maintain their homes. Employment is thus created in and around the second homes. Locally hired assistants mostly work at the homes during weeks/days that the owners are not there and provide security with their presence at these premises. A third theme regarding the impacts of second homes on Rosendal/Mautse is the involvement of second home owners in different activities in the host community. Müller (2011) highlighted the important contribution that second home tourism can make to the broader tourism industry, especially in rural areas. A variety of different activities in the Rosendal/Mautse area emerged during the interviews with participants. The manager of the coffee shop (BO4) explained the benefits of one of these activities as follows:

Every three weeks or so there's a performance by South African artists and celebrities and the 110-seat theatre is sold out. The second home owners with their friends from the city also come, and also folk from the surrounding areas as far afield as Bethlehem come to enjoy the 'real big city Joburg' entertainment. A light meal, at an exceptionally realistic price, rounds off the evening.

Another issue of socio-cultural concern in second home research is the general lack of interaction between second home owners and permanent residents (Marjavaara, 2008). The trend observed in the current study is similar, though on a limited scale. The following responses came to the fore: The manager/owner of the ‘take-away’ café (BO2) and grocery store (BO1) indicated that “they are not personally involved with the second home owners”. Socio-cultural impacts are a source of many conflicts at the destination (Marjavaara, 2008). Second home owners often represent urban lifestyles and urban values that are temporarily injected into an environment with different norms and values that often lead to a collision with local life. Another socio-cultural impact has to do with different sexual orientations. A retired resident, who resided 30 years in the farming area and then relocated to Rosendal town, mentioned the different sexual orientations which have a social impact on the host community. Another theme regarding the impacts of second home owners on Rosendal/Mautse is the effect of second home ownership on the town’s character and identity. Müller (2011) states that in Canada, second home development is often isolated from the rural landscape and change the countryside into an elite landscape, which implies a clash of traditional rural lifestyles with urban images of rural life. Second home owners can be described as giving at least a seasonal/month end/weekend life to a location that would otherwise be very quiet. What is transpiring is that a traditional character – mostly during the week outside of holiday periods – is complemented by a more progressive character during weekends/holiday/month end when an influx of second home owners is experienced. In the last theme regarding the impacts of second home owners on Rosendal/Mautse, it is argued that second home owners enter what is already a conflicted landscape in many ways. The second home owners of Rosendal town represent individuals from the upper classes of society who are in the position to buy a second property and the locals in Rosendal town are mostly retired residents, and cannot afford to pay the higher taxes as well as the higher wages for their domestic workers.

Rosendal assessed against the indicators of post-productivist countrysides

The intention of this section is to assess Rosendal/Mautse as a case study against the 'indicators' or 'dimensions' of post-productivist countrysides. These indicators are: counter-urbanisation, consumption of the countryside, on-farm diversification activities, organic farming, policy change, the inclusion of Non-Governmental Organisations at the core of policy-making.

In South Africa, it is partially possible to 'measure' the shift to post-productivism on the basis of various indicators suggested by Wilson and Rigg (2003). Following the publications on the Revised Industrial Policy Plan (March 2010) and other policies concerning agriculture, a considerable consensus has developed in the policies and the academic debates about rural change – to progress to a more integrated approach to rural areas and to the regional economies and spaces in which they are increasingly embedded. However, the focus is still on sustainable development and the redress of inequalities. Thus, the current dynamic processes of rural restructuring (for instance land reform in South Africa) occurring in the post-productivist countryside are, under present conditions, far from harmonious or integrated (Marsden, 2010 in England, Atkinson, 2007 in South Africa). Moreover, successful recent local integrated rural development initiatives have been the exceptions rather than the norm (e.g. organic farming in Western and Eastern Cape and Limpopo Provinces). To build upon them will require a more concerted and strategic spatial planning approach on a regional basis which can at least attempt to reshape and modulate global and local dynamics as they impact upon the realities of differentiated rural spaces.

To conclude, the six indicators can only be applied partially and in a nuanced way in the investigation. One example where this investigation is not aligned with the indicators is the fact that lower income earners can own a second property in a developing world – and this needs to be highlighted. These people now have residence security and, as Atkinson (2007) states, this can contribute to land reform, food security, local economic development and sustainable natural resource use. A further deviation from counter-urbanisation as indicator is that a percentage of second home owners are farm workers, working on farms during the week, and then commuting on a weekend/month-end basis to town. This is totally different from developed country views and the parameters of counter-urbanisation as stated by Wilson and Rigg (2003). Another example of non-alignment is that policy change that translates into sustainable post-productivist actions is dearly lacking at national, provincial and local governmental levels.

Conclusion

Social perspectives of second home ownership in a rural area of a developing country seem to have particular characteristics, over and above the generic characteristics identified in developed countries. It is hoped that this investigation contributed substantially to the unravelling of these particular social perspectives.

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China cooperation towards African cities development

Real estate construction by Chinese companies in Nairobi

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Abstract: The paper aims to analyse a specific aspect of China-Africa cooperation: the way China contributes to urban development through housing construction in Africa. African cities represent a new market for China which has developed a sound experience in urban development over the last 30 years, especially by building housing units for new city dwellers. The circulation of urban models and practices over the globe does not only function from North to South, but also on a South-South basis. The China-Africa cooperation in urban development contributes to the urbanisation of African countries and the rise of a real estate market, but also helps the Chinese soft power to rise. Several matters are at stake: economics (for foreign and local companies), geopolitics (for bilateral and multilateral aid protagonists), and sustainable development (for the future of African cities). Despite the theoretical background of the paper belonging to the field of Urban Geography; the scope will include approaches in Economics and Urban planning. While Chinese projects in Africa are becoming numerous, our hypothesis stipulates that China begins to export its own urban practices on the continent. Ideas and conceptions from China circulate on a South-South trajectory. The influence of China is worth questioning. May Chinese sprouting projects in African cities have an influence on the ways of making cities in Africa? Are Chinese projects customized to local contexts? The paper will focus on the conclusions of a fieldtrip in Nairobi, Kenya. Public and private Chinese stakeholders are indeed taking part in urban development in Nairobi through major roads in the city and housing construction for middle classes. The paper will browse and analyse several housing projects built by different Chinese real estate developers, and compare Chinese practices at home and in Kenya.

Introduction

Over the last 10 years, Chinese interventions in Africa have increased tremendously. China occupies a major position in many African countries. With Kenya, diplomatic ties were established in December 1963 immediately after independence. China has become Kenya's main donor and second source of foreign direct investment after the European Union. The two countries have relations in several sectors: agriculture, health, tourism, media, energy, roads and urban services, etc. Within Nairobi, public and private Chinese stakeholders contribute to urban development by building roads, housing buildings, offices, water sewage, and by modernising the Jomo Kenyatta international airport.

While merely 8 % of the Kenyan population used to live in urban areas in 1963, urban dwellers nowadays represent 24 %. Urban population has increased by 4 % per year since the 1980's. Nairobi's population rose from 267 000 in 1963 (Charton-Bigot and Rodriguez-Torres, 2006) to 3.24 million inhabitants in 2011. It should double by 2025 and reach 6 million (United Nations, 2012). Nairobi, which was founded in 1899 by the British Empire on the Uganda railway, undergoes uncontrolled urban extension. Regarding housing, the needs were estimated in 2010 to 206 000 new units per year for the whole country, of which 82 000 units in urban areas (40 %). But production does not reach 50 000 units, which raises the annual deficit to 156 000 (The World Bank, 2011). Our research only focuses on collective housing buildings built by private real estate developers. According to our observations, this is

the only segment on which the Chinese intervene. Housing in Kenyan cities indeed remains mostly informal: 80 % of the people build their accommodation by themselves according to an official from the Kenyan Ministry of Housing. Nonetheless, real estate is a promising sector in the context of rising middle classes. Modern collective housing buildings correspond to an intermediary status between slums and high-end individual town houses or villas.

This paper aims to analyse how Chinese public and private stakeholders participate in the urbanisation of Nairobi's metropolis. It is based on the results of a fieldtrip. Semi-structured interviews have been held with development aid agencies, developers, and national and local government officials. There are around ten housing residences that have been built by Chinese developers in Nairobi and Greater Nairobi. Three of them have been examined as case studies. They highlight equivalences, but also special features among each other. The oldest project, called 'Great Wall apartments', was inaugurated in May 2010 on Beijing road in Mavoko municipality, in the South of Nairobi. 528 three-room apartments are split into 11 buildings of five floors each. The breaking ground ceremony was held with the Kenyan Minister of Housing in May 2008. The second project, 'Sunhills apartments', is more modest, with 168 units on a two hectare plot. It was opened from 2011 in Lavington, a residential area in Westlands district. The most recent project, 'Jacaranda Gardens apartments', is also the bigger one. Located in the North, it comprises 840 units spread in 25 four-floor buildings according to the marketing leaflet¹. How do Chinese stakeholders interfere in Nairobi's housing construction? Do their projects embody transfers of models and practices between China and Kenya? Who are the emitters? How are projects received locally? Can we find signs of Chinese urban practices within projects? Based on a particular example of South-South circulation of urban practices, the paper attempts to rebuild the roll-out of Chinese urban housing projects outside mainland China, by identifying the components which enable this transnational phenomenon with local impacts.

Cooperation versus business

China-Kenya relations operate at several levels, from bilateral official development aid (ODA) to growing private investments. The limit between development aid and business-based projects is sometimes blurred. One may indeed decipher a gradation from ODA under OECD criteria to totally private projects (Bräutigam, 2009). The plurality of stakeholders forces us not to consider China as a whole. Official cooperation at governmental level must be distinguished from government support of Chinese state-owned companies (SOE's) as well as from independent small and medium private enterprises (SME's). On the one hand, infrastructure like roads are built by SOE's through ODA or bids of multilateral agencies; on the other hand housing construction mainly depends on private initiatives, even though some companies receive indirect financial support from the Chinese government.

Chinese real estate developers in Nairobi are mainly SME's. Some of them are also contractors whereas others contract with Chinese construction SOE's depending on projects. There is no single model of project development and finance framework among the Chinese developers. For instance, the 'Great Wall' project involved a

¹But field observations reveal that some buildings are missing. The number of units could be inferior by 25%.

Chinese businessman based in Kenya, a Chinese state-owned construction firm, along with financial from a Chinese policy bank and private local credits. Indeed, M. Yang Zeyun, director of Erdemann Company, settled in Nairobi in 1993 and began real estate development in 2002 after succeeding in import-export.



Figure 1: Situation of the three studied housing residences (base map: Google)

He also deals with other activities like tourism and alcohol fabrication for export to Congo. His wife works within the company as an accountant and shares her office with three local staff. The construction of 'Great Wall' was financed through own share capital and a 500 million Kenyan shillings loan from Housing Finance, a local bank. Wuyi, a Chinese construction state owned enterprise also building Kenyan roads, did the building work. In parallel, the China Development Bank, which is a policy bank, delivered a credit line to the Kenyan Development Bank aiming at offering cash for mortgages to the buyers of apartments in 'Great Wall'. This is the reason why the project has been described as a sino-kenyan cooperation project (Xinhua, 2008). Nevertheless, it cannot really be considered as development aid, in as much as the China Development Bank delivers non-concessional loans (Charnoz and Severino, 2007). It is rather a kind of indirect guarantee to a commercial project benefiting to two Chinese companies, a construction SOE and a SME based in Nairobi. The credit line still contributes to the development of mortgage market in Kenya and to the good relations between the two countries.

Other projects like 'Sunhills apartments' are based on a much more simple process. 'Sunhills' is a fully integrated project, from design to construction and

commercialisation. The owner of the Chengdu Guanglin company is based in China Sichuan province and was assisted in Nairobi by a graduate in English from Sichuan University. The investment was completely financed out of the company's own share capital. The management should be retroceded to a local company once all units are sold out. According to a representative of Chengdu Guanglin Company interviewed in November 2012, benefits from this projects amount to 100 %. The diversified forms of Chinese interventions reveal a capacity to fit in either international aid architecture or the local economic context.



Figure 2: Picture of one side of the 'Sunhills appartements' residence

Housing construction for commercial aims

A profitable segment on the housing market

Chinese developers have acquired a sound experience building urban housing units within mainland Chinese cities (Sit, 2010)². Thanks to their experience, Chinese businessmen undertake private housing projects in Nairobi varying from a hundred to more than 600 units. All the projects we have visited are characterized by high density. These apartments' blocks are designed for creditworthy middle classes and upper middle classes. In Kenya, this category includes people employed within the formal job market, which is to say around 11 % of the urban population, that is to say 2.4 % of total population (Daily Nation, 2013). In Nairobi, the financing of housing purchases is mainly based on very high rates of mortgages with average interests' rates at 14-16 % (up to 24 %). Such rates may be explained by high risks like the complex legal framework or difficult recovery due to the uncertain job market. Most of the apartments are sold to plan or through the Internet before construction starts. They are bought either for main accommodation or for buy-to-rent investment³. Developers get cash flow before starting construction work and thus minimize their risk. Accordingly, the specific market segment on which Chinese developers in

² 20 million new urban-dwellers settle in Chinese cities every year.

³The share between home owners and tenants results from individual choices. The calculation would imply quantitative surveys with residents. This aspect goes beyond our research objectives.

Nairobi do business is focused on middle and high revenues from the formal sector. Chinese projects are spread everywhere in Nairobi's territory and beyond, within still low density neighbourhood. 'Great Wall' and 'Jacaranda Gardens' are located in two separate urban expansion areas. 'Great Wall' is located in Mavoko municipality (Machakos district), a mostly industrial suburb in the South of Nairobi where residential blocks extend rapidly due to price increase in the centre. 'Jacaranda' is located in the North of Nairobi within Kasarani district, near a main road built by Chinese companies. The two areas are considered as having low agricultural potential. 'Sunhills apartments' residence is situated in a residential neighbourhood called Lavington in Westlands district. The neighbourhood is composed of villas with gardens. Some of them are being sold for dense real estate projects. This produces a mix landscape of villas and buildings on plots of similar sizes. As a result, one may observe Chinese developers locate their projects either in currently urbanising areas, or within the existing urban frame. One common criterion among Chinese projects rests upon the thirst for high profit. But profits sometimes imply over passing local rules.

The lack of local governance

Nairobi's urban development is characterised by the lack of proper urban planning, high land tenure insecurity, and low respect of existing urbanisation rules and practices. The last master plan of Nairobi dates back to 1972 and expired in 2002. The drafting of new laws on land tenure is still on a standstill. Moreover, the plurality of urban planning actors (Nairobi City Council, Ministry of Lands, and Ministry of Nairobi Metropolitan Development) makes coordination even more complicated. As far as urban planning proceedings are concerned, the Urban planning department of the Nairobi City Council examines only 250 building permissions per month, in spite of a new application system online. Apart from major developers and people needing a mortgage, most of construction works in Nairobi do not proceed through a building permission. This comment from an official at the Urban planning department of the Nairobi City Council also includes some Chinese projects. The municipality has thus little means of control. Urban sprawl is mainly based on individuals' dynamics. As the main part of land is private, real estate developers negotiate directly with land owners, and then check the validity of land titles with the Ministry of Lands (Charton-Bigot and Rodriguez-Torres, 2006). The localisation of one project is determined by economic criteria rather than by a planned strategy of development.

So as to maximise their own profit, Chinese developers take advantage of the lacks of local governance. Whereas the average density in the city stands at 40 units per hectare, their projects may go beyond 60, even 80 apartments. They also overpass height limits, like 'Jacaranda Gardens' projects where some buildings present up to three additional levels compared to the plans submitted to the Nairobi City Council. According to the Urban planning department, some Chinese projects have even been refused because of a too high density. The law enforcement division of the Urban planning department has little means to control construction works. It has no coercive tools to face irregularities and can only notice problems. Over passing density rates and height limits allow Chinese developers to pay fewer taxes (land development taxes are calculated upon density announced in projects' plans) and to maximise their profit. With higher profitability, they are thus also more competitive on the market. Consequently, local authorities are divided between the need to build more housing units and the disapproval of high density among the population.

A response fitted to market needs?

Housing residences built by the Chinese present several advantages. In Nairobi, they respond to the same necessities as those imposed by urbanisation in China: rapidity, density, massive scale (Su, 2012). Buildings are bigger and delivered faster than those built by local companies. Projects are finished on time. According to some residents, the quality of structural work seems better. Apartments are adapted to the needs of middle classes -and guarantees wellbeing (each apartment is equipped with a kitchen, sanitation, running water, wireless connections, and power supply). 'Jacaranda' and 'Sunhills' also have swimming pools, even though none of them were functioning during our fieldwork. 'Great Wall' also includes services, shops as well as a primary school that welcomes pupils from the residence and beyond. The gated structure of the residences⁴ provides a feeling of security.



Figure 3: Picture of one building and the swimming pool of 'Jacaranda Gardens'

On the other hand, one may question the quality, the reliability, and the durability of these projects. The scale of the most recent project, 'Jacaranda Gardens', has seemingly been overestimated. Indeed, six out of the 25 buildings announced in the marketing leaflet have not been built at all. Instead of the two levels shopping centre presented on the model, there is only a green lawn. Unfulfilled promises are also a common practice among real estate developers within China (Tomba, 2005). Besides, some constructions are already starting to look slightly run-down: cracks on the walls, painting flakes, moisture, small rubbles, etc. At 'Sunhills apartments' residence, some puddles of water appear on inside stairs after the rain. Some bays of windows are too low which cause safety issues. In 'Jacaranda', inside finishing touches are poor. The bottom-end parquet floor gives a feeling of floating when walking.

The result of a hybridisation of models

Local influence and traces of imported Chinese practices

Despite a few Kenyan references, one may observe numerous markers of imported elements from China, regarding both materials and conceptions. Data collected on

⁴ We prefer not to use the expression gated communities, as the context is different from the US or South Africa.

the fields have been analysed, and compared to Chinese housing units, leading to the following ideas.

As far as architecture is concerned, the outside layout of the three studied residences looks Kenyan. They all include sloping tile roofs with dormer windows like in villas. In 'Great Wall' and 'Jacaranda', windows with small squares remind colonial villas inherited from the British Empire. The outside layout of all projects has been drawn by local architects. As architects registered under the Kenyan law, they are the only ones able to certify the building drawings. In fact, all projects result from a co-production with Chinese engineers. Dissociating the design of an outside shell and the drawings of the internal structure is a common practice in Chinese architecture and urban planning design agencies, like Tsinghua in Beijing or Tongji in Shanghai: an architect sketches a broad overview; detailed plans are done by distinct engineering and design departments⁵. Like so, it seems that Kenyan architects experience difficulties working with their Chinese counterparts who want to go their own way without considering local contexts and ways of doing.

Internal structure design and inside layout are either done from China ('Great Wall' and 'Jacaranda'), either locally within Chinese teams based in Kenya ('Sunhills'). The scale and composition of housing buildings remind of Chinese ones in residential districts. The narrowness of construction allows a double exposure of each apartment to natural light. One stairwell leads to two units per floor, as opposed to an organisation of one stairwell leading to common corridors with several apartments. Apparently, the size of stairs is designed according to Chinese standards, with the same number of gaps per half-bearings and the same style of metal guardrail. Most of the flats are composed for a single-child family with only two bedrooms. This format may suit Chinese families but may not be tailored for Kenyans. Like in many Chinese apartments designed for Chinese middle classes, there is no entrance: the main door opens directly on the living room. The equipped kitchen does not provide space for the fridge, which has to be put in the dining room. Next to the kitchen, there is also a closed balcony with connections for a washing machine, like in China.

We visited a show apartment to be sold in 'Jacaranda'. The decoration and furnishings indeed resembled the snobbish style inspired from Western past centuries that characterises fully equipped standing apartments sold in Chinese cities: heavy ceiling chandelier, still life paintings hung on the walls, cushions and curtains with laces and bobbles, massive furniture made of varnished wood, etc. Such furniture can be bought from 'Jacaranda' website where one may find catalogues in English with a few Chinese characters remaining (Jacaranda Gardens Company, 2012). This anachronic style is defined by a so-called but fake luxury, in total contrast with the surrounding environment. Nonetheless, it conveys an image of climbing up the social ladder. As they do in China, Chinese real estate developers in Nairobi design apartments that symbolise social success. As far as materials are concerned, heavy construction goods are sourced locally, but light equipment and furnishings are all imported from China: doors, locks, switches, sanitary, meters, etc. They all present a Chinese brand logo either in Chinese characters or in *pinyin* translation. The buttons of boilers, cooker hoods and interlinks are all written in Chinese.

⁵ Author's professional experience.

As expressed by the Chinese Embassy in Kenya in a speech by the Economic Counselor in March 2012, China is not willing to export its model but to “share its own experience” with Kenya. However, Chinese housing projects in Nairobi reflect uneven relations. Their conception is influenced by the methods of professionals who gained experience in China and thus convey their own practices. Even if this paper does not aim at questioning a possible political project of soft power, the issue of influence must be raised (Verdeil, 2006). Projects and their developers are the vehicles of models between two continents. They convey an image of success and contribute to the globalisation of cultural references.

Conclusion

Chinese stakeholders indeed contribute to Nairobi’s urban development. Whereas many urban infrastructure and buildings dated back to the colonial era and the years after independence, Chinese methods and projects accelerate the current catching-up. Their response to pressing needs highlight a pragmatic approach which differs from traditional partners. As an analyst from the Kenya Institute for Public Policy Research and Analysis (KIPPRA) told us in November 2012, “The flow of concepts from the North may not really address our priorities”.

To a certain extent, China participates to the circulation of urban models, and thus strengthens its own influence in Africa. But the export of urban practices also results from a broader transnational phenomenon. Indeed, even though similarities exist between housing residences built in Chinese cities and those built by Chinese developers in Nairobi, one may not conclude it is just a literal transposition of a would-be Chinese urban model. In fact, Chinese housing residences themselves result from a hybridisation of models from overseas like the housing privatisation influenced by the World Bank or Singapore’s condominiums-style real estate. Besides, China’s experience of urbanisation cannot be literally transposed to the Kenyan context, despite it symbolize a great success.

To cope with urbanisation stakes, the Kenyan government welcomes contributions from all foreign countries, without limiting itself to western countries. After 2002 elections, the coalition implemented a strategy of openness to Asian partners, referred as ‘Look East’ policy. This positioning considers that recently developed Asian countries have much to offer compared to the West, at a lower cost. It reflects the reconfiguration of powers between developed and emerging countries. As stated by the former Senegal President Abdoulaye Wade: “*China’s approach to our needs is simply better adapted than the slow and sometimes patronizing approach of Europe*” (Bräutigam 2009, p. 135).

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V. Informal economy and urban ecology



Ljubljana, Slovenia (Source: Nico Kotze)

Cape Town CBD foreign street traders INC.

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Abstract: The contribution made to the South African informal economy by foreign street traders is well documented. Immigration studies show that restrictive immigration policy discourse in South Africa has led to a negative perception of immigrants (Crush 2008). A negative perception of foreigners in turn fuels xenophobia that hampers foreign street traders' ability to participate and contribute to the South African informal economy. This study is based on a survey conducted among foreign street traders in the CBD of Cape Town and interviews with public stakeholders and City of Cape Town officials responsible for managing street trading in the CBD. Cape Town foreign street traders' profile resembles their counterparts in other cities but the research has shown they are affected differently. Cape Town based foreign street traders fail to contribute significantly to employment creation, compared to elsewhere. This lack of contribution is explained through a legalist interpretation. In this regard the City of Cape Town's failure to include traders within the policy process as well as the local government's inability to offer business facilitation opportunities to foreign traders. The paper aims to illustrate that Cape Town's foreign street traders lack of contribution is not the result of xenophobia but rather because of a regulatory framework which does not provide the needed facilitation.

Introduction

Internationally and in South Africa a negative perception of street traders is documented in studies such as Lewingson (1998), Cross (2000), Popke and Ballard (2004), Yatmo (2008), Setsabi and Leduka (2008), and Brown, *et al.* (2010). These studies tend to focus on the perception held by formal actors or the elite urban classes and do not distinguish between South African and foreign traders. It is estimated that the total number of immigrants in South Africa legal and illegal is 4% of the national population (Polzer, 2010). A large foreign contingent in South Africa's street trading economy is a reality given the increase in immigration since 1994 (STATSSA, 2008). The more than 210 000 foreign born and non-nationals recorded in the 2007 community survey is evidence of an increasing foreign population in Cape Town (STATSSA, 2008). Studies have shown the potential or the existing positive contribution that is made by foreign street traders to the informal economy (Peberby, 2000, Peberdy and Rogerson 2000, Peberdy and Crush 2001). The positive contribution made by foreign street traders is however hampered by the presence of xenophobic attacks on foreign owned businesses. This paper is aligned to studies that highlight the difficulties that foreign street traders experience as opposed to their South African counterparts (Hunter and Skinner, 2003; Skinner, 2008). This paper contends that foreign street traders' inability to make a significant contribution to Cape Town's informal economy is because of a regulatory framework which does not provide the needed facilitation. This will be discussed in the following sections. First the difficulties foreign street traders face in and the contribution they make to the informal economy will be discussed. Secondly the study's methodology will be presented. The results from the survey will then be covered. The paper concludes with a discussion regarding the local government's initiatives and deficiencies with regard to facilitating foreign street traders.

Foreign street traders: challenges and contributions

Immigration policies from the apartheid era has led to restrictive immigration policies post 1994 (Crush, 2008a). A restrictive policy approach to immigration has not influenced the inflow of foreigners to South Africa with the number of documented and undocumented foreigners increasing with every post-1994 census or community survey (Peberdy and Rogerson, 2000). Populist belief holds that immigrants are a threat to the socio-economic livelihood of South Africans. This belief has been apparent in the increase of reported xenophobic attacks during the late 90s wherein various foreigners were targeted physically or economically (Rogerson, 1998). Causes of documented cases of xenophobia could be simplified to economic and social causes. Social in that foreigners are thought to 'steal' employment and resources from South Africans as well foreigners being involved in criminal activities (Lubbe, 2008). Causes of an economic nature stem from the South African formal economy, private and public sector, struggling to expand in an equitable manner (Wills, 2009). Many foreigners are not able to partake in the formal economy because of their immigration status. They turn to the informal economy using their various skill sets obtained formally or informally outside of South Africa. Within the informal realm of the economy is where South Africans and immigrants clash (Rogerson, 1998). Foreigners have a higher level of education, an extensive skill set and a cross border social network that gives them the comparative advantage (Peberdy and Crush, 2001). South African owned informal businesses seem to wallow and stagnate whilst their foreign counterparts move forward and expand (Hunter and Skinner, 2003). The success of foreign informal businesses leads to South Africans perceiving foreign street traders stealing employment opportunities. Foreign street traders are faced with a threefold barrier to making living in the informal economy. First national government's unclear restrictive immigration policy stance led to South Africans being unwelcoming towards foreigners. Second the negative perception of foreigners is expressed through xenophobic behaviour which makes it difficult for traders to start a business and gives no incentive for the owner to grow the business. Lastly, their economic success causes fellow South African street traders to accuse them of stealing job opportunities. Given the mentioned difficulties foreign street traders and other informal economic agents make a valuable contribution to the South African economy.

Foreign street traders' contribution to the informal economy is well documented in studies such as Rogerson (1998). Rogerson (1998) found that foreign owned informal businesses generate 3.3 jobs per business which employs South Africans. Studies regarding informal cross border trade disproved the notion that foreigners take money out of the South African economy through means of remittances or the acquisition of stock from their country of origin (Peberdy and Crush, 1998; Peberdy and Rogerson, 2000; Peberdy, 2000; Peberdy and Crush, 2001). These studies are proof that foreign traders contribute to the informal economy in terms of employment, capital investment and cross border economic networks. Foreign street traders encounter barriers to operating in the South African informal economy but make a valuable contribution which is not being capitalised on. Foreign street traders have the best potential, given their education or skills, to grow and formalise their businesses in South Africa. Local government should aim to include foreign traders and create an inclusive environment to facilitate foreign run informal enterprises. This is however not the case with the majority of the small, medium and micro-enterprise (SMME) facilitation not available to foreign street traders. As these traders cannot

vote it is no surprise that their needs are not a priority of local government. Given the potential foreign street traders have to drive the informal economy it would be ignorant not capitalise in some way on their experiences and expertise.

Methodology

For the study two sets of interviews were conducted. Firstly, interviews were held with local government officials on aspects pertaining to the regulation of street traders in the CBD. Secondly, a questionnaire survey was conducted among 45 foreigner street traders to determine the relationship between street traders, local government, and the formal businesses in the vicinity in which the vendors operate. The surveys were conducted in the four Central City Improvement District (CCID) precincts of Cape Town.

Foreign street traders in Cape Town

The origin of foreign traders was grouped into four categories: SADC, West Africa, East Africa and other. The percentage of traders from the three defined regions of origin was closely related to one another. The SADC and West African regions both accounted for more than 34% of foreign trader and traders from East Africa contributing less than 27%. When nationality was considered the majority, more than 21%, of traders hailed from Somalia. The large number of traders from the SADC region is to be expected because of integrated political and economic ties South Africa has with its neighbouring countries. In the study of Hunter and Skinner (2003) they also found that a large percentage of foreign street traders were from the SADC region.

Traders from the SADC region put forth economic reasons for leaving their country of origin (Hunter and Skinner, 2003). The majority of foreign respondents were male contributing to 84% of those interviewed. The large percentage of males recorded differed from findings of international street trader studies but also correlated with local studies on street trading (Mithulla, 2003). The number of dependants of traders varied greatly with some traders having no dependants and one trader supporting 11 dependants. The mean number of dependants was three which is lower than the average Horn (2011) recorded for Cape Town. Most traders indicated that they entered street trading for economic reasons. Almost 70% of traders claimed to have started trading because they could not find employment and needed to employ themselves. This finding correlates with studies where traders involuntarily enter street trading instead of wage employment (Bromley, 2000; Motala, 2002; Bhowmik, 2005; Willemse, 2011). The majority of traders indicated that they have been involved in street trading for more than a year with some indicating they have been trading informally for as long as 20 years. Respondents' level of education was generally higher than their South African counterparts. More than 60% of foreign traders had some form of tertiary education with 37% indicating that they did not complete formal schooling. That foreign street traders have a high level of education is well documented within South African studies (Rogerson, 1998; Peberdy, 2000; Hunter and Skinner, 2003). A higher level of education and a social network that crosses international boundaries position foreign traders to undertake business ventures successfully (Peberdy and Rogerson, 2000). Level of education has a great influence on the success of an informal enterprise as most of the time basic bookkeeping principles are not practiced.

From the above the foreign traders surveyed in Cape Town have four main characteristics. Firstly, the majority of the traders were male, which could have influenced the recorded number of dependants supported by their informal ventures. Secondly, there was no true dominant region of origin, however regarding national origin Somalians were the majority. Thirdly, traders were involved in street trading because they could not find employment in the formal sector. Lastly, a large percentage of the traders interviewed were well educated with only 37% having no tertiary education. Questions regarding traders' income and expenditure found that traders have the potential to make profits well above the primary fixed monthly cost however the number of employment opportunities created by traders was poor. Other studies have shown that foreign traders can make a valuable contribution to the informal economy but in Cape Town it was found that foreign traders could be making a greater contribution.

Xenophobia and street trading

The role xenophobia plays is a possible factor hampering street trade. Xenophobia has garnered attention in the South African media over the past few years. Street trader's perceptions of xenophobia provided insight into what local government is doing to protect foreign traders against possible xenophobic attacks. The question as to whether or not foreign traders are afraid of xenophobic attacks delivered mixed results. A slight majority (54%) do not fear xenophobic attacks. To better understand trader's responses, they were also asked to justify their answers.

The reasons given as to why foreign traders fear xenophobic attacks were dominated by two categories of answers, accounting for 55% of the responses, with 27% of the respondents claiming that they do not fear xenophobic attacks within the confines of the city but do fear xenophobia in the townships where they live. The remaining 27% indicated that they fear xenophobia because it is bad for business and the general social environment. The fact that there are some who feel safe in the city but not at their place of residence is a good indication that local government has put in place systems that have addressed the issue of xenophobia within the city. That more than a quarter of the foreign traders pointed out that xenophobia is bad for business is evidence that these individuals are astute business people with the interests of their businesses at heart.

Less than two thirds (63%) of those respondents who stated that they do not fear xenophobic attacks cited that the reason for their answer is because they feel safe in the city. This corresponds with more than a quarter of those foreign traders who answered "yes, they do fear xenophobia" and confirms the notion that local government's efforts to curb xenophobic attacks in the city have been successful. Other reasons that were cited for not fearing xenophobia are as follows, in descending order: "I am not a threat" (18%), "I am not afraid" (9%), and "It is only rumours" (9%).

From traders' responses it became clear that there was a geographical component to the fear or the lack thereof regarding xenophobic attacks. To investigate a proposed geography of fear, traders' place of residence was cross tabulated with their response to whether or not they were fearful of xenophobia. The majority of foreign traders who indicated that they find the city safe but not the townships were those traders living beyond the limits of the CBD. With 40% in the CBD fringe area and 40% residing in the Greater Metropolitan Region, it can be deduced that these

traders have had first-hand experience of xenophobia in the townships, a likely haven for those belonging to the lower socio-economic strata. First-hand experience of xenophobia by those staying in the CBD fringe area (66.67%) and the Greater Metropolitan Region (33.33%) could serve as the driving force behind the manifestation of a perception that discrimination is a part of life. Those who indicated that xenophobia is bad for business and the social environment are traders who stay in or close to the CBD. In fact, 40% of the respondents who cited that xenophobia is bad for the socio-economic environment as the reason for their fear of xenophobia actually reside in the Cape Town CBD, while the other 40% live in the CBD fringe. Thus, these traders could be more interested in the social processes at work in the city, and could, therefore, acknowledge the negative impact that a social process such as xenophobia could have on the urban fabric of Cape Town.

The same cross tabulation was done for the reasons given by foreigners for not fearing xenophobic attacks. Of the four categories, only the category, "It is safe in the city" can be explained geographically. Almost all of the foreign traders who are not afraid of xenophobic attacks (92.8%), live in the CBD of Cape Town (57.1%) or in the CBD fringe (35.7%). It can, therefore, be expected that traders who live in areas in and around the Cape Town CBD, and not in a "xenophobic hotspot", are not exposed to or have not experienced xenophobia. This is good for the local government of the City of Cape Town management but it points to a warped perception of the reality of xenophobia in the case of people living in the city.

The response from the questions would indicate a clearly spatial component to the issue of xenophobia. The Cape Town CBD is apparently a safe haven for foreigners as foreign traders do not fear xenophobic attacks and feel safe in the city. However, the situation on the periphery needs to be addressed. From the above there is no indication that xenophobia plays a role in the manner in which traders conduct business in Cape Town's CBD. Evident from the findings is that Cape Town's foreign traders are not contributing to their full potential if previous studies are taken into account. With Cape Town being a tourist destination of note and the CBD being a viable urban economic space these entrepreneurs should be flourishing. It can be concluded that the reason for street traders not contributing as much as they potentially can does not stem from an economic nor a social cause but rather a regulatory cause.

Regulatory constraints

Studies mentioned have pointed to job creation potential, direct investment and cross border trade as examples of foreign street traders contributing to the South African informal economy. These contributions are made despite the socio-economic barriers foreigners face with regards to participating in South African informal economy. From the research findings Capetonian foreign street traders are struggling to make significant contributions similar to that recorded in other metropolitan areas in South Africa. Cape Town's informal regulatory environment is one that is accommodating to the practice of street trade. The presence of Green Market Square, the Grand Parade market and the various street trading bays located in the CBD is evidence to this. Local government has a positive policy approach towards street trading but this approach is neither nurturing nor facilitative. Through interviewing officials from the City of Cape Town's Department of Economic and Human Development it became clear that on the fronts of business facilitation and communication, local government was failing the street traders. From the survey it

became apparent that local government has decided to give up on micro enterprise empowerment schemes. At present there is no local government run micro enterprise facilitation or micro enterprise owner empowerment programs running. Local government has however decided that such activities are to be outsourced to private firms, but from talking to traders about the availability or the accessibility of such programs the number of traders reached through this model is insignificant.

Traders were not made aware of business aids nor were they informed or included in the informal trading policy process. Although traders are informed about policy changes they don't form part of the process that produces informal trading policies or bylaws. Lack of participation in the policy formulation and implementation process is a key regulatory constraint on informal traders. From the previous section it is apparent that for foreign street traders operating in the or around Cape Town's CBD xenophobia is not an issue that influences the operation of their businesses. The regulatory environment does allow for these traders to trade informally but does meet the goals of national or provincial SMME policy objectives. The Cape Town local government however feels that when these opportunities are made available, traders do not respond in a positive manner. The majority of business facilitation opportunities are aimed at South African traders who are not embracing the opportunities. Instead of making these opportunities only available to South Africans local government should consider including foreign street traders in these facilitation programmes. As the aim of facilitation initiatives is not the enrichment of a select few but rather the creation of a vibrant street trading economy benefiting all involved.

Conclusion

There is little evidence to state that there is a positive relationship between trader participation and earnings however in an environment where traders are strictly regulated, such as Cape Town, participation in the formulation of regulations would be expected. Whether or not local government provides the opportunity for traders to participate cannot be commented on but it would seem as though the method being employed is not effective in including traders in the policy process. Through not incorporating foreign traders in the policy process local government is creating or even perpetuating an environment where in these individuals' expertise and knowledge is not capitalised on (Hunter and Skinner, 2003). In Durban the president of Informal Trading Management Board called for the inclusion of foreign street traders in SMME facilitative programs (Hunter and Skinner, 2003). This could also lead the forging of relationships between local and foreign traders that could change the perception held by South African street traders of their foreign counterpart. Lack of support for foreign street traders is not unique to Cape Town as the informal trader policies of Johannesburg and Durban do not make any provision for this group. However Cape Town's history of progressive informal trader policy interventions pre-dating the Business Act of 1991 makes it suitable for championing the contribution made by foreign informal economic actors.

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Regulation of street trading in two nodes of Cape Town

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Abstract: The regulation of street trading in Cape Town has been fluid over the last 20 years. Street trading went from regulated to unregulated in the early 1990s and, later that same decade, was regulated again. It is currently regulated by City of Cape Town Government (the City Government) under the 2009 *Informal Trading* by-law. As a result, the City Government has attempted to strike a balance between regulation and the interests of the traders, but questions remain as to whether or not such a balance has been achieved. The lack of a concrete answer has lead us to investigate how the situation of street traders in Cape Town and the constraints they encounter on a daily basis interact with the legislative regime that regulates street trading. This study yielded two sets of findings. The first set of four main findings relate to the situation of traders and what can be done through regulation and formal organization intervention to improve this situation. The second set of four main findings deal with the legislative regime that regulates street trading and how its implementation has affected and been effected by the situation of street traders.

Introduction

Street trading represents one of the most visible and popular occupations in the global South (Donovon 2008; Mithullah 2004). Street trading in general is influenced by various external forces and these forces play a distinctive role in circumstances that alters the location of street trading areas. Urban spatial planning has an important role to play in inhibiting or supporting street traders (Skinner 2000; Tissington 2009:19). For Mitullah (2004: 5) "all types of enterprises in urban areas, whether micro, small, medium or large, should have the right not only to the CBD but to all goods and services...The notion of inclusion has different resonances in each region with exclusion of specific groups being most significant in some regions and exclusion of the poor majority more important in others." Therefore, including street trading into urban planning is to set out a framework for managing inclusion or exclusion (Skinner 2008a). Processes of inclusion and exclusion of traders should be addressed to an extent whether traders are being accommodated in areas that yield business, for example in the CBD which is the most lucrative site of a city. The processes of inclusion and exclusion of traders would "require corresponding acceptance by municipal authorities of complexity of representation and response", to whether traders are "excluded from their domain of representation" or whether "they have a platform for inclusion in the space of influence" (Brown et.al 2010). Bromley (2000) lists arguments that have been expressed by numerous researchers against and for street traders. The arguments against street trading can be described as an overarching facet that safeguards the negative perception urban elites have with regards to street trading. Most international literature suggest that the driving force behind the proliferation of street trading especially in the developing world is due to the lack of employment in the formal economy, however many international countries including South Africa still initiates the disparity between the formal and

informal sector. What is evident though is that the integration between the two sectors is necessary for the implementation of pro-active planning (Bhomik 2005).

The informal economy makes a significant, on-going and stable contribution to the South African economy. The informal economy's primary driving factor has been to ensure that those unable to find work at formal businesses are self-employed and allows impoverished locals to purchase goods and services at affordable prices. In the 2011 national census 1.6 million persons indicated that they are employed in the informal economy compared to 9.9 million in the formal economy. Within the three main metropolitan areas of South Africa Durban has proven to have sound management practices with regards to street trading, which can be seen in the Warwick Junction urban renewal project as a good example of integrating street traders into city plans (Skinner 2008b:11). Durban not only "established a department dedicated to street trader management and support, it also allocated more resources to infrastructure development than any other city." (Skinner 2008b: 235). This is in contrast to for example Johannesburg City Council declaring the whole city as a no-trading zone during the 1990s (Skinner 2008b). Informal trading in Cape Town CBD is different from trading in any other city, as there are more structured markets, and street trading is a more lucrative activity (Skinner 2000:54). A significant number of studies have been done in South Africa on the informal economy during the 1990s. In turn, reviews on the structural challenges facing the South African city after apartheid also abound (see for example Donaldson and Van der Merwe, 2000, Turok 2001, Geyer *et al.*, 2011). There has of late been a renewed interest in studies on the informal economy in South Africa over the past few years (Du Plessis, Geyer and van Eeden 2011; Van Eeden 2011; Willemse, 2011; Smit and Donaldson 2011; Geyer *et al.*, 2011). Few of these studies investigated the policy, regulatory and subsequent urban planning and management processes. The main aim of the paper is to review the street trading policy with specific emphasis on the permit system in Cape Town.

Methodology

In order to find out more about street trading and the regime that regulates it, 30 face-to-face interviews were conducted. The length of these interviews ranged from 15 minutes to 2 hours. Those interviewed included 22 street traders; the Cape Town Law Enforcement Official; City Official from the Business Area Management Unit; Lawyer from the Congress of South African Trade Unions (COSATU); Director of the Central City Improvement District (CCID); City Government Permit Administrator in Bellville; Chairman of the Grand Parade Street; City Council Members of the ANC; and the Managing Director of Cape Town Partnership (CTP). Questions posed to street traders included their experiences with street trading, views on market dynamics, the regulations and the authorities that administer them. Questions posed to stakeholders included the development of the regulatory regime, its application to street traders, effectiveness and the unintended consequences that have resulted from implementation. Stakeholders were also asked about their understanding of street trading in Cape Town and their views on what should be done in order to improve it.

Cape Town Street trading policy context

The regulation of street trading in Cape Town has been fluid over the last 20 years (Figure 1). Street trading went from regulated to unregulated in the early 1990s and,

later that same decade, was regulated again. Between 1990 and 2000 there were 6 administrations each with their own set of regulations and rules. These administrations amalgamated into a metropolitan authority after 2000. Currently street trading is regulated by City of Cape Town Government (the City Government) under the 2009 *Informal Trading* by-law (City of Cape Town 2009). A permit system is used to carry out several objectives of the By-Law. This system, in theory, helps keep track of traders and organize them in a way that is conducive to efficient public space management (www.capetownpartnership.co.za).

<i>Business Act</i> (1991)	→	<i>Amendment to Business Act</i> (1993)	→	<i>Municipal By-Laws</i> (1994)	→	<i>City of Cape Town Informal Trading By-Law</i> (2009)
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Figure 1: Street trading policy chronology

One aspect of informal economy is street trading, that is, the trading of goods on public streets and in markets. Goods for sale in street trading bays can range from art and musical instruments to basic necessities, such as food and hair care products. Street trading exists in almost every city in South Africa; the city of Cape Town is no exception. Within the CBD alone, there are six major markets and numerous other trading bays are spread out along the city streets. Bellville, a decentralized node in the city is also a street trading hub. Near the municipal buildings, there are upwards of 240 bays. The major difference between the street traders in these two municipalities is the consumers. CBD traders sell goods for tourists, while Bellville traders sell goods for locals. Street traders in Cape Town have a unique occupation with unique problems. Although the City Government acknowledges the importance of this occupation and the problems they face, they maintain that the number of street traders needs to remain in check to ensure civil order typically within a neoliberal context (Miraftab, 2007). As a result, the City Government has attempted to strike a balance between regulation and the interests of the traders, but questions remain as to whether or not such a balance has been achieved. The lack of a concrete answer has lead us to investigate how the situation of street traders in Cape Town and the constraints they encounter on a daily basis interact with the legislative regime that regulates street trading.

Research findings

This study yielded two sets of findings. The first set of findings (1-4) relates to the situation of traders and what can be done through regulation and formal organization intervention to improve this situation. The second set of findings (5-8) deals with the legislative regime that regulates street trading and how its implementation has affected and been effected by the situation of street traders. These findings are collated to answer the overall research question.

Finding 1: *Market committees are not controlled by the City Government and existing regulation seems insufficient to counteract autocracy and corruption*

The City Government employs six officials to manage markets and trading areas within Cape Town. Their role is mainly to administer the permit system. This includes the requests for and revocation of permits, and arbitration when payment of a permit is not made. They are also in charge of promoting trading areas and liaise with other agencies in the field to achieve this objective. They generally have little time to dedicate to this task due to the lack of resources.

Market committees are usually composed of traders. Their role is to organize and supervise market activities. These activities include marketing planning, which means ensuring product diversity and the promotion of South African made products in the market; verifying proper use of space and arbitrating cases where traders have a conflict; and informing the City Government of general issues in need of resolution.⁶ The City Government and market committees often work together. The City Government relies on committees for communication to the traders, feedback from the field and advice on permit allocation or revocation decision making. For example, before granting a permit, City officials will consult the market committee to see if the products a prospective trader wants to sell are appropriate for the market. The current regulatory regime provides few guidelines relating to the selection process of the market committee and its codes of conduct. As a result, committees vary from market to market. Interviewees often describe the selection process in some markets as autocratic, usually along the lines of ethnicity. The traders that make up the dominant ethnic group in the market influence the selection process, while those in the minority are marginalized. However, there are exceptions. For example in Bellville, the committee is appointed through an annual election where all the traders invited. Additionally, the By-Law does not include a code of conduct for committees or sanctions in cases of misconduct. As a result, traders, unions and the CTP report favoritism and bribery as commonplace. City Government intervention by way of better regulation and some enforcement could a) help ensure that traders are properly represented on all committees; and b) work to counteract the negative aspects that exist within them.

Finding 2: *There is little transformation from informal street trading to formal business; this causes stagnation*

The goal of economic growth is to increase the general welfare of the public. A broad base of economic growth, where as many people as possible get to take part in the wealth creation, is a strong measure in addressing poverty. Needless to say, poverty is a big problem in South Africa and it unfortunately seems to be structural. Ideally, street trading should serve as a starting point to move out of poverty. However, much trading is done on a survivalist basis and the development from informal to formal business is virtually nonexistent.¹⁰ Proof of this is in the fact that many traders that were interviewed for this study had been traders for more than ten years.¹¹ Street traders could progressively develop their business and eventually enter the formal economy, with the rights and duties that follow. This would create room for newcomers to street trading, which right now is limited. There seems to be a lack of policies to stimulate entrepreneurship in trading. Unfortunately though, there has been no champion to drive this. Cape Town is big on the delivery of basic services relating to infrastructure (e.g., water), but there is no parallel economic development plan to run alongside these services. Preferably, the economic development portfolio of the city could be stronger and take into account street trading. Although some traders operate on a larger scale than others, most trading is barely developed. Despite this, the City Government, CTP and CCID have all noticed the industriousness and cleverness of street traders. This industriousness and cleverness is a great resource that is not leveraged. It could be tapped into and redirected towards improving street trading conditions.

Finding 3: *The ethnic diversity of the street trading community impedes collective action amongst traders*

Disputes in the CBD over the right to trade are not as ethnically charged as they are in Bellville. In Bellville, there is enmity between the local South African population and the foreign population. Locals feel that the foreigners absorb trading opportunities and cut into potential revenues that are reserved for local traders. The competition for bays brought about by regulation only amplifies this enmity. The tension between local and foreign street traders in any market has negative implications for all traders. If traders were to instead organize and cooperate, it could benefit them economically. This is what has made the Somali traders so successful in certain markets throughout Cape Town.¹³ Somalis band together and buy fast-moving consumer goods (e.g., pop and gum) at wholesale, in bulk and in cash. This allows them to sell these goods at a lower price, which means they will sell more. Local traders, for example, do not have this level of cohesion and cannot compete. They still buy from wholesalers, but do so more or less individually and lack the leverage that larger groups, like the Somalis, do.

Finding 4: *Private organizations, like the CTP and CCID, successfully complement city initiatives in the CBD; it would be a challenge similar organizations to form in Bellville*

The CTP is a great resource for the CBD in Cape Town. They have a vision for the city and want street trading to be better managed. Through its operational arm, the CCID, the CTP successfully provides services, such as security and sanitation for the CBD. The CTP and CCID are mostly funded by formal businesses in the CBD. All citizens, including street traders and visitors, to the CBD benefit from the services provided by the CCID. Informal street trading in Bellville shows signs of being less developed than in the CBD. Part of the reason for this could be that Bellville lacks these types of services. Whether or not a CTP-like organization is a viable option for Bellville is uncertain. Formal businesses in the CBD are, *inter alia*, multi-national corporations and franchises, while in Bellville they are almost all independently owned and operated. As a result, both the ability and willingness to pay are much higher in the CBD than in Bellville. This decreases the feasible that an organization like the CTP could be created and maintained in Bellville.

Finding 5: *The process of designing trading plans for a market is well documented, though there seems to be limited cooperation between the City Government and prospective/existing traders*

When the planning process takes place for new bays or when existing bays are reorganized, this process is well documented. Even though this is the case, not a lot of consultation takes place with the traders. This is different from what the regulatory regime, namely the By-Law, expects. One consequence of this is that sometimes certain trading bays are created in commercially unattractive areas that lack pedestrian traffic. Traders will not accept these bays and then they just sit there empty. The City Government seems unable and/or unwilling to create more trading bays within popular locations, so traders that do not accept these bays will either trade illegally or not at all.

Finding 6: *Although perceived as constraining by some actors, the permit system enables the City Government to regulate public space and helps them to ensure product diversity in markets*

To obtain a permit an applicant submits an application form and all the supporting documents to the City Official in charge of a particular market. The application form

collects information relating to personal information, their history of trading and the goods they intend to trade. In order to apply for a permit, an applicant needs to be either a South African citizen, a refugee or have a work permit. When no bay is available in a given market a waiting list is used. Permits are granted on an annual basis but permit fees are due monthly. Permits provide street traders with a trading bay, the right to sell designated goods and a certain number of rules, such as presence requirements and rules for having an assistant. The permit system successfully organizes public spaces where there are street trading markets. In taking on ownership of the Green Market, the City Government reduced the number of trading bays from about 300 to 200 using the permit system. This made bays more accessible to customers and the area less crowded. The City Government, in co-ordination with market committees, also use permits as a mechanism to ensure that different types of goods are sold within a given market. The drawback is that the achievements of the permit system can be perceived as constraining. It limits who can trade; traders that do not get a permit find this unfair. Traders that have one find that the process to add or change the type of goods they sell is too onerous.

Finding 7: *Enforcement of street trading regulations is ambiguous and its effectiveness is debatable*

There are several authorities tasked with enforcing street trading regulations, namely metro police, law enforcement and traffic officials.¹⁹ Traffic officials, which have jurisdiction to move traders who disrupt traffic, are empowered by the *Business Act* of 1991. In addition to having the powers of traffic officials, local law enforcement is empowered by the By-Law and can, *inter alia*, enforce street trading permits and confiscate goods. These officers are most often involved in the enforcement of street trading. Metro police have both the powers of traffic officials and law enforcement officers to deal with issues of street trading, although they do not often exercise these powers. At least in the CBD, in addition to the authorities directly involved in enforcing street trading regulations, there is the CCID which is mandated to ensure the health and security of the area. To meet these objectives, they can manage and enforce against the traders if they are in violation of CCID standards. Although they are not empowered directly by the street trading legislative regime, they can be considered *de facto* enforcers. Their ongoing presence is an effective enforcement mechanism. A CCID presence in the Bellville market could achieve the same result. The enforcement of street trading is ambiguous. Authorities have unlimited discretion when it comes to taking action and sometimes they choose not to enforce the regulations. A good example of this is in Bellville where a number of traders along the main street trade illegally, in plain view of law enforcement. Action is not taken because law enforcement officers find it is not worth it as these traders just return the next day. Enforcement of street trading is a daily effort. It is, in the words of one law enforcement officer, “never-ending”. The City Government acknowledges that the current number of law enforcement officers (60) is not close to the minimum number required (80) for daily coverage of the city. This lack of resources is visible in Bellville and it appears to have impacted negatively at least on the perception of enforcement.

Finding 8: *Regulation, in particular the permit system, has given rise to a black market economy and other illegal activity*

Pursuant to section 9 of the By-Law, traders can transfer permits to other individuals in case of illness, maternity leave and death. According to the law enforcement and

City Government, this provision is exploited along with the sale of permits outright, which is also illegal. The ability to transfer and sell permits means prospective traders can get a permit without going through the formal application process. Illegal migrants who do not have a work permit or refugee status benefit from this, in particular, because they would not be able to get a permit otherwise. Traders who want more than one permit also use this method. Having more than one permit, which is prohibited by law, allows traders to operate more than one bay and sell a wider variety of goods. This means that they can potentially make more revenue for the same amount of work. Those transferring or selling the permits have incentive to do so because can make a profit by charging more than the base cost of the permit. In addition to the transfer and sale of permits, law enforcement also confirms that a number of permits are foraged. This further compounds the problem of permit enforcement. As soon as an activity is regulated, a distinction is made between what is legal and illegal. Illegal trading and the trading of non-designated goods arise as a result of regulation. First, the City Government and law enforcement maintain that traders trade illegally because it is in their interests to do so. This is often the case for traders that apply for a permit and do not get one. Despite the City Government offering permits for alternative bays, these traders instead choose to trade illegally because the location of these alternative bays is less profitable. Second, some traders also trade goods outside what their permit designates. This is comparatively less common because it can impact negatively on the traders who are designated to trade these goods. These other traders will react accordingly and inform appropriate authorities. In other words, a high degree of self-regulation amongst the trading community often prevents the sale of non-designated goods from happening.

Conclusion

In investigating how the situation of street traders in Cape Town and the constraints they encounter on a daily basis interact with the legislative regime that regulates street trading, there are a number of different findings. Some are positive. In broad terms, the legislative regime that regulates street trading is practical, having some clear merits in certain areas, such as public space management, permit administration and, arguably, the enforcement of permits. In contrast, there are some other aspects of street trading that the regulatory regime struggles to tackle. This includes issues, such as market committees, corruption and to a less extent, the consultation process around trading plans. Certain initiatives help the regulation of street trading. When the efforts of the City Government to improve communities and manage street trading better are supplemented by private organizations like the CTP and CCID, markets and the traders within them benefit. Traders in the CBD acknowledge this. There are more sensitive initiatives that could help that are not really pursued, such as adopting a structured informal-to-formal business process for traders and addressing the ethnic conflict between traders. Some actors believe there is value in them, but there is still the reality to consider of whether or not the support is there and if they will work.

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The vicious cycle of constraints: Foreign informal street traders in Johannesburg and Tshwane, South Africa

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Abstract: Informal street trading fulfils an important role in South Africa's economy. Nowhere is the importance of informal street trading more pronounced than in the daily lives of foreigners who moved to cities in South Africa in search of better living conditions. This article explores the constraints faced by foreign informal street traders who trade in the central business districts of Johannesburg and Tshwane, South Africa. Results indicate that foreign respondents experience relatively harsh conditions while trading informally on the streets, which most probably relate to their illegal status in the country. Their illegal status makes it very difficult for respondents to obtain sufficient financial support to keep their businesses afloat, which has a ripple effect on their ability to maintain adequate stock levels and maintain proper operational infrastructure, including stall structures and furniture; which in turn exposes them to a very competitive formal and informal market economy. Respondents are thus caught in a poverty trap, which demonstrates their survivalist mind set as they struggle to make a living in a foreign country. The article concludes with policy implications.

Introduction

Debates about the definition of the informal economy have evolved from a very narrow to a broad definition of informal economic activities. The way in which it is defined is largely based on the criteria or approaches that are used in its explanation (Dewar, 2005). Two of the most well-known approaches to defining the informal economy include the definitional approach, which defines the informal economy as unrecorded economic activities, and the behavioural approach that defines the informal economy by means of behavioural characteristics or the economic activities that are participated in (Flemming, *et al.*, 2000). According to Fleming, *et al.*, (2000) these approaches divide the informal economy into a criminal, irregular, household and informal sector component. The criminal component deals with the illegal manufacturing and selling of goods and services; the irregular component refers to goods and services that are produced legally, but evade legal reporting requirements (tax evasions); the household sector is defined as household production, while the informal sector is defined as economic activities that bypass the costs and are excluded from the benefits of law, such as unregulated microenterprises. Statistics South Africa defines informal employment as work by people "who are in precarious employment situations, who are not entitled to basic benefits such as pension or medical aid contributions from their employers, who do not have a written contract of employment and are not registered for either income tax nor value-added tax" (Statistics South Africa, 2011, p. xvii). In this article, the terms 'informal trader', 'informal employment' or 'informal business' refers only to those people who conduct informal street trading on a small scale, mostly operating from street pavements, selling generally rudimentary products, and/or providing basic services.

South African informal trading was subjected to strict government regulation and restrictions during the apartheid years. The sophisticated and oppressive anti-street

trading legislation and policies that were implemented to regulate and restrict informal economic activities in certain areas were related to the influx of people of colour into South African cities, which was tolerated only to serve the economic needs of whites (Maylam, 1995). People of colour were thus seen as temporary city dwellers and their subsequent participation in informal trading would result in the payment of excessive fines and the confiscation of goods, amongst other things (Skinner, 2008). Pro-informal trading legislation and policies have been implemented since the fall of apartheid. The Business Act (1991) and Amended Business Act (1993), amongst others, and informal trading bylaws are utilised to deregulate informal business activities by removing some of the barriers to informal trading and allowing municipalities to designate restricted and prohibited trading zones (Skinner, 2008). Two other policies that came into effect in 1994 and 1996 was the Reconstruction and Development Programme (RDP) and Growth, Employment and Redistribution (GEAR) strategy, respectively. The RDP was supposed to address underdevelopment through a basic needs-based approach to development, while GEAR functioned as a micro- and macro-economic strategy to achieve faster economic growth for the country, which was believed to ultimately trickle down to the masses (Habib and Padayachee, 2000; Willemse, 2013).

Together these pieces of legislation and policies helped to change the legal situation of informal traders from being disregarded as an economic entity and being seen as a nuisance, to being allowed to trade freely with a few exceptions (Skinner, 1999). Consequently, it is not surprising that informal trading numbers increased significantly over the last few years. With the opening up of the South African borders and the increased acceptance of the democratic change that was about to occur, the informal economy has also been providing employment opportunities to foreigners since the early 1990's (Andersson, 2006; Hunter and Skinner, 2003). Despite the aforementioned, the constraints experienced by foreign informal traders remain relatively unexplored in South Africa. This article thus tries to add to this gap in the knowledge by investigating the constraints experienced by foreign informal traders in the central business districts (CBDs) of Johannesburg and Tshwane.

Operating an informal trading business in a foreign country: Perspectives from the literature

Globalisation denotes an ever-increasing connection and interdependence of social and economic systems, where global citizens live their lives at the intersection of the local and global. Migrants, more specifically foreigners who migrate in order to participate in informal trade, can be viewed as global citizens because they move in and between different contexts through the interconnectedness of social and spatial networks, informal activities and livelihood strategies. Foreign informal traders thus have the ability to simultaneously think beyond their home nation and global world arena, allowing them to keep one foot in their country of origin and another in the country of settlement. Maintaining this balance between rooted and worldly cosmopolitanism is strategic, and thus temporary, arising out of a need to make a living in an unfamiliar, insecure, and often hostile foreign informal trading environment (Kothari, 2008; Pauw and Petrus, 2003; Willemse, 2013).

The legal framework of foreign informal traders

Migrating to a foreign country in order to make a living for oneself is not an easy decision, as is indicated by one respondent in the work of DeLuca (2012, p. 42), the

“choice to leave one’s home country is often well thought out and a result of a lot of stressful decisions. It is a complicated process, fraught with uncertainties and anxieties. Will I make it? Where will I live? Will I be deported? Will I ever be able to return home again?” Foreign informal traders often lead complex and stressful lives by expressing an overall fear of deportation, criminalisation and discrimination when entering foreign countries. These fears are linked to whether they are able to obtain citizenship, visitors visas or asylum seeker permits, which directly influences their ability to obtain informal trading permits (Hunter and Skinner 2003; Peberdy and Rogerson, 2000; Willemse, 2013). Without informal trading permits, foreign informal traders remain in ambiguous positions as they are powerless to negotiate with local governments to improve their informal trading conditions. They are also subjected to xenophobic attacks because locals feel that foreigners’ participation in informal trade is taking income-generating and job opportunities away from them (Pauw and Petrus, 2003). Police brutality is also highlighted by one respondent in a study by Andersson (2006, p. 387) who stated that “the South African police were known to beat you when you were captured (illegally in the country)”.

Operational concerns of foreign informal traders

Foreign informal traders face a few constraints while trading on the streets; all of which results from economic hindrances to maintain informal businesses. Financing informal businesses is difficult when considering their illegal status, which makes it impossible to obtain financial assistance from government or development institutions and banks. Consequently, many are living day by day, because the profits and expenses made from informal trading normally balance out (Lazaridis and Koumandraki, 2003; Williams and Balaz, 2005). The lack of finances to maintain informal businesses also directly influences the operating environment of foreign informal traders. Although limited research has been conducted about the costs associated with transportation and storage facilities in terms of foreign informal traders, general research indicates that infrastructure (transportation and storage facility costs and business spaces) are major concerns for informal traders (Kusakabe, 2010; Ngiba, *et al.*, 2009). Most informal traders lack private transportation, and instead mostly make use of public transport (taxis, buses or trains), but some even walk to their stalls, because they cannot afford public transport (Kumar and Bhowmik, 2010).

A lack of proper inexpensive transportation directly influences the storage facilities informal traders use to store their merchandise and the amount of stock they can maintain (especially if they live far from their trading stalls). Some traders may use taxis or trolleys to transport their merchandise, while others pay exorbitant storage facility fees (Skinner, 2008). The lack of appropriate storage facilities is indicative of the type of business premises being used. Foreign informal trading markets often appear very disorganised and cluttered from the outside. Stoller (2002) indicates that the opposite seems to be the case, whereby markets are often organised informally to ensure that members of the same ethnic group or country occupy contiguous spaces and sell the same kind of merchandise. However, inside these markets the real problem with business premises is revealed, because most foreign informal traders only operate from provisional stalls that they transport to the market every day which consists of chairs, tables, cardboard stands, suitcases, and wooden boards and carts, alternatively products are held in their outstretched hands (Bass, 2000; Donovan, 2008; Stoller, 2002).

Research thus shows that foreign informal traders face many multidimensional obstacles on the streets. Chukuezi (2010, p. 136) summarises the need for improved informal trading policies very well: the future of the urban economy “lies in consciously strengthening the (informal economy), particularly through modernising its management modes and techniques. More than ever, policymakers in developing countries are recognising the vital role of the informal (economy) as a mainspring of vitality and diversity in the urban economy; as a leading provider of jobs for first-time job seekers, low-skill workers and migrants; as a proving ground for entrepreneurial talent and as a source (to develop skills). (It is important) to start providing (the informal economy) with (the) necessary support...by mapping out ways and means of enhancing the growth prospects of this (economy) within the context of the national planning effort”.

Methodology

The aim of this study was to investigate the constraints faced by foreign informal street traders who operate in the CBDs of Johannesburg and Tshwane in South Africa. Overall, 128 respondents were interviewed in the two cities, with the sample being drawn from consultations with the municipalities about the total number of street traders, and a verification of these numbers by means of direct observations. The questionnaire consisted of eight sections including informal businesses’ demographic profile, product profile, general business profile, economic profile, physical characteristics, operating characteristics, relationship with other businesses and the perceptions of the surroundings. Cross-tabulations were conducted in the Statistical Package for the Social Sciences (SPSS).

Problems faced by foreign informal street traders

A brief demographic sketch of respondents (Table 1) indicates that the majority are young males with relatively low levels of education and they have many dependents to support. The average number of dependents in Tshwane is four or more, while Johannesburg’s respondents mostly support only two dependents. The majority of respondents migrated from Sub-Saharan African countries, followed by South American, Asian and Eastern European countries. Few foreign traders in this study are from Western European or American descent, and overall 61% do not have South African citizenship. The aforementioned can significantly influence their ability to trade legally in the country and the challenges they experience while trading informally on the streets of Johannesburg and Tshwane.

Foreign respondents encounter a range of interrelated challenges while trading informally on the streets (Table 2). Their main struggle is economic in nature, because a quarter of respondents experience significant cash flow problems with a further 9% indicating that they have insufficient funds to support start up and expansion of their businesses (Table 2). An interesting difference in percentages is also observed between Johannesburg and Tshwane in terms of their financial situation. Overall, 28% of Tshwane’s respondents indicate that they experience significant cash flow problems, with a further 13% indicating they do not have access to financial sources, compared to only 23% of Johannesburg’s respondents that have problems with cash flow, and only 7% who do not have access to financial support (Table 2). The aforementioned is due to the fact that Johannesburg demonstrates a stronger financial and retail market economy than Tshwane,

resulting in a greater purchasing power for the citizens, and ultimately a higher standard of living in Johannesburg (Willemse, 2013).

Table 1: The demographic profile of respondents

Demographic profile of respondents	Johannesburg	Tshwane	Total
Citizenship			
South African	35%	44%	39%
Non-South African	65%	56%	61%
Gender			
Male	66%	62%	64%
Female	34%	38%	36%
Age			
18 - 30 years old	51%	58%	54%
31 - 50 years old	45%	37%	41%
Over 50 years old	4%	6%	5%
Dependents			
None	20%	10%	15%
One	6%	10%	7%
Two	30%	19%	25%
Three	27%	29%	28%
Four or more	18%	33%	24%
Education			
None	9%	6%	8%
Primary	25%	22%	24%
Some secondary	33%	29%	31%
Completed secondary	25%	33%	29%
Tertiary	8%	10%	9%

Respondents generally do not approach a government or development institution or a formal banking organisation for funds to start up and expand their businesses due to their illegal status in the country. The aforementioned is observed in the data whereby 59% of respondents make use of no banking facilities or only make use of informal banking opportunities. Not surprisingly, just over half of respondents only spent less than R500 to start their business, which equates to limited amounts of stock to trade with. Estimating profit levels is also extremely difficult, because respondents may fear keeping accurate records of profits and expenses due to their illegal status in the country, which could surmount to them being deported. In an effort to determine profit levels, the respondents were asked to indicate the number of customers they serve per day and the amounts of money customers spend per visit (Figures 1 and 2 respectively). Just over 41% serve between 11 and 20

customers per day that mostly spend between R11 and R50 per visit (40%), while 26% spend up to R100 per visit. Considering the expenses that respondents incur in operating these businesses such as purchasing new stock, the payment of employees (74% of respondents have one employee), and the money spent on transportation costs, it is not surprising to deduce that respondents make relatively small profits. It is also not surprising that 34% of respondents indicate that the availability of financial assistance is the most essential way in which their businesses can grow (Table 2).

Table 2: Problems experiences by foreign informal traders and the ways to resolve it

Problems faced by foreigners	Johannesburg	Tshwane	Total
Cash flow problems	23%	28%	25%
Insufficient structure/shelter	21%	4%	14%
Problems to maintain stock levels	12%	15%	13%
Unavailability of transport	7%	15%	10%
Unavailability of funding sources	7%	13%	9%
Competition from other informal businesses	11%	2%	7%
Insufficient infrastructure	7%	4%	5%
Insufficient service from suppliers	4%	6%	5%
Unavailability of equipment	1%	2%	2%
Location of business	1%	0%	1%
Other	5%	11%	8%
Ways to resolve the problems			
Availability of financial assistance	32%	36%	34%
Improvements to structure/shelter	29%	13%	23%
Ability to maintain sufficient stock	20%	17%	19%
Improved security	5%	11%	8%
Availability of better equipment	3%	6%	4%
Competitive pricing	1%	6%	3%
Availability of basic services	3%	2%	2%
Access to more affordable transport	3%	0%	2%
Basic management skills	1%	0%	1%
Other	3%	6%	4%

Note: Percentages do not total 100 due to multiple responses.

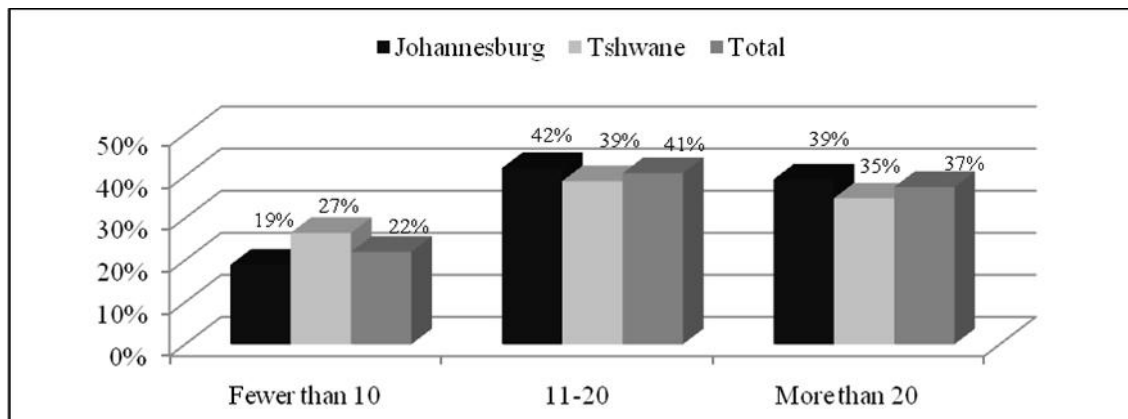


Figure 1: Number of customers served per day.

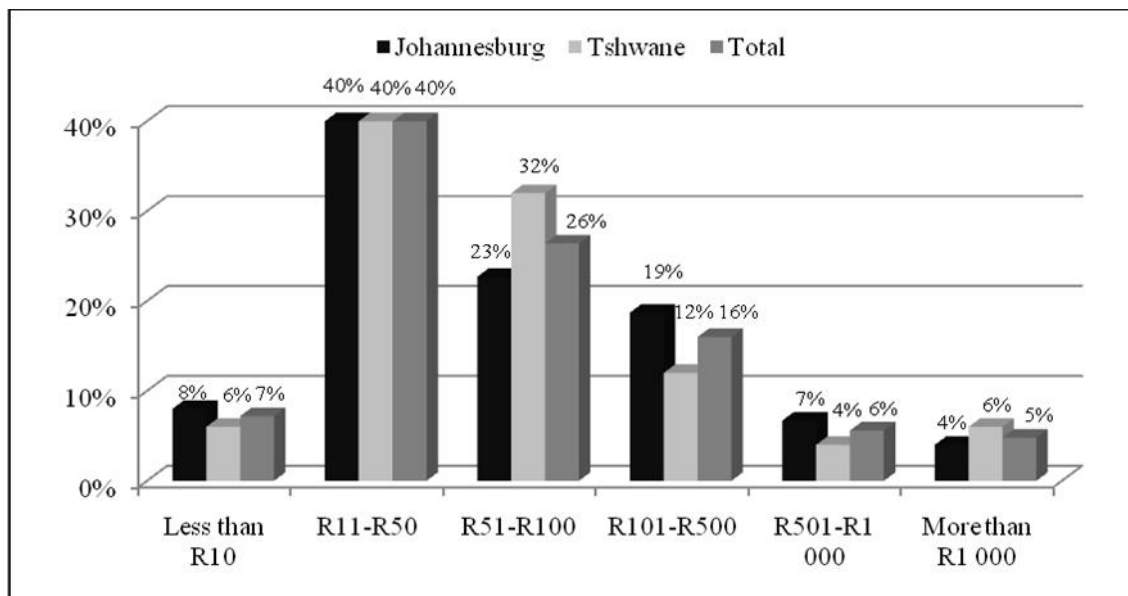


Figure 2: Amounts of money customers spend per visit

The second constraint is related to the cash flow problems that the respondents experience, which also significantly influence their ability to maintain sufficient stock levels (13%) (Table 2). Without sufficient funds to obtain adequate stock levels, respondents also find it extremely difficult to compete with other informal traders in the area. Respondents serve a limited number of customers per day and they all sell more or less similar products, which increases the competition between them, decreases the overall consumer demand and forces them to lower prices to attract customers, which leads to fluctuating and lower profit levels. Interestingly, although Tshwane's respondents experience slightly more problems with inadequate stock levels (15%), it is the respondents in Johannesburg that really suffer under the competition from other informal traders (11%). A possible explanation for the aforementioned is the fact that Johannesburg has a stronger financial and retail economy, thus resulting in increased competition between the formal and informal market economy (Willemse, 2013). Again, maintaining sufficient stock levels is an important way to improve 19% of respondents' businesses (Table 2).

The third constraint is a lack of sufficient operational infrastructure (14%), which is linked to the first and second constraints that respondents experience (Table 2). Operational infrastructure does not only include the stall structure and furniture used

while trading, but also storage facilities and transportation used to keep merchandise safe from theft. Noteworthy differences are observed between the results for Johannesburg and Pretoria. Overall, 21% of Johannesburg's respondents have problems with insufficient stall structures, compared to only 4% of Tshwane's respondents that have similar constraints (Table 2). The aforementioned is surprising since Johannesburg's informal trading policy prioritises stall infrastructural development based on the different types of informal trading markets that are provided, and Johannesburg operates with a smart card system that allows the municipality to monitor informal trading by monitoring the allocation and location of trading stalls and the issuing of permits (Willemse, 2013). These results could have been influenced by the fact that slightly more of Johannesburg's respondents do not have South African citizenship, which implies that more of them participate in informal trade illegally, and thus do not qualify for the abovementioned advantages.

The majority of respondents have only non-permanent trading structures that mostly consist of gazebos and umbrellas (Figure 3). Although slightly more of Tshwane's respondents trade from permanent trading structures, they also have the largest percentage of respondents operating from no trading structures at all (11%). The operating conditions appear even worse when considering the rudimentary furniture that respondents use to trade from, which mostly consists of tables, boxes, crates, and to a lesser extent ground sheets, sails and blankets that function as display platforms (Figure 4). Overall, 23% of respondents require drastic upgrades to their stalls and furniture to ensure proper, appropriately designed premises with fixed sheltered spaces to improve their businesses (Table 2).

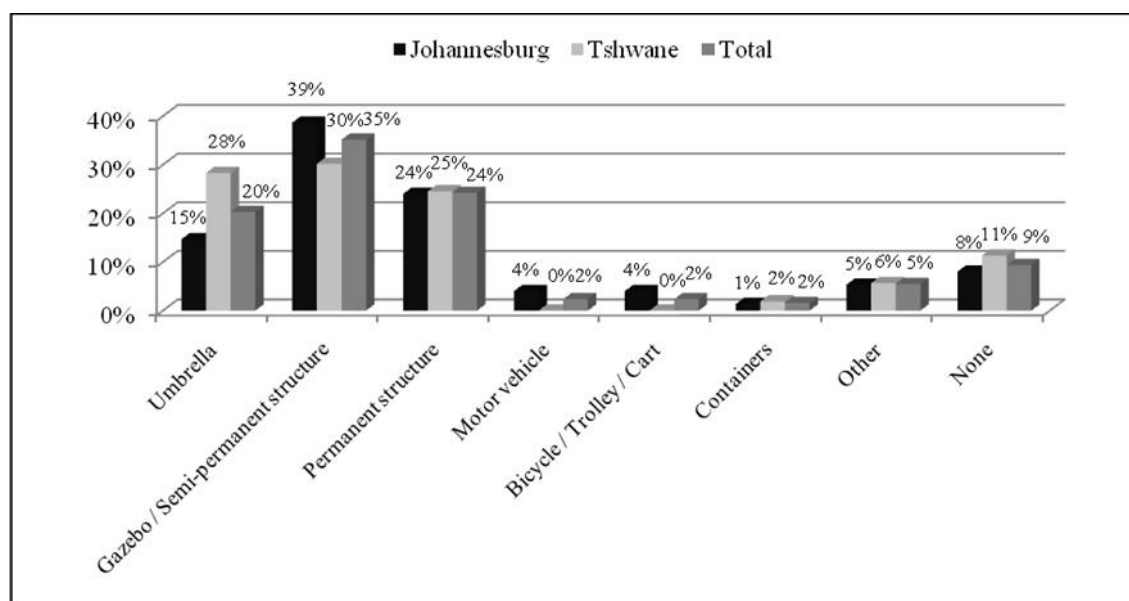


Figure 3: Shelters or structures used by foreign informal traders.

Without proper stall structures and furniture, respondents are forced to make use of storage facilities in an effort to keep their merchandise safe from theft (Figure 5). Most of the respondents (34%) store their merchandise on site with security. Almost double the percentage of respondents from Tshwane (34%) use storage facilities that are located relatively far from their trading locations, while Johannesburg's respondents are slightly more than three times more likely (23%) to store their merchandise in adjacent formal shops, which demonstrates an interesting link between the formal and informal economy that exists in Johannesburg. It is also

relatively popular to take the merchandise home. Overall, 8% of respondents require improvements to the security at their informal businesses, which could indicate that they do not want to make use of costly storage facilities, but rather store their merchandise on site with security (Table 2). The aforementioned findings imply that a significant percentage of respondents make use of transportation facilities to transport their merchandise either to the storage facilities, adjacent formal shops, or home. Figure 6 indicates that 48% of respondents transport their merchandise by carrying it or pushing it in trolleys. Public transport mostly in the form of taxis, but also buses and trains is also popular amongst 30% of respondents who convey their merchandise between their homes, trading stalls and storage facilities (if used). Surprisingly only 2% of respondents indicate that an improvement in transportation facilities will make a significant difference in their informal businesses (Table 2).

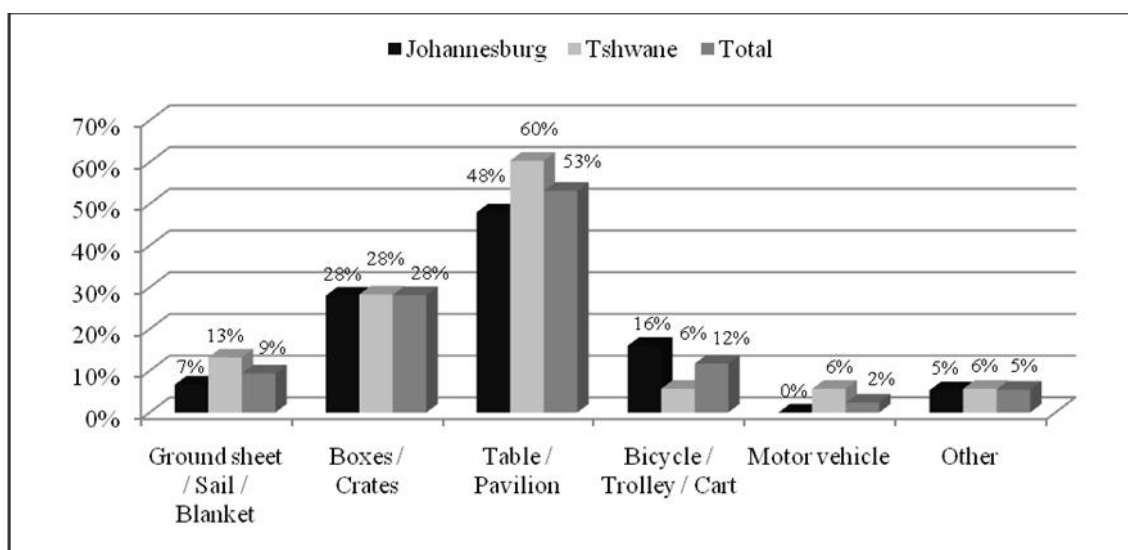


Figure 4: Furniture used by foreign informal traders.

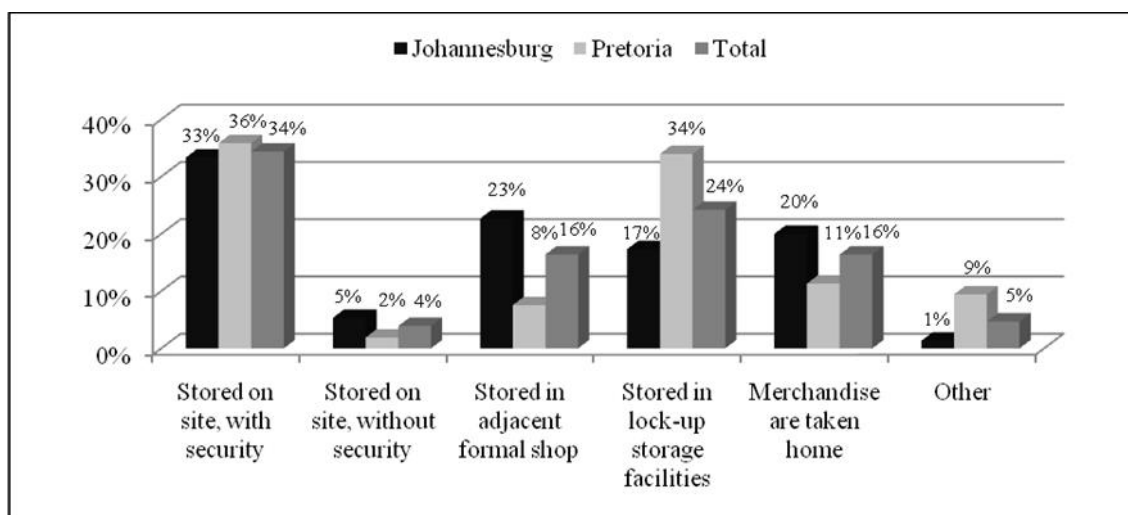


Figure 5: Storage facilities used for merchandise

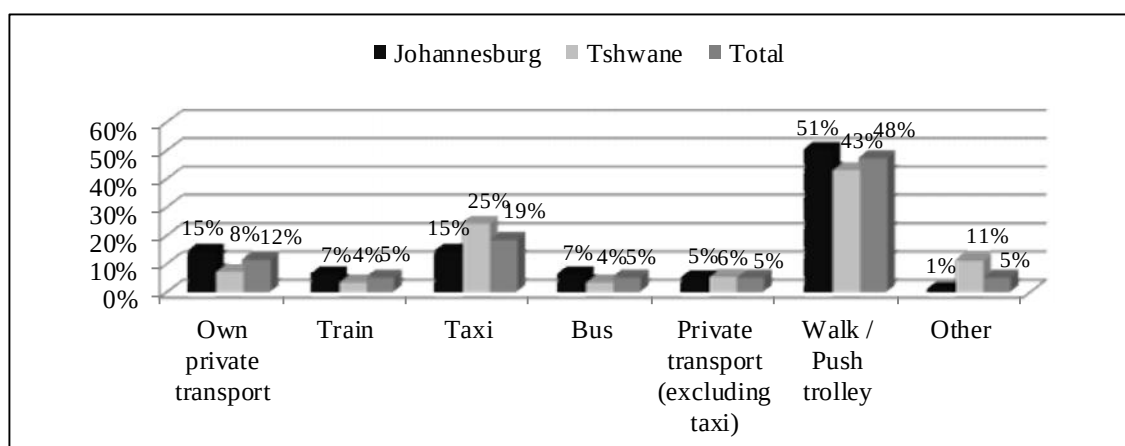


Figure 6: Methods used to transport merchandise

Conclusions and policy implications

Upon entering the country many foreigners are forced into the informal economy to make a living. Not surprisingly, they experience relatively diverse, dynamic, and constantly changing working conditions on the streets while trading informally. The constraints experienced by the respondents in the study forms a vicious cycle of poverty; they are unable to manage their businesses profitably and maintain sufficient stock levels due to the unavailability of finances, resulting in the inability to compete with other informal traders which ultimately results in lower profit levels. Although Johannesburg's respondents perform slightly better than Tshwane's respondents due to its stronger financial and retail economy, respondents in general are still caught in a survivalist mind set of being diligent entrepreneurs who struggle to make a living in a foreign informal economy, because it provides the only alternative to being extremely poor and unemployed in their home country. The South African government should follow a multidimensional response to find innovative ways to improve the working conditions of foreign informal traders in the country. Interdepartmental cooperation, a community participation approach and the inclusion of foreign informal traders into the existing informal trading policies will go a long way to monitor the number of informal traders, their locations and the economic activities they participate in, and ultimately improve their working conditions on the streets of South Africa.

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Small business and informal trader perceptions in South African metropolitan CBDs

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Abstract: An illustration of the different dimensions of business perceptions as well as the spatial distribution of perceptions of the formal and informal businesses in four South African city centers namely eThekweni, Johannesburg, Cape Town and Tshwane, follows. The aim of this paper is to highlight the differences and comparisons in perceptions between businesses as well as between the cities. The survey results from this study were grouped according to selected perception values identified by Lynch (1984), namely safety, access and control. Spatial analysis of the different perception categories also highlights the locational differences and comparisons in each city. Both formal and informal business in South African cities perceive their business environment mainly as positive but the survey results indicate clear differences in perceptions and these aspects can be identified and addressed by local authorities and city planners.

Introduction

City centres are mostly frequented by urban dwellers; reasons for this are vast and diverse and range from business and tourism to leisure activities. Each person experiences the city in a different way and through their senses, acquires a unique perception of the city. It is no different for businesses that operate in the city centre. Their perceptions of their own urban environments are the focus of this paper. To reflect on these perceptions is particularly significant as the attraction of inner city centres depends more on how people perceive it than on its actual attractiveness (Monheim, 1998, Bell, 1999, Weltevrede and Van Rietbergen, 2007, Teller, *et al.*, 2010). Thus, the perceptions that businesses have of the attractiveness of their inner city environment provide insight into the factors that are important to them in terms of their continued locational choice of inner city environments. More broadly, from a business perspective it provides spatially referenced data on the array of environmental and urban management factors that may contribute or detract from the attractiveness of particular inner city environments

In analysing business perceptions, this paper uses, as a framework for evaluating perceptions, the three of the five performance dimensions used by Lynch (1984) namely safety, access and control. Still within this framework, this paper considers variations on two main levels. Firstly, the spatial differentiation of perceptions is followed as a line of enquiry. In this regard, business perceptions are broadly segmented into results for both informal and formal businesses and used as a basis for comparison. Secondly, perceptions of businesses in four South African city centres namely eThekweni, Johannesburg, Cape Town and Tshwane are presented and the results are then disaggregated spatially within these city centres.

With the results and line of enquiry one could begin to better understand the diversity of perceptions amongst businesses in selected South African city centres and the patterns and trends that emerge from the research can contribute to a nuanced

perspective on the challenges relating to business environments between and within these Cities.

Overview of informal and business perceptions and their environment

People perceive and experience their environment in a unique way through their senses and also by an understanding or recognition of the aspects in the environment (Allport, 1955). Wood (1970) refers to J. K. Wright, an American geographer, who in 1946 proposed a discipline of 'geosophy' which would be the foundation on which the development of perception and behavioural geography would be based (Keighren, 2005). However, it was not until several different types of geographical studies pointed to the need for a consideration of man's view of his environment that the idea of a perception approach became more widely used. The research in this paper will focus mainly on the field of perceptions in urban studies where the classic works of Kevin Lynch namely *The Image of the City* (1960) and *Good City Form* (1984) will be used as a point of reference to analyse the data.

In any city there are certain pull factors that entice both formal and informal business to locate there, part of which would be the experience and vibrancy of the city, but business operate mainly out of an economic perspective and what make sense to them from an economic point of view. Porter (2011) argues that there are four advantages that contribute to inner city benefits for business, first it is a strategic location, secondly the areas possess local market demand, thirdly the possibilities of integration with the regional job clusters exist and fourthly there is an industrious labour force that is eager to work. Similar to the formal business, research indicates that a precondition for the informal sector to thrive is a vibrant local market (Dewar, 2009, Geyer, *et al.*, 2011).

Street vendors, formal businesses and the authorities have been in conflict over space and function of space for decades. Formal businesses require that the city and the business environment be clean, accessible, legible and modern, the authorities need the economy of the city to grow and thrive and as a result need to manage, maintain and develop the city. Whether in the developing or the developed world street traders were also perceived as being part of the so called 'crime and grime' s it is believed that they contributed to driving people such as tourists and business away from the CBD (Skinner, 1999, Middleton, 2003). On the other side of the coin the vibrant, colourful, and busy exterior of the street vendor is one of the most striking features of African and other cities of the developing world and apart from being an attraction this vibrant trading nature also provides many potentially unemployed citizens with a means to an income and a job to do.

Changes in South African CBDs seem to have escalated significantly since 1994. These changes are ascribed by many to the in-migration of expectant South Africans and African citizens to potentially find a job and earn a better living (Rogerson, 1996, Skinner, 1999). According to Skinner (1999) each city dealt with changes to their inner city in a different way. For example, eThekweni was regarded by many as the success story where funds were secured by the Government and major infrastructure development took place where they saw fit. Johannesburg appeared to be less organised and more restricted with regards to funding; they therefore had pockets of managed trade spaces and areas where trade spaces still had to be developed. Tshwane was very regulated and worked through an established informal trading organisation. It appears that Cape Town was better organised with regards to their

informal traders in the CBD area as they were trading from many established markets with a lucrative tourist trade. (Skinner, 1999).

Many South African studies on the impact of informal trade on the economy and the city space had been done (Skinner, 2000; Lighthelm, 2004; du Plessis, *et al.*, 2011), however only a limited number of studies were done from the point of view of the informal trader, thus their perceptions of the trading areas with regards to safety, accessibility and how well these fit their needs, are mostly overlooked. It is important that local authorities and managers of inner city areas are made aware of the way formal and informal businesses perceive and organise their environment (Porter, 2011).

The focus of this study is on the general perceptions of the CBD trading environment through the eyes of the informal traders and formal business. To achieve this, the perception results from the survey have been categorised based on the performance dimensions identified through work done by Lynch (1984). In the first place the similarities and differences in perceptions between the informal traders and formal businesses in the CBD areas of the four cities are discussed. Secondly, cross city comparisons with regards to perceptions in the different categories used by Lynch, namely safety, access and control are done. Finally a spatial distribution of the different perceptual categories for the informal traders for each city is done.

Methodology

The methodology focus firstly on the categories Lynch used to classify different performance dimensions of an environment. The survey results for this study will be grouped according to the perception values identified by Lynch. Secondly a discussion of the compilation of the survey questionnaire, the sampling method and the data analysis.

The informal traders that were interviewed for this survey were largely retailers operating from official trading spaces but not exclusively so in four city centres in South Africa. Data was obtained through a questionnaire survey amongst a sample of 20% of informal business owners and operators in each area. The questionnaire included a range of variables listed in table 1.

The formal small businesses that were surveyed were mainly selected in the same areas where the survey of the informal businesses were done. A total of 50 small businesses were selected for each city within the CBD area. Similarly to the informal trader questionnaire the variables are listed in table 1.

The replies to the main questions analysed in the paper were vast and covered a variety of aspects ranging from litter and odours through hard and soft landscaping to traffic and crime. These aspects were grouped into three of Lynch's categories namely: safety, access and control (Table 1).

Maps were generated with ESRI ArcGIS10.1 and in order for the perception indicators to be calculated and measured on a common scale before it can be combined into an index the data was normalised using linear scaling (Equation 1). This method was chosen since there was no need to accommodate outliers and the main advantage is that it normalises values to a range between 0 and 1 or as is the case in this research 0 and 100.

Equation 1

$$X_i = \frac{R_i - R_{min}}{(R_{max} - R_{min})} \times m$$

Where: X_i is the standardised score; R_i is the raw score; R_{min} represents the minimum score; R_{max} is the maximum score; and m is an arbitrary multiplier representing the upper standardised range value.

The following sections provide information, comparisons and discussions on the results from the data analysis.

Table 1: Indication of survey factors categorised based on Lynch's five performance dimensions

Lynch's performance dimensions	Survey factors
Safety	Crime Visibility of security cameras Presence/condition of street lights
Access	Visibility/presence/condition of street names Presence/condition of street lights Facade of buildings and signage Parking
Control	All factors above and below Odours (i.e. urine) Litter Cleanliness Noise Crowding Traffic Taxis Conditions of hard landscaping (e.g. paving) Soft landscaping (e.g. trees, plants) Conditions of sidewalks Visibility/presence/condition of street names Maintenance of buildings Upgrading/new developments Graffiti Refuse removal Sewerage Storm water drainage

Analysis of the informal and formal perceptions for each city

The different categories of perceptions do not all have the same impact or are equally important to people (Lynch, 1960). Proof of this statement by Lynch can be seen in the discussion of the survey results and the comparison between the perceptions of informal and formal businesses and in the comparison between cities.

Safety related perceptions

The aspects of crime, visibility of security cameras and the presence or condition of street lights were used to calculate the safety perception for both the formal and informal surveys. Results from the informal trader survey indicate that in all four cities the majority of respondents have a positive perception of safety in the CBD (Table 2).

Table 2: Informal trader categories of perceptions across the four cities

	City	Positive	Negative	Neutral
Safety				
	eThekweni	38%	29%	33%
	Johannesburg	74%	25%	1%
	Cape Town	66%	13%	21%
	Tshwane	67%	19%	13%
Access				
	eThekweni	38%	17%	45%
	Johannesburg	84%	15%	1%
	Cape Town	66%	8%	26%
	Tshwane	81%	8%	11%
Control				
	eThekweni	36%	21%	43%
	Johannesburg	71%	26%	3%
	Cape Town	60%	14%	26%
	Tshwane	68%	15%	17%

The trend in the formal sector seems to differ from the informal sector in eThekweni where the safety perception in the CBD is negative (46%) (Table 3). In Johannesburg, Cape Town and Tshwane, formal businesses have a positive perception of safety (84%, 57% and 63% respectively). Looking at the sub-aspect of crime 75% of the formal business respondents in eThekweni had a negative perception of crime in their area where the other cities were positive. Johannesburg seems to be the city with the highest safety perspective in the CBD for both formal and informal businesses.

The spatial distribution of the overall value of safety in eThekweni (Map A and B) and Johannesburg (Map C and D) is indicated on the maps in Figure 2. The very light grey on the maps indicate a highly positive perception on all the safety aspects and the dark grey a highly negative perception.

The two aspects that contributed most to the higher negative safety perception in eThekweni are the lack of security cameras and high incidences of crime. It seems from the data that most of the cities have managed, through safety awareness programmes and other initiatives, to turn the negative perception with regards to

crime around. It is mainly in eThekweni where there is still quite a negative perception on crime especially in the western side of the CBD.

Table 3: Formal trader perceptions

	City	Positive	Negative	Neutral	No Response
Safety					
	eThekweni	36%	46%	14%	5%
	Johannesburg	84%	13%	3%	1%
	Cape Town	57%	21%	19%	3%
	Tshwane	63%	23%	10%	3%
Access					
	eThekweni	40%	36%	23%	1%
	Johannesburg	85%	10%	2%	2%
	Cape Town	63%	20%	15%	2%
	Tshwane	76%	10%	11%	3%
Control					
	eThekweni	29%	40%	28%	2%
	Johannesburg	78%	16%	3%	3%
	Cape Town	55%	17%	25%	3%
	Tshwane	64%	18%	16%	2%

Perceptions of access to business environment

In this research the accessibility aspect refers to peoples' perception of their experience and ease of access to facilities they need aspects such as clearly marked road and building names and numbers. The survey factors used to calculate accessibility can be seen in table 1.

In general, informal traders seem to be positive in three of the four cities with regards to gaining access to the CBD and navigating their way to their destinations (Table 1). This positive attitude might stem from the fact that both the traders and their clients are not relying on parking or street names to get to their businesses. In eThekweni there is however a higher neutral component (45%) which could relate to the fact that the operation of their business does not rely on these access factors.

On the formal business side however the research revealed a very strong positive experience from formal businesses in Johannesburg (85%), Tshwane (76%) and Cape Town (63%) and a lower positive perception of 40% in eThekweni (Table 2). The reasons for eThekweni having a higher negative experience on access compared to the other cities could stem from the inclusion of parking as a survey factor since formal business in eThekweni had a negative perception (59%) on parking. Parking also seems to be a bigger challenge in Cape Town (43%) compared to Johannesburg (4%) and Tshwane (17%) respectively. eThekweni businesses also

experience the visibility, presence and condition of street names as a bigger problem than their counterparts in Johannesburg, Cape Town and Tshwane.

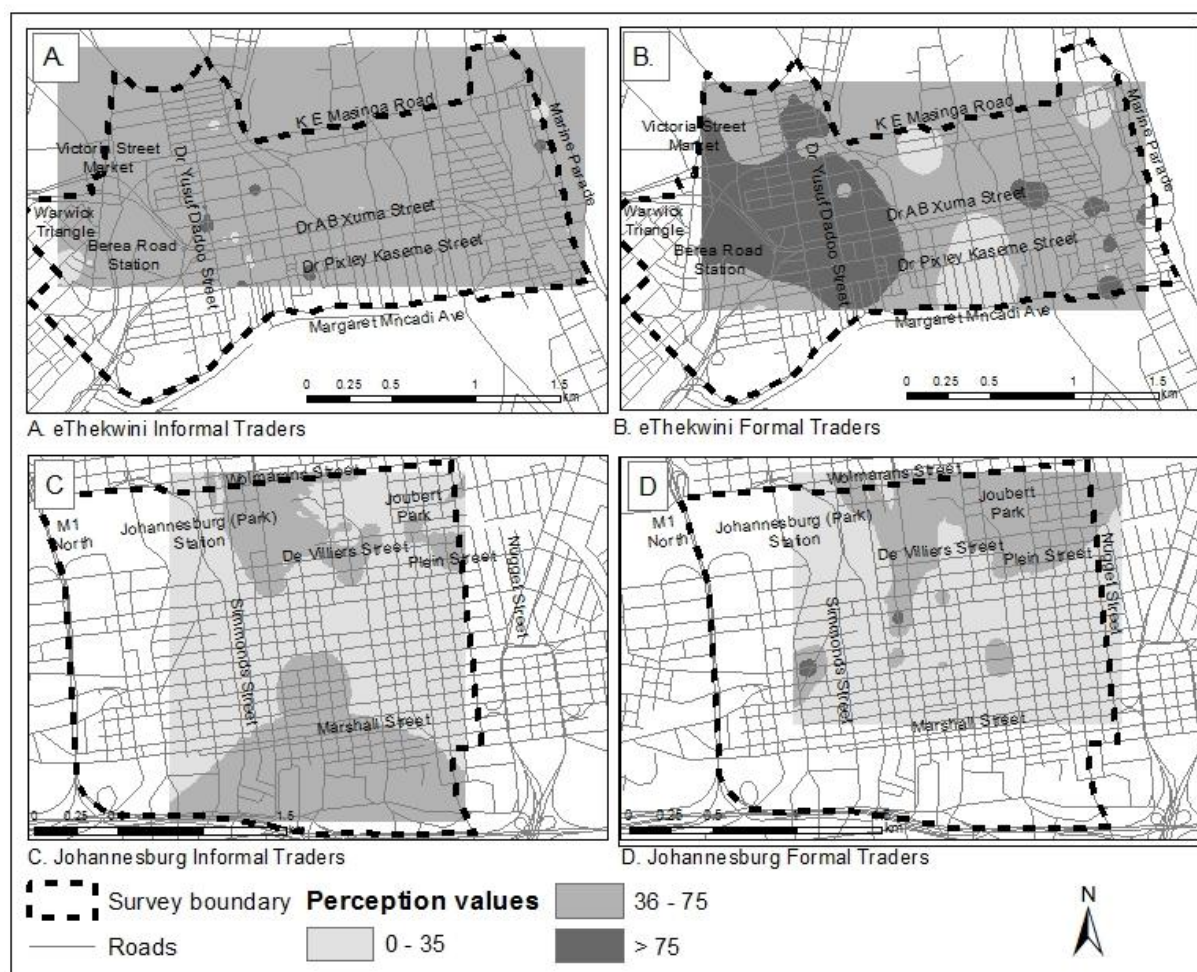


Figure 1: Business perceptions of safety in eThekweni and Johannesburg

When analysing the spatial distribution of access in the cities, Cape Town CBD is perceived to be quite accessible by formal and informal businesses with pockets of negative perceptions in the south west of the CBD. This could be attributed to the fact that this area is on the fringe of the CBD where parking might be limited. In eThekweni and Johannesburg the informal traders seem to have a more positive perception on access than formal business. This could be due to the fact that they and their clients rely less on individual factors such as signage and street names to gain access to their business locations.

Perceptions of control for business in their trading environment

The last value of control includes all the perception aspects, in the case of the research it will be all the factors listed in Table 1. A low overall value for the control aspect would indicate an overall feeling of helplessness with regards to the perception of the environment. In the case of this study a high negative value in the city illustrated by a deep red colour on the map, will indicate to an overall perception of helplessness felt by the particular respondents.

In the case of the informal businesses three of the four cities had a positive outcome with regard to their perception of all the values measured in their city (Table 2)

namely Johannesburg 71%, Tshwane 68% and Cape Town 60%. This indicates a feeling of control with regards to the immediate trading and business environments of the respective cities. It was only in eThekweni that the majority of respondents felt neutral (43%) with regard to the overall perceptions measured.

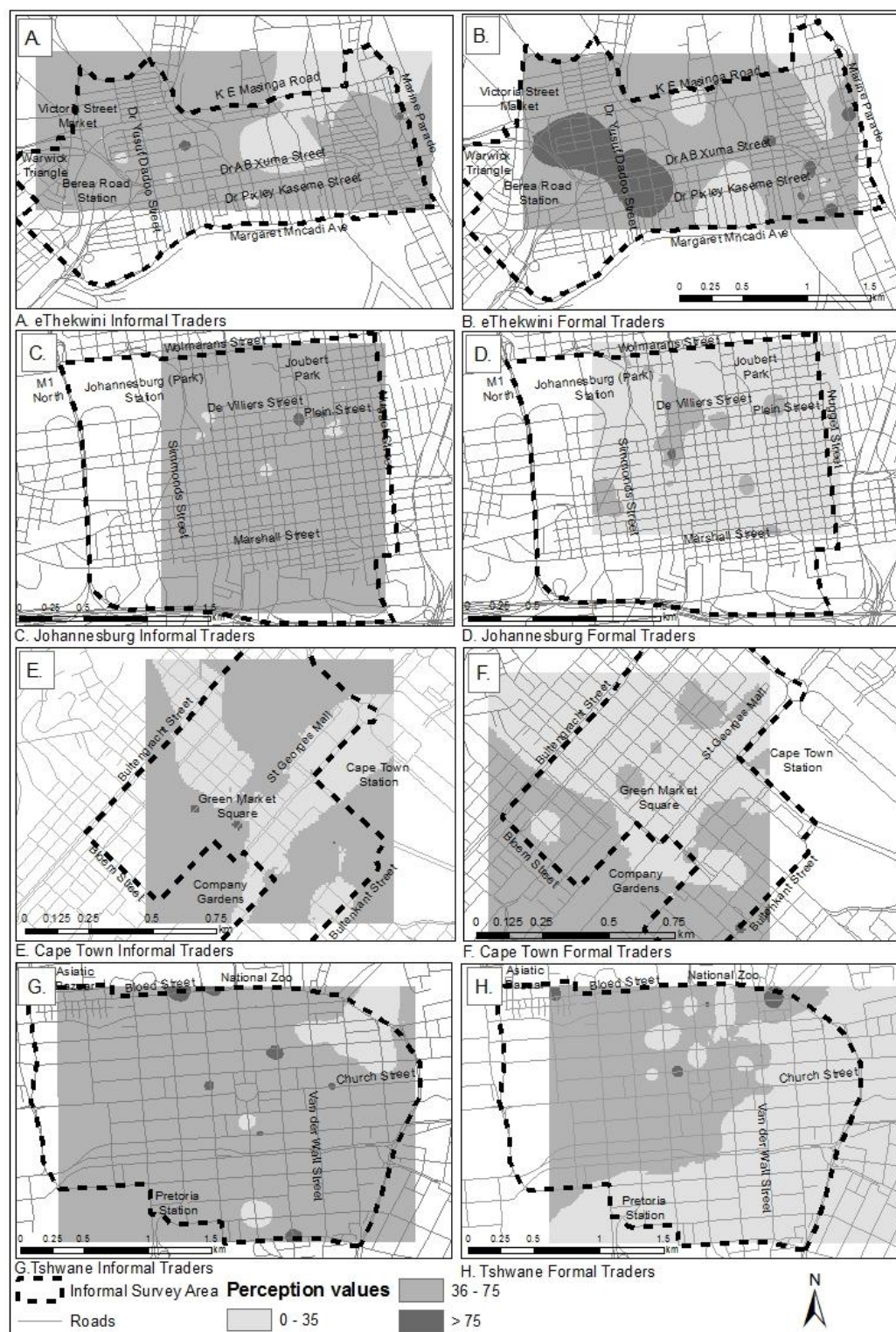


Figure 2: Business perception of control in all four cities.

The formal businesses displayed a similar trend where Johannesburg (78%), Tshwane (64%) and Cape Town (55%) are very positive in terms of the overall perceptions measured (Table 3). The difference is again indicated in eThekweni where the overall perception of formal businesses in the CBD is negative (40%).

In the case of the overall perception where all the aspects were taken into consideration the maps for both informal traders and formal businesses for each city are included (Figure 4). When looking at the spatial distribution of the perception on control, the deep red colours on the maps indicate sites in each city where the respondents have a feeling of helplessness. On these maps it is demonstrated that the informal traders of Tshwane and the formal businesses in eThekweni have the most negative perception concerning the control of their environment.

The perception for businesses of having control in the trading environment can contribute to a feeling of being capacitated and can contribute to a personal business environment confidence. The value of control includes all the perception aspects from the survey and a low overall value for the control aspect would indicate an overall feeling of helplessness with regards to the perception of the environment. In the case of this study the only high negative value, were from the formal business in eThekweni and the most of these negative perceptions came from the western side of the city (Figure 4 B.)

Conclusion

With this paper an attempt was made to highlight the need to take note of the perceptions of formal businesses and informal traders of their trading environments. To protect our cities from becoming “meaningless places, beyond their citizens’ grasp” (Jacobs and Appleyard, 1987, p.115), it is important for authorities and city planners to be aware of the perceptions of people frequenting the city as this will enable them to plan a city where the informal trader and high end formal business can share the same space whilst still experiencing a well-managed environment devoid of dirt, overcrowding, danger and other intrusions.

With the results one can begin to understand the diversity of perceptions amongst businesses, whether formal or informal, in selected South African city centres. Importantly the patterns and trends that emerged from these results can provide a useful basis to address the challenges relating to business environments between and within these cities and in so doing, can contribute to a nuanced perspective of these business environments. Concerning the survey results it is clear that, except for particular aspects in certain cities such as the lack of parking, lack of maintenance, and upgrades, formal and informal businesses in Johannesburg, Cape Town and Tshwane have a highly positive perception with regards to their business environments and the general environment of the inner city centre. It is only in eThekweni that apart from the positive perception on safety (only for the informal traders) and access (only for the formal businesses), the rest of the perceptions are neutral or negative. This is also the city where the perceptions between the formal and informal traders differ on aspects such as safety, access and the overall perception of control.

The spatial distributions of the perceptions of formal and informal businesses also support these interesting findings, illustrating differences in opinions on certain aspects based on location. These differences are evident throughout the survey and confirm that there are differences in perceptions. The fact that these perceptions

differ could allude to the different needs and demands for the particular businesses to thrive and grow in the city centre.

Porter (2011) mentions that the economic turnaround in the inner city businesses should be left for the private sector and local government must focus more on creating a lucrative business environment. They should therefore shift their focus from providing business incentives to stimulate business activities in the CBD to upgrading and maintaining the current hard and soft infrastructure in the cities. Analysing the perceptions of business in this study indicated the importance for people to feel that part of the environment that they spent their time in belongs to them, they should care and feel responsible for certain areas even if they don't own the areas. Environments should be designed for the people who use them and are affected by them and not only for the authorities who manage the city.

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An overview of urban-ecological challenges and changes in Bellville

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Abstract: Urban-ecological investigations in Cape Town are largely driven by urban nature conservation agendas as a result of the city and the surrounding areas' significant biodiversity endowment. This paper however, records observations and provides perspectives on the spatial manifestations of urban-ecological problems in Bellville, largely from an environmental control measures perspective. It is explorative and repeat visits, walk-about, the analyses of a selection of observations, as well as reflections on problems reported on by affected parties underpin the methodology of the investigation. Bellville, situated twenty kilometres northeast of the central business district of Cape Town, is the second most important commercial, administrative and transport node in the metropolitan area of Cape Town. The increases in population, land use diversification and a rapidly changing urban morphology provide strong bases for urban-ecological investigations in this part of the metropole. The paper focuses on the central business district as a sub-region of Bellville, characterised by a concentrated diversity of urban land uses and services that range from specialised private medical facilities on the one hand to one of the busiest public transport hubs in the metropole on the other hand. The paper illustrates how problems related to avifaunal behaviour; rodent infestations; littering and waste water disposal; informal trade and retail sprawl; and homeless people collectively add to some of Bellville's urban-ecological challenges. It concludes with an attempt to glean from the observations and verbal reports by affected parties, analyses of spatial ecologies that can in turn inform our understanding of the nature and continuation of some of Bellville's urban-ecological challenges.

Introduction

"One of the greatest challenges for natural and social scientists in the next decades is to understand how metropolitan areas evolve through the interactions between human behaviours and biophysical processes" (Alberti and Waddell, 2000:215). This idea aptly articulates the scope of challenges posed by urban-ecological problems for academia, practitioners and managers interested in, and involved in urban settings throughout the world.

All the various definitions of Urban Ecology try to capture the essence of studies that deal with the interactions between the biotic and abiotic in the urban or built-up environment. The Urban Ecology field includes more than just biotic-abiotic relations though. The definition of Marzluff *et al.*, (2008) includes a description of Urban Ecology in terms of its status as an emerging interdisciplinary field that attempts to understand the potential for human-ecological processes' coexistence under human-dominated circumstances. This encompassing description allows for a variety of research strands in urban ecology.

In the context of ever-changing urban dynamics, Urban Ecology can therefore span an array of interests in the fields of biophysical, engineering, planning, social, and behavioural and management sciences. Cilliers and Siebert (2012) consider Urban Ecology as the "Cinderella" of the natural sciences due to the fact it can easily be rooted in some of the sciences mentioned. Urban-ecological concerns are normally

expressed and investigated at the level of the city as an overarching metropolitan entity, i.e. the *of-city* approach that provides a framework for an understanding of how the different biotic and abiotic constituents interact or ought to interact. (Pickett *et al.*, 2001, McDonnell, 2011) Investigations can also take on an *in-city* approach in which more nuanced and site-specific urban-ecological relationships and challenges receive attention. This paper takes a closer look at how a smaller subsection of the metropolitan area of Cape Town reflects such interactions. It could be argued that Bellville and other non-inner city areas of the metropole, that are far less endowed from a biodiversity point of view if compared to central Cape Town and its immediate environments, require more attention. In as much as inter-urban studies are important for comparative analyses for the facilitation and maintenance of ecological goods and services (EGS), so are intra-urban analyses for the comparative identification and analyses of areas characterised by significant urban-ecological problems.

Gleaning information and inferences from city-wide investigations often blurs the more nuanced differences and spatial discrepancies that exist within the city as a collective. In an attempt to include the economic value of ecosystems goods and services in decision-making at metropolitan level in Cape Town, De Wit *et al.* (2012) argue that well-functioning ecosystems services off-set some municipal service delivery costs. Whilst it is sound in principle, the spatial and environmental control diversities in the city beg a closer look at analyses at sub-metropolitan level. To this end, the central business district of Bellville, the second biggest node in the metropolitan area of Cape Town is used as a case study to inform some of the challenges and to reflect on emerging spatial ecologies.

Theoretical considerations for the study

Ecology is essentially characterised by systems approaches. Brown (2011) argues that the origins of Urban Ecology as discipline can be traced back to theories that were developed by the urban sociologists Park and Burgess (1921) to try and understand the planning and morphology of cities as functions of homogenous and predictable spatial and behavioural variables. Park and Burgess' interpretations of differences in city scape, urban resource usage and competition, and social-spatial preferences were largely underpinned by the application of classical ecosystems principles that eventually led to their so-called concentric model of city evolution. Their theory is critiqued as too simplistic and generalised in their quest for natural and organic explanations for much more complex and nuanced processes (Brown, 2011). Cities can be seen as epitomes of the modification of natural environments since human-kind started settlements in organised, collective and more permanent spaces throughout the world. The site and locational variables of such localities allowed for various degrees of change and adaptation by occupiers of such environments on the one hand and carrying capacity challenges of the very environments on the other hand. The explanation of urban dynamics through the use of traditional urban models is therefore inappropriate (González and Medina, 2004). Brenner (2009) argues that the malleability of urban spaces needs to be appreciated as fundamental functions of power relationships that continually (re)shape urban spaces. Political ecology as theoretical approach that considers conservation conceptions and practices as necessarily political, can also be used to lens conservation-society contestations (Robbins 2004). The (re)shaping of Bellville's CBD is reminiscent of dynamics that influence many South Africa cities, i.e. in-migration

and the subsequent introduction of new and contested retail and service spaces driven by the power of entrepreneurship as displayed by foreign nationals. The inner-city of Bellville has the largest concentration of Somali foreign nationals that are leaving a significant new retail footprint on the traditional retail spaces of Bellville as well as on the spatial manifestation of urban-ecological problems.

South African urban-ecological research according to Cilliers and Siebert (2012) is largely driven by three approaches. Firstly, studies with strong urban nature conservation concerns as characterised by the inner-city and immediate surroundings of Cape Town as a biodiversity hotspot with significant socio-ecological challenges. Studies in this category focus *inter alia* on baboon management, invasive species management, fire control and maintenance of ecosystems integrity and services through appropriate management. Secondly, studies in metropolitan areas such as Durban are characterised largely by foci on open space planning and environmental management imperatives. Thirdly, foci on private public open space and human-induced habitats characterise urban ecological studies in the Eastern Cape and North-West Provinces. The ever-changing socio-spatial dynamics in urban environments pose very specific challenges to the ecological functions of the 'natural' environments within which cities are located. The fluidity of changes in such an anthropogenic biome need to be guided and managed by policy, strategies and practical measures to facilitate stronger synergies between human-induced and natural constituents of modern urban spaces.

Bellville as case study

Bellville that is located twenty kilometres north east of Cape Town's central business district (see Figure 1) has seen major changes over the last two decades. As the second most important transport and commercial node in the metropolitan area of Cape Town, Bellville catalysed a variety of land use changes over the years. The historical extension of the railroad from Cape Town to Stellenbosch and beyond precipitated careful planning as to where a station on the unused Cape Flats should be located. The government at the Cape in the 1860s, had a more structured settlement around the station in mind though. The subsequent settlement was then called Bellville in honour of the governor-surveyor, Charles Bell, at the Cape (Wesson, 1998; Du Plessis, 1998). Whereas the Durbanville area grew almost organically due to its agricultural attractiveness, Bellville "began by accident" due to differences in planning opinions (Wesson, 1998: 56).

Environmental and ecological challenges in the Bellville and the bigger Tygerberg area have a long history that dates back to colonial settlement at the Cape of Good Hope in 1652. Most arable land in the Table and Liesbeeck Valleys was occupied by 'Vryburger' farmers by 1657. As early as 1655 reconnaissance parties were dispatched to survey the Tyger Hills for resource use and settlement purposes (Wesson, 1998). In an historical-ecological analysis of Cape Town Anderson and O'Farrell (2012), also argue that European settlers' views on the establishment of longer-term settlements posed significant threats to the spatial ecologies of indigenous people in the colonial Cape.

Bellville, over and above the traditional urban retail, residential commercial, industrial and other service sector functions, also plays host to a variety of important other land uses and functions in its broader spatial-administrative jurisdiction.

Such land uses and functions include Cape Town International Airport towards the south, the headquarters of the insurance giant Sanlam, one of the biggest academic hospitals in the country namely Tygerberg Hospital and institutions of higher learning such as the University of the Western Cape, one of the campuses of the Cape Peninsula University of Technology and satellite campuses of the business and medical faculties of the University of Stellenbosch. The city has therefore significant national and regional importance.

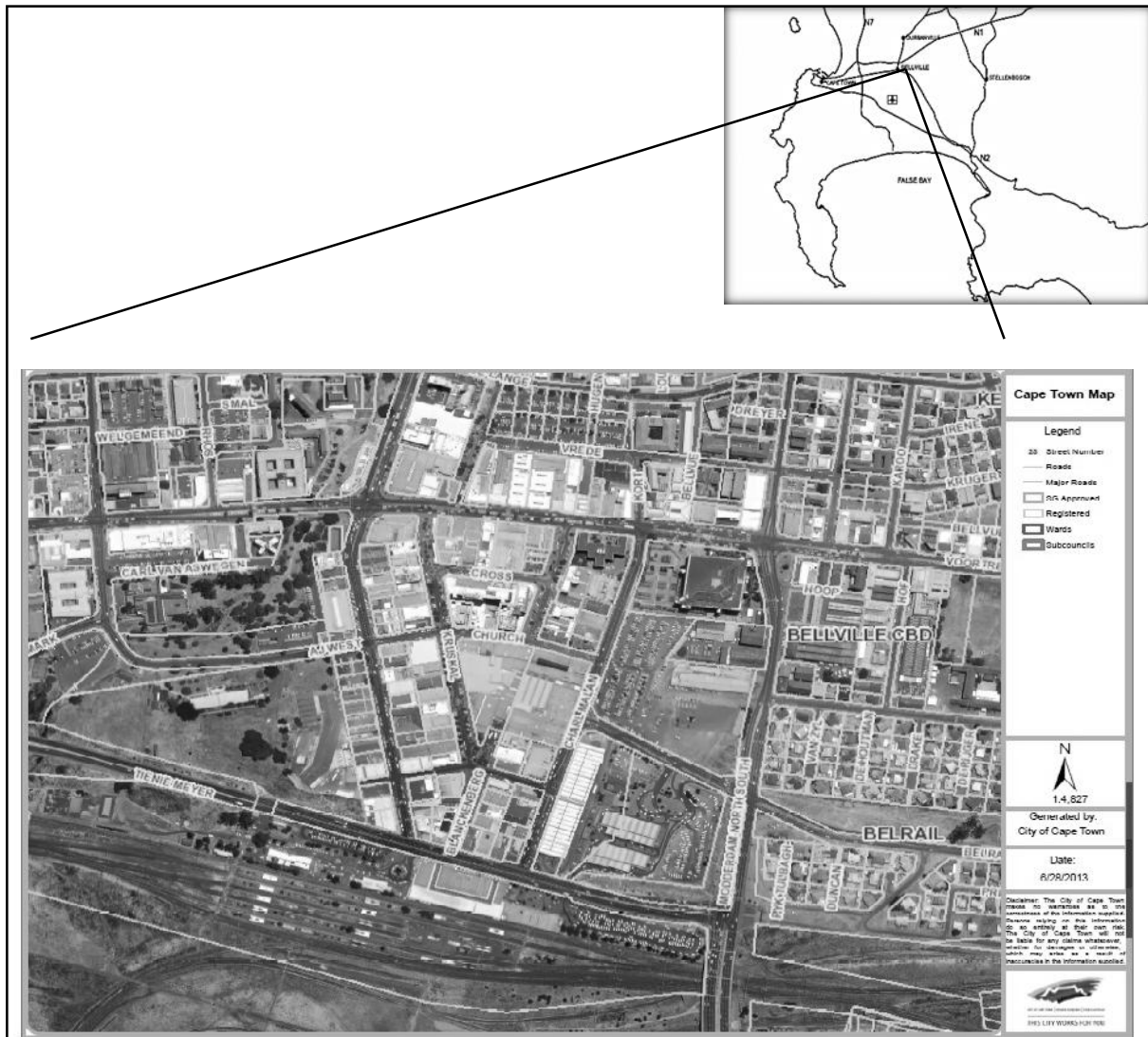


Figure 1: Map of study area (Source: City of Cape Town)

The ecological and conservation significance of the bigger Bellville area is probably best exemplified by the officially protected areas of Tygerberg Nature Reserve (located along the slopes of, and on the Tygerberg Hills), the Cape Flats Nature that is located on the premises of the University of the Western Cape (UWC), and the Drifts Sands Nature Reserve near Khayelitsha. These protected areas provide havens in the northern suburbs of Cape Town for the protection of some of the last remnants of critically endangered indigenous vegetation. The Tygerberg Nature Reserve serves to protect renosterveld and a variety of indigenous mammal, bird and reptile species (City of Cape Town B, 2013). The Cape Flats Nature Reserve

that is administered by UWC protects equally endangered strandveld and coastal fynbos.

Although the case study area that is a mere 0.7km² in size do not host any significant biodiversity attributes that need to be conserved, it displays at a relatively small geographical scale, a variety of human-induced impacts on Bellville's 'urban nature'. Nas (1998) argues that an understanding of the territorial organisation of subsections of urban populations provides a framework for the interpretation on human and nature interaction in cities. The work of social ecologists is therefore important in unpacking the territorial-specific nexus of human-environment relationships in cities.

Methodology and analysis of urban-ecological challenges in Bellville

This paper draws largely on the analysis of observations done at specific locations on walk-about in the case study area during different times in the week and over weekends. The case study area is geographically framed by Modderdam Road (recently renamed as Robert Sobukwe Road) in the east, Voortrekker Road in the north, Landros Street in the west and the road that runs parallel to the railway station complex underneath the Tienie Meyer Bypass bridge in the south. Photographic evidence was obtained of 'problematic' spaces and processes where appropriate and for which consent was given by respondents. Informal conversations were also conducted with business owners (informal and formal), homeless people, and municipal workers. The idea was to try and make sense of the perspectives of people who are in one way or the other directly affected by the spatial manifestation of urban-ecological problems. The paper therefore has a strong anthropogenic emphasis, informed mainly by feedback from affected parties. The following observations and urban-ecological themes emanated from the investigation:

Bellville's avifaunal problem

The avifaunal population is characterised by seagulls and pigeons that are largely to be found in the public transport precinct consisting of the train station, bus terminus and taxi rank. Seagulls are important scavengers in the natural food chain and naturally aggressive and territorial. Behaviour and visitation patterns of seagulls are largely influenced by fairly readily available food sources and they are often to be seen scavenging in waste bins. Workers at certain fast food outlets located in the retail complex at the railway station reported incidences of seagulls that are brazen enough to enter premises during low patronage periods during the day in search of food. It was also reported that the birds are often chased away and, or are injured by workers. Apart from being a nuisance workers are responsible for ensuring that hygienic conditions prevail at their premises. Intrusive and often defecating birds pose undesirable conditions. (Personal communication with fast food outlet attendants at Bellstar Junction, 2013).

The behaviour of seagulls is further reinforced by daily commuters that often dump food waste anywhere and in doing so perpetuating anti-seagull sentiments expressed by workers at fast food outlets. Bellville, as a high intensity commuter break-in-bulk node therefore facilitate bird-commuter-retail contestations.

Over and above commuter education and preventative measures that can be implemented by fast food outlets, traditional environmental control measures seem limited in this node in so far as addressing the seagull problem is concerned. Seagull behaviour is therefore influenced by externalities that are difficult to control.

Fast food outlet attendants as well as cleaning staff operating on platforms at the train station also believe that seagull behaviour and aggression are responsible for the dwindling pigeon population in the public transport precinct. Reports by occupants in the high rising apartment blocks in the north-western part of the study area indicate more frequent nesting by pigeons on windowsills and ledges of the buildings in which they reside.

Another dimension of a changing spatial ecology as reported by municipal staff responsible for the cleaning and monitoring of Elizabeth Park as public open space, is the increase in visits by Egyptian Gees (*Alopochen aegyptiacus*) in recent times. It is a duck species that appears widely in Sub-Saharan Africa, display strong group cohesion and can be very territorial (Dohner, 2001).

Bellville's rodent challenges

Reports of rodents, particularly mice and rats were reported by various respondents in different locations of the case study area – from daily commuters waiting on platforms on trains to arrive, to hawkers selling fruit and vegetables in the public transport precinct. This links with evidence of a growing rat population that poses significant health problems and threats to structures that are comprised of 'edible' construction material such as wood and rubber in the bigger Cape Town Metropolitan area. Cape Town apparently has worrisome rat-city dweller ratios. The City of Cape Town has a comprehensive plan to try and combat the scourge of rats.

Questions posed to cleaning staff as to what solutions, other than toxic bait, exist to address the rat problem elicited varied responses. Some of them believe that the severity of the rat problem in the area even renders predating stray cats as possible solution, inefficient. Some believe though that there are more cats than before. This adds an interesting component to a 'new' food chain caused by unhygienic and crowded retail and residential spaces in the city. It therefore adds to the changing behavioural ecologies of rats and stray cats as generalist species in the study area. Although Bellville is not singled out as a priority area in Cape Town's rodent management programme that depends largely on the poisoning of rats, there seems to be reason enough for concern in the case study area. So-called block baiting areas that include many poorer townships form the cornerstones of the programme (City Press, 2013). Illegal dumping and, or inefficient solid, and specifically food waste removal and disposal services are largely to be blamed for the escalation in rodent-related problems throughout Cape Town. The urban poor cannot afford the problems associated with rat infestation as "...rats were carriers of human diseases such as the Plague, Leptospirosis, Rat Bite Fever and Lassa Fever. Their feces and urine could contaminate food and food sources and water supplies with other harmful organisms such as E-coli and Salmonella" (Bromfield, 2009).

Littering and affected waste water disposal infrastructure

In the analogy of the city as a body that needs a good metabolism to function efficiently, cities' lymph systems, i.e. water and effluent discharge infrastructure, needs to be efficient. Blocked infrastructure can cause discharge constipation if the disposal of fluid and solid waste (by primarily the informal sector), in and along pavements conduits are not effectively controlled. Bellville's retail landscape close to the public transport precinct is progressively being taken over by informal trading on pavements and in pedestrian walkways. The dominance of the activities of Somali foreign nationals is of particular interest in this part of the case study area. Fluid

waste disposal caused by activities in small corner shops, (without draining and ablution facilities), cash-and-carry outlets, traditional healer establishments, and hairdressers operating on pavements are particularly prevalent at the intersections of lower Durban Road, Blackenberg Road and Charl Malan Street with Wilshammer Street, and the connecting road near the railway station (Personal observations 2012 and 2013). Similar concerns about the situation of fluid waste disposal were expressed by tenants that occupy formal retail spaces further north of the precinct in the Kruskal and Church Street regions of the case study area (Personal conversations with clientele, shop attendants, and municipal cleaning staff 2013). The removal of sticky and fatty deposits (apparently resulting from the dumping of fluid waste by informal hair dressers) from pavement conduits, was of concern for some workers. Blocked fluid waste infrastructure is also evident in areas of excessive littering and solid waste dumping in, and along the course of the Elsies Kraal River that runs through Elizabeth Park. The latter, located in the north-western part of the study area close to Carl van Aswegen Street, is the only green open space in the study area administered by the City of Cape Town.

As an intervention and control measure, the park has been fenced off recently to address problems related to waste dumping and littering as well as safety concerns expressed by tenants in residential properties close to the park, as well as park users. Some homeless people contribute to the problem as they prefer to continue to occupy spaces (under bridges, storm water conduits and in the verges of the Elsies Kraal River outside the perimeter fence of the park (Personal communication with some homeless people, 2013). An amenity such as a green recreational space that is ecologically vital for any high density area is therefore rendered as a no-go area during periods (specifically at night), in which control cannot be exercised.

Non-compliant retail sprawl

From an urban geography point of view the CBD of Bellville can be seen as a space that has been almost entirely transformed by the processes of invasion and succession. Invasion can be seen as “the process whereby by one population group or type of land use interpenetrates the space occupied by another” (Myburgh, 1998:76). Succession refers to the “successful displacement of former occupants or uses or the area (Myburgh, 1998:76). The accommodation and retail territoriality displayed by specific foreign national groupings in Bellville’s CBD is also striking. Myburgh (1998) documented that, although informal settlements never existed permanently in the bigger Bellville area, there were always diversity in ethnicities and economic activities in the larger Tygerberg area. It is therefore not entirely strange to see more permanency of foreign ethnicities in the study area. Bellville plays host to the biggest Somali population in South Africa (Cape Times, 2011). The areas in proximity to the railway station, bus terminus and taxi rank have seen significant influx of, and occupancy of retail space by Somali small business entrepreneurs. The team spirit and ethos of collectiveness that underpin the operations of these entrepreneurs also have unintended environmental health and control consequences. One such consequence is the fact that extended operation hours often lead to business owners staying on premises. This tendency, also prevalent in Chinese retail businesses in other parts of the city, poses challenges to the enforcement of land-use zoning regulations and other ordinances.

Reports were compiled and formal complaints launched with the provincial minister of finance, economic development and tourism concerning the many illegalities that

are associated with Somali retail sprawl in the Bellville CBD (Rapport, 2011). The establishment of the largely Moslem Somali community in Bellville also precipitated the need for the creation of places of worship. Bellville's rate payers and lobbying groups have been very vocal in their opposition against 'illegal' mosques that have arisen in the area. This new religious-cultural dimension of Bellville brought with it significant noise-related concerns for the established inhabitants of the area. The enforcement of environmental control measures that guide less tangible environmental concerns such as noise and odour disturbances will continue to be a highly contested issue.

Urban renewal needs

The dilapidated and/or unused state of some buildings and spaces close to the identified precinct precipitated the encroachment of vegetation into such spaces. This is particularly prevalent in areas west of Durban Road close to the railway station. Seasonal grass and invasive Port Jackson trees were observed in cracked tarred and concrete surfaces and along the embankment of the Tienie Meyer Bypass. The 'sterility' of artificial spaces and surfaces, maintained and managed by service delivery agencies often do not allow for the 'encroachment' of nature into and onto such locations. Natural encroachment of vegetation and animals (domesticated or wild), is therefore an inherent contestation from a control measure point of view.

The City of Cape Town has identified parts of Bellville as priority areas for urban rejuvenation. The city's Urban Development Zone initiative (UDZ) includes sites in Maitland and Bellville, as part of the Voortrekker Road Corridor Improvement initiative (City of Cape Town A, 2013). Bellville's strategic and almost central location in the bigger metropolitan area's spatial economy makes it a vital role player in the city's UDZ.

The sections of Bellville along Durban Road north of the N1 national road display an entirely different urban-ecology and morphology. The area is strikingly different from the part of Bellville in the case study area. Its retail and business areas boast an almost post-modernist planning and architecture as reflected in the Tyger Valley and Willowbridge shopping complexes and Tyger Waterfront areas associated with manicured and well maintained public open spaces.

Conclusion

Bellville, just as other parts of the metropolitan area of Cape Town, is facing significant urban-ecological challenges. The paper describes observations, records personal experiences of some affected parties, and reflects on ways in which some prevalent urban-ecological problems, in a relatively small geographical space, can be lensed. The reported experiences of people that are affected in specific ways by urban-ecological problems feed into an argument in favour of more *in-city* approaches against the background of Cape Town's intra-urban environmental and socio-economic problems. Such challenges are reflected in some of the problems and contestations that were investigated. The avifaunal problems identified in the public transport precinct of the case study area speak to contestations that are driven by influences that can only be partly contained as the behaviour of birds are influenced by less-controllable variables that are in turn influencing spatial and behavioural ecologies of birds. Catalysts for the rodent problems are rooted in a variety of anthropogenic causes that can be attributed to the many socio-economic and hygiene problems prevalent in inner-city spaces and other suburbia. Some

problems, such as littering and water disposal, could probably be addressed by the enforcement of regulatory requirements whilst others need more integrated-educative approaches. The Somali population and their seemingly uncontrolled retail sprawl activities also pose management problems that cause further spatial and environmental problems in a very contested and diverse urban space.

The paper is explorative and didn't analyse official data/information to inform perspectives articulated as it attempted to rather record experiences of people and gauge their perspectives relative to specific urban-ecological challenges. As the study attempted to reflect on environmental concerns and related environmental control measures as an approach to inform our understanding of urban-ecological challenges and changes in the case study area, cognisance should be taken of other approaches that may be more location and time specific. The varieties and intensities of socio-economic challenges in South Africa's urban areas require multipronged approaches to the understanding and management urban-ecological problems.

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The environmental impact of fuelwood use by households in Bela-Bela Township, South Africa

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Abstract: It was estimated in 1993 that only 36% of South Africa's population had access to the electricity grid of the country. As a result the impoverished population, generally living in squatter camps and informal settlements in rural areas, depend mainly on fuelwood as their primary source of domestic energy which is harvested from their immediate surroundings. The phenomenon of deforestation, followed in its wake by soil erosion, has had an adverse effect on the vegetation of regions in question. The enormity of the problem has not been limited to areas in South Africa, in fact, approximately five million hectares of tropical forest are lost in Africa on an annual basis, as a result of amongst other factors, fuelwood harvesting. Similarly, but on a different scale, the Sub-Saharan region of Africa has been jeopardised by deforestation and uncontrolled soil erosion. Almost 46% of the population served by Bela-Bela Local Municipality lives in the township, with almost 55% of the inhabitants being unemployed and 45% of the housing units in the area being classified as informal. One hundred households from Bela-Bela Township were selected as a random sample for a survey, conducted in 2012. It was found that 47% of the interviewees use electricity as a source of lighting, 44% use wood for cooking, and 70% use wood for space heating. Therefore, it is clear that the population in this case study is heavily dependent on fuelwood as a source of energy. The inhabitants collect fuelwood legally from an area to the northeast of the township. However, there are two commercial farms to the south where wood is harvested illegally. It was calculated in 2012, that the annual household fuelwood demand in this case study was 1833 kg per year on average. This translates into an average 3 700 tons of fuelwood used for cooking and space heating for Bela-Bela Township, while on the other hand, the natural vegetation reproduction rate for the area is only 1 695 tons per year. These figures are a clear indication that the natural reproduction rate of woody vegetation is outstripped by the harvesting of fuel-wood. This has had a detrimental impact on the natural environment and has resulted in deforestation and soil erosion in the study area.

Strategies and sources of energy of the rural poor

Energy according to Green and Erskine (1999), is one of the basic prerequisites for human life. However, most of the South Africa rural population do not have access to efficient and affordable energy resources. Furthermore, it has been estimated by the International Energy Agency, as cited by Wessels *et al.* (2013), that 80% of families throughout sub-Saharan Africa are reliant on biomass as their principal source of energy. These rural people depend for their cooking and heating requirements on what is known as "traditional fuels", such as wood, crop residues and animal dung (Masekoameng *et al.*, 2005; Scholes and Biggs, 2004). However, the combination of these fuels barely allows for the fulfilment of the basic human needs of warmth, nutrition and light, let alone the possibility of harnessing energy for productive uses, which might allow these impoverished people to escape from the poverty cycle (World Energy Council, 2000; Green and Erskine, 1999).

Although South Africa is a comparatively well-developed country, not all communities have access to electricity to satisfy their basic needs and are dependent on biomass as a source of energy (Malzbender, 2005; Shackleton and Shackleton, 2004). However, those communities that do have access to this energy source have

improved their welfare substantially (Malzbender, 2005). Direct benefits emanating from the availability of electricity for domestic use are cooking, heating and lighting. Never-the-less, there are also indirect benefits, such as the reduction in fire incidents arising through the use of paraffin and candles, as well as a reduction in indoor air pollution caused by the burning of firewood (Malzbender, 2005).

This paper is divided into five sections: the first is a review of strategies and the sources of energy available to the poor and more specifically the rural poor; the second, a description of the study area and the methodology used in this case study; the third deals with demographic attributes, as well as the sources of energy that are used by the inhabitants of Bela-Bela Township; the fourth looks at the effect that fuelwood harvesting has on the natural environment surrounding the study area; and the final section presents concluding remarks.

The study area and methodology

The rural town of Bela-Bela is located in the southern part of the Limpopo Province. The black township, the focus of this study, is separated from the rest of the built-up area of the town by the railway line and the R101 connects Pretoria to Modimolle (formerly known as Naboomspruit) (see Figure 1). The town is located on the Springbok Flats so that the landscape of the study area is predominantly flat. Furthermore, the soils are mostly sandy and are suitable for farming activities (Waterberg District EMF, 2011).

The dominant group of rocks underlying the Springbok Flats belong to the Eccu group. An important characteristic of this group is that it consists principally of dark-grey shales (Visser, 1989). The climate of the study area is typical of the Bushveld with average day and night temperatures of 29 and 17 degrees Celsius, with the corresponding temperatures for the winter months being 22 and 5 degrees Celsius respectively. The area experiences thunderstorms during the summer months, with an average precipitation of 481 mm per annum (calculated over a 35-year period). However, the rainfall is very erratic (Mucina and Rutherford, 2006). These climatic conditions have an impact on the vegetation of the area, which is covered in dense, low thorn savannah dominated by *Acacia* and shrubby grassland. However, an estimated 60% of this vegetation type has been radically altered, mainly through cultivation (Mucina and Rutherford, 2006).

The Bela-Bela Township on which this case study is based accommodates about 2 500 households. The unemployment rate is high - standing at 40%. The national average for unemployment in South Africa recorded during the 2011 census was found to be almost 25%. The educational levels are also very low, with more than 50% of the inhabitants having only a primary school educational qualification or even lower (Bela-Bela LIDP, 2010).

This case study attempts to establish the type of energy sources used by the different households in Bela-Bela Township (formal, informal and RDP houses). Finally, it seeks to estimate the amount of wood that is harvested by these households for fuelwood and to ascertain whether the annual vegetation production rate could sustain these practices. To determine the impact of the energy used by the inhabitants of Bela-Bela Township on the environment, it was necessary to establish the type and quantities of the energy source used. This was done by means of a random questionnaire survey which was conducted between May and August, 2012. One hundred households from the formal and informal housing areas,

as well as from the area of RDP houses, were included in this study. The questionnaire determined the socio-economic background of the interviewees, as well as the type of energy consumed on a daily basis. From this survey, it was clear that the inhabitants of Bela-Bela Township are extremely dependent for their heating and cooking on fuelwood, harvested from the immediate environment of the township.

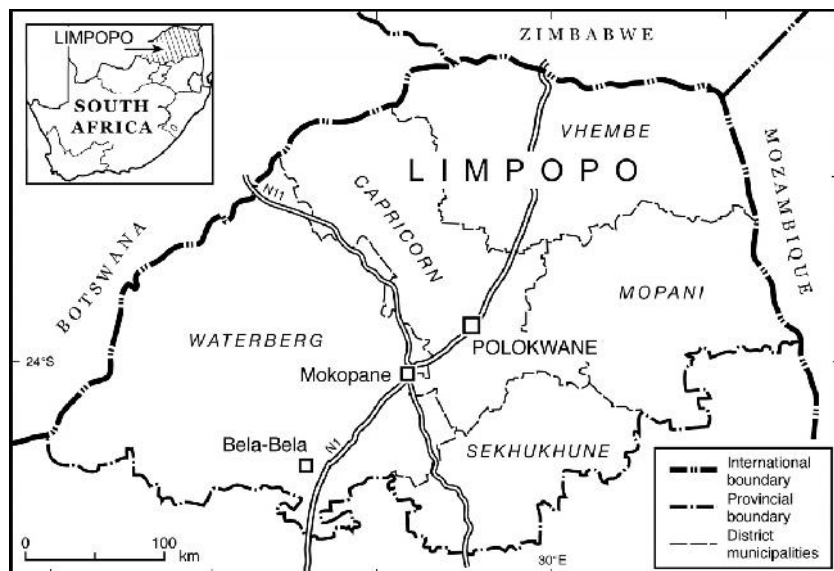


Figure 1: Location of Bela-Bela.

The next step was to estimate the origin and the quantities of fuelwood used by the inhabitants. To establish the impact on the environment the annual fuel wood consumption was evaluated against the annual vegetation production rate of the study area, as well as the size of the area from which the residents harvest (legally and illegally) the fuelwood.

The inhabitants of Bela-Bela Township and the sources of energy utilised

Based on the 2007 household survey, the current population of Bela-Bela Municipality is estimated at almost 56 000 individuals, predominantly African. This figure includes more than 14 000 households and it is to be expected that the population will continue to grow to approximately 70 000 individuals by 2020. The Municipality of Bela-Bela has to cater for an uneven distribution of population, with Bela-Bela Township and its extension recording the highest population density for the region (Bela-Bela LIDP, 2010).

In this case study, it was found that 54.4% of inhabitants of the households are females (see Table 1). This confirms the national trend which reflects a larger proportion of females in rural South Africa owing to the fact that males are generally attracted to larger cities in search of employment.

The majority (81.6%) of the interviewees were under the age of 45 years, 26.9% younger than 14 years and only 5.2% older than 64 years (see Table 1). The unemployment rate in the study area is very high compared to the national average, which is 25%, according to the 2011 census figures. In the Bela-Bela case study, 50.2% of the people over the age of 18 are unemployed, while 41.2% have a job and 8.6% indicated that they are retired. Educational levels in the study area are very low, with the majority (51.4%) not having reached the secondary school level, 11.8%

having matriculated, and almost five per cent (5%) claiming that they have a tertiary education (see Table 1).

Table 1: Socio-economic characteristics relating to respondent households.

		Number	Percentage
Gender:	Males	166	45.6%
	Females	198	54.4%
Age of inhabitants:	≤ than 14 years	98	26.9%
	15 to 29 years	118	32.2%
	30 – 44 years	81	22.3%
	45 – 64 years	48	13.2%
	≥ than 65 years	19	5.2%
Employment status: (≥18years)	Employed	100	41.1%
	Unemployed	122	50%
	Retired	21	8.9%
Educational level:	No schooling	49	13.5%
	Primary school	138	37.9%
	Secondary School	116	31.9%
	Matriculated	43	11.9%
	Tertiary qualification	18	4.9%

Energy sources utilised by the interviewees in the case study

From the Bela-Bela case study, it is clear that the interviewees do not use renewable energy (solar), nor do they use gas and coal for domestic sources of energy. Only two people make use of the latter two energy sources for cooking and space heating, while no interviewee uses renewable energy sources. The most important sources for lighting are electricity and candles that are used by 47% and 31% respectively of the interviewees. Most of these sources of energy (electricity and candles) are used by those living in formal and RDP houses, while those in informal houses, unable to avail themselves of the luxury of electricity, use candles (see Table 2).

The main energy source for cooking is wood, with 44% of the interviewees indicating this energy source as the chosen one, while 32% and 23% respectively use electricity and paraffin for this purpose. The majority of the interviewees use wood as an energy source for space heating, while a smaller proportion used electricity and paraffin (16% and 13% respectively) (see Table 2). Although questions relating to the use of alternative renewable energy sources (solar and wind power) were included in the questionnaire, none of the interviewees was found to use them.

From this discussion, it is clear that wood remains one of the most important sources of energy (38% of all energy used), however it does not give an indication of the

amount of wood that is used. This is followed by electricity and paraffin, with values of 31.7% and 19.3% respectively.

Table 2: Energy sources used by households.

	Lighting	Cooking	Space Heating	Average use
Electricity	47%	32%	16%	31.7%
Paraffin	22%	23%	13%	19.3%
Wood	0%	44%	70%	38%
Gas	0%	1%	0%	0.3%
Candles	31%	0%	0%	10.3%
Coal	0%	0%	1%	0.3%

The residents in the study area collect fuelwood from the surrounding woody vegetation in the immediate vicinity east of Bela-Bela Township. The interviewees indicated that they collect the fuelwood from six parcels of land. Four of the parcels are state-owned land so that the cutting of wood can be done legally. However, additional supplies of fuelwood are being illegally harvested from two privately-owned areas adjoining the state-owned areas.

The impact of fire-wood harvesting on the environment

According to Pereira *et al.* (2011), 55% of all rural households in South Africa have access to electricity. Nevertheless, 54% of these families are still using wood as their principal source of energy (Madubansi and Schackleton, 2006). Madubansi and Schackleton (2007) also found that even 10 years subsequent to the introduction of electricity to an area, 90% of the people still continued to use fuelwood for cooking. This dependence on fuel wood and the high levels of harvesting this energy source have resulted in a possible crisis on a national scale (Dovie *et al.*, 2002). Hence, the question is whether this practice of collecting fuel wood is sustainable.

According to Von Maltitz and Scholes (1995), the harvesting of fuelwood is only considered sustainable when the consumption is equal to or less than the production thereof. To calculate whether the harvesting of fuelwood is sustainable in the study area, an attempt was made to calculate the volume of fuelwood that is used in Bela-Bela Township. This was done by estimating the average amount of wood that was used per year by the households selected for the case study. By taking the seasons of the year into account, the number of fires per week, and the average mass of fuelwood used per fire, a value of 1833.12kg was calculated per household (see Table 3).

To estimate the number of fuelwood collectors in the case study, the number of households in formal, informal and RDP dwellings, as given in the Bela-Bela LIDP (2010), was used. Firstly, estimated averages for fuelwood users from each of the three types of household were calculated (see Table 4). Secondly, the number of households that collected fuelwood from the surrounding areas was calculated. This was necessitated by the fact that if fuelwood is obtained from vendors and shops,

these supplies could come from other areas and not from the areas surrounding the study area (due to refusal to cooperation of the vendors). From this sources of information, it was estimated that 2024 household in Bela-Bela Township collect fuelwood for space heating and cooking.

Table 3: Estimate in kilograms of fuelwood used per household in Bela-Bela Township.

Variables	Values
Average mass of fuel wood per fire	13.4 kg
Frequency of fires during summer months (weekly)	1.5 fires
Frequency of fires during winter months (weekly)	4.2 fires
Fuelwood demand per house hold in summer (per month)	80.4 kg
Fuelwood demand per house hold in winter (per month)	225.12 kg
Estimate of fuelwood used per house hold	1833.12 kg

To determine whether the fuelwood collected by the population is sustainable and thus has an impact (or not) on the natural environment, the estimated number of fuelwood collectors from the study area was multiplied by the estimated fuelwood used per household (2024.1 X 1833.12 kg). From this calculation, it could be estimated that 3710 tons of fuelwood are collected on a yearly basis from the area surrounding the Bela-Bela Township. However, it must be stated that this is a very conservative estimate because Madubansi and Shackleton (2007), as well as Banks *et al.* (1996), found that the average household in the Lowveld of South Africa uses on average between three to four tons of fuel wood per year.



Figure 2: An area where over-harvesting of fuelwood is taking place (Photo: Hans Scheepers).

This case study showed that more than 78% of the households living in informal houses are collecting fuelwood from the surrounding areas, while 65,4% of the households in the RDP houses are doing the same, in spite of the fact that their houses are connected to the national electricity grid (see Table 4). A possible reason

for this could be the traditional belief that lighting a fire is part of socialising or an indication of the high rate of unemployment and poverty in the area in that the occupants of the dwelling cannot afford the cost of electricity. These figures confirmed the estimation that 56.2 % of the households in Bela-Bela are still using fuelwood, which also seems to correspond with the findings of the 2002 study of Serwadda-Luwaga and Shabalala (2002) who estimate that 54% of South African rural families continue to use wood as their primary source of energy.

The last step in the study was to determine whether this practice of collecting fuelwood from the surrounding areas is sustainable. In the questionnaires, the interviewees were asked to indicate the areas from which they collected fuelwood. In total, six areas next to the township were identified, four of which were land belonging to the Bela-Bela local authority and where fuelwood could thus be collected legally. In other two areas, the interviewee's bridged fences to harvest wood illegally from privately-owned (see figures 1 and 2). The total area of these six areas was calculated to be 1 356.2 hectares.



Figure 3: An area where unlawful harvesting of fuelwood is taking place on private land (Photo: Hans Scheepers).

According to Von Maltitz and Schackleton (2004), the annual biome production rate for the study area was established at being 1.25 tons per hectare per year. As such these values represent a biomass production rate of 1 695.25 tons per year for the areas where fuelwood is collected.

It is thus clear from this study that the Bela-Bela Township over-harvesting of fuelwood is taking place. It was estimated that the amount of fuel wood collected from the surrounding areas has more than double the rate at which the natural environment could reproduce itself on an annual basis. This is also visibly noticeable from Plates 1 and 2 where it is clear that almost all the woody vegetation has been removed from the area.

Table 4: Estimated number of households using fuelwood.

	Number of Households*	% collecting fuelwood	Estimated number fuelwood collectors
Formal housing units	1024	25%	187.7
Informal housing units	2094	78.1%	1175.9
RDP houses	1535	65.4%	660.5
Estimated no of fuelwood collectors		56.2%	2024.1

(Source: Bela-Bela LIDP, 2010)

Conclusion

In this case study of Bela-Bela Township, located in the southern part of Limpopo, a province located in the northern region of South Africa, it was established that there are low levels of education associated with high levels of unemployment in the predominantly female African population. The larger number of female-headed households must be attributed to many men moving to Pretoria and Johannesburg for employment opportunities.

Although electricity is available to the residents of formal and RDP houses in Bela-Bela Township to satisfy their basic needs, it was found that the inhabitants still depend heavily on biomass for cooking and space heating. This case study found that the inhabitants do not use renewable energy source such as solar power. Although there are numerous benefits emanating from the domestic use of electricity, such as a reduction in fire incidents caused by the use of paraffin and candles, these sources of energy are still favoured to a large extent for lighting, cooking and space heating in the township.

More than 56% of the households in Bela-Bela Township are dependent on fuelwood as a source of energy and it is, therefore, clear that this would have an impact on the surrounding environment. This case study estimated that 1 833 kg of fuelwood are used per household per annum – which translated into 3 710 tons of fuelwood that are harvested from the surrounding woodland areas close to the township (less than 1 400 hectares in area, with a biomass reproduction rate of 1 695 tons per year).

As a result of the fact that the inhabitants of Bela-Bela Township harvest more than double the amount of fuelwood that the environment can reproduce on a yearly basis, the natural environment is heading towards a man-made disaster associated with the deforestation of the area. Finally, with no indication that the economic status of the inhabitants of Bela-Bela Township will improve in the near future, the demand for fuelwood will remain very high and the inhabitants will have to travel further afield and cover larger distances to collect fuelwood and most probably do so illegally from privately-owned land, as is the current practice.

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Indian herbs and trees grown and traded in Cochin, in the 16th century and nowadays

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Abstract: In 1498 the Portuguese navigator Vasco da Gama reached Calicut (now Kozhikode), in search for an alternative sea route to import spices from India. In 1516, a medicinal herb expert, Tomé Pires, was requested to look for about two dozens of species that the kingdom of Portugal needed from Cochin. Following the spice route the Portuguese Tropical Research Institute (IICT) recently organized a scientific mission to Kerala so as to compare the fruits, vegetables, tubers, and medicinal plants gardenized in front and backyards, traded in fairs and shops, and recommended by Ayurvedic medicine practitioners in the city of Cochin. Results show that only four species that are grown or traded locally were part of Pires quest in 1516. However, a good number of plants collected during the 2013 survey in Cochin were already used in India in the 16th century, as another Portuguese herb doctor found in 1563, Garcia de Orta. The IICT team uses a comparative method that puts localism at the service of abstraction. Previous surveys have targeted Latin American cities and metropolitan regions. The research hypothesis is that gardening and peri-urban farming contribute to generate resilient agglomerations, because they provide income and health to the poor and constitute spaces that regulate water cycles and produce oxygen, therefore creating urban sustainability. Results show that Indian *Ocimum sanctum* is the most gardenized medicinal herb; Banana and mango the most consumed fruits; Curry and chilli are the top ranking spices in use in Cochin. The survey collected eighty-eight different taxa, half of which are gardenized in front and backyards, using organic fertilization. Prescriptions reported in this contribution prove that families integrate traditional medicinal practices, so as to mitigate pains and aches.

Introduction

The 27th January 1516 a Portuguese herb trader settled in Cochin wrote a letter to the Portuguese king D. Manuel, with a list of twenty-four solicited oriental items (Pires, 1516), 75% of which were vegetable medicinal species. The “boticario” (pharmacist) as his profession was named in Portuguese, descended from a family of curative remedies manufacturers, and he was already over forty years old when he arrived in India. The faith the king had in his judgement was due to the fact that his father had been the pharmacist of the late king D. João II (Cortêsão, 1978). Pires was later chosen as the first European ambassador to China, where he died, according to some authors in 1524 and others in 1540 (Cortêsão, 1978; Pinto, 1946).

The same year Pires wrote the spices letter to the Portuguese king, another noble traveller published his notes; it was an ethnographic study where again the herbs and spices the Europeans wanted from India were named, together with the locations where they were both produced and exported to Lisbon, meaning the coast of Malabar, Cochin being the second most important port. The work was named “The Book of Duarte Barbosa” (1516) and in this manuscript we can count a number of spices, i.e.: areca, black pepper, coconut palms, ginger, cardamom, chebulic myrobalans, purging cassia, zedoary, most of them also cited in Pires writings, whereas they constituted the oriental vegetable species the trade routes gave primacy, those days (Duarte Barbosa, 1516).

In 1563 a Portuguese herb doctor that had lived in Goa for three decades published the book of the “Simples and Medicinal Drugs from India” describing over eighty medicinal plants (Orta, 1563). Using these references, the IICT organised a scientific mission to Cochin, in order to examine the simples and medicines still in use today. The research project continued a long quest for traditional medicinal practises, initiated in Latin America in 1998 (Madaleno, 2000), under the hypothesis that gardening contributes to generate resilient agglomerations, because they provide income and health to the less wealthy households and constitute spaces that regulate water cycles and produce oxygen, therefore contributing to the sustainability of the cities.

Methodology

Field research took place in Cochin. The author also travelled through the state of Kerala, in order to visit spice and tea farms, which permitted the identification and illustration of some plant species that were traded in markets and fairs, in the 16th century as today, and that are not gardened within city limits, due to their size (betel nut trees), or the industrial character of farming (cardamom, mace and nutmeg). The survey consisted of fifty interviews to three types of informants residing in the Indian city of the spices coast: 1) Forty urban gardeners that grow fruit trees, vegetables, tubers and medicinal species in their front and backyards; 2) Eight formal and informal herb and fruit traders; 3) One Ayurvedic medicine doctor and one practitioner. Simultaneously, the author collected an extensive photographic record of the plant species, in order to provide data that permits further field research in Kerala, and elsewhere in India.

Results and Discussion

As Michael Betty wrote: “Cities do not exist in benign environments and cannot be easily closed from the wider world, they do not automatically return to equilibrium for they are forever changing, indeed they are far-from-equilibrium.” (Betty, 2012, p. 9). Therefore the author considers that the notion that cities are biological systems, possessing the complexity and evolving as living beings, such as Brian Berry characterised them in the second half of the 20th century (Berry, *et al.*, 1970; Carter, 1975) is far from authenticity. More recently, the social-ecological approach started perceiving cities as systems where human interaction tended to the equilibrium, evolving from the initial paradigm of Berry in an integrative way (Levin 1998; Grim, *et al.*, 2008). However, and recovering the wise words of Betty: “What has been realised in the last 50 years, is that this notion of systems freely adjusting to changed conditions is no longer valid, in fact it never was. Cities admit innovation, indeed they are the crucibles of innovation, they generate surprise, they display catastrophes.” (Betty, 2012:9).

Rather than switch between ethnographic specificity and scientific generality, as the Chicago School did, or to adhere to the ecosystem approach, the IICT team uses a comparative method to put localism at the service of abstraction (Evans, 2011). Cities are perceived as complex environments where human culture, behaviour and institutions fight for space over time in order to construct sites suitable (if not agreeable) for living and working that might be sustainable. In fact human livelihoods in the urban realm are sometimes in communion with nature, while others develop that are in conflict with it; But people, meaning the residents, tend to develop together with the built and even the non-built environments. That is where gardening and peri-

urban farming, often regarded as an oxymoron, co-exist, and contribute to the creation of resilient neighbourhoods (Santandreu, *et al.*, 2009; Madaleno, 2012).

As Saskia Sassen noted, some cities had the capacity to by-pass the national and became global, centuries ago (Sassen, 2010). That was the case of Cochin, located in the spices coast, known as an important trade post since Middle-Ages that became a vital port to export oriental plant species to Europe, during the Portuguese maritime expansion, initiated in the fifteenth century. Some authors call the phenomena the first globalisation phase, because European Iberian peoples not only enlarged the scientific and cartographic knowledge about other continents, new (the Americas) and old (the extreme-oriental Asia), but also intensified trade between European ports and other remote locations (Braga de Macedo, 2003; Pereira, 2007; Newitt, 2009). From the three mentioned Portuguese manuscripts we can make a fair idea of the magnitude of the delegations sent to India and China, for instance, as to the vital role of the route of spices (Pires, 1516; Duarte Barbosa, 1516; Orta, 1563; Griffin and Evans, 2008).

Agriculture is a science and a business of cultivating the soil, of producing crops, and of raising livestock (Songkhla and Somboonsuke, 2013). Animal farmers are usually not permitted within city limits, for sanitary reasons, but cattle, and particularly poultry, sometimes pigs are widely perceived in Asian cities, Indians being no exception (Nunan, 2000; Bentinck, 2000). The intra and peri-urban cultivation, tagged as urban agriculture (UA) has been researched from the midst of the 20th century (Vennetier, 1961) and has evolved during its last decade with the adoption of the phenomenon by European and Canadian research centres, as by the United Nations (Tinker, 1994; Mougeot, 1994; Smit, 1996; UNDP, 1996).

The importance of urban gardening and peri-urban farming stems from the fact that it is a food security option for less-wealthy households; UA provides medicinal plants that mitigate mild health problems; UA permits to recover solid and liquid wastes; UA makes productive the urban open spaces, diminishing the possibility to accumulate garbage and the proliferation of undesirable insects, snakes and rats; UA permits to manage freshwater resources more effectively (Mougeot, 2000); UA beautifies the cities favouring pollination and species diversity; UA improves the capacity of infiltration and therefore diminishes the impacts of both flooding and desertification (Fadul, 2010; Madaleno and Gurovich, 2004). Recent trends in research focus the impacts of the financial crisis of 2007/2008 on developing countries, so as to draw recommendations available to interested actors (International agencies, research institutions, municipal governments, etc.) that potentiate more favourable policies in support of urban agriculture (de Zeeuw and Prain, 2011).

Urban agriculture is usually a small-scaled activity that tends to be organic because the production is destined to households that have no financial resources to buy chemical fertilisers. In India, and among believers in Hinduism, the refusal to apply chemicals is also a religious and cultural option (Pushpanath, 2005). As table 1 proves, wastes are frequently added as input, contributing both to diminish the accumulation of garbage and pollution in the urban realm, and to sustain economically the practise of growing fruit trees, spices and medicinal species in the home gardens. However, cow manure is the top ranking fertiliser, which has a cultural foundation as the sacred animals are not omnipresent in the streets, as in old days, yet they are still worshiped and thus Indians tend to prefer their excrement to fertilise the gardens (Bentinck, 2000).

Overall, 72.5 percent of the interviewed gardeners used organic fertilisation, mostly (37.5% of the 40 gardeners) used cow dung, as said. Twenty five percent of the informants didn't fertilise their gardens. Only one gardener used chemicals. About a half had a well to irrigate the produce. Water is a scarce commodity even in this tropical humid environment and thus the gardens are mostly irrigated with the groundwater available in each household plot. Cochin is located in Southern India and has 601,574 inhabitants (Kerala, 2011).

Municipal bodies in India struggle with lack of financial resources to deal with the pollution, garbage collection, water management and distribution, in addition to social and economic constraints the less-wealthy families demonstrate (Deshkar, *et al.*, 2011). Cochin is a city of immigration for several decades, mostly to the United Kingdom and the United States of America, which favours the existence of small houses with gardens, because the extended family is dominant and there is a constant flow of remittances that benefits the remainder. Moreover, Cochin has a tradition of civil struggle and urban residents frequently participate in politics and in all kinds of institutions, of religious, cultural or social character (Pushpanath, 2005). In this sense the country is a very rewarding choice for this type of studies, as the sample outcomes have proven.

Table 1: Fertilization of the Indian Gardens of Cochin (Source: Survey, 2013).

Type of Fertilisation	Nº	%
Organic	29	72.5
Cow manure	15	37.5
Composting tank	4	10
Vegetable wastes	5	12.5
Ashes	1	2.5
Organic soil	2	5.0
Animal wastes	1	2.5
Chemical	1	2.5
No fertilisation	10	25
Total	40	100

Current survey results gathered evidence about the consumption of eighty-eight different plant species, half of which were gardened and consumed by the interviewed. Only four coincide with Pires list (Pires, 1516), six with Duarte Barbosa ethnography (Duarte Barbosa, 1516), whilst thirty-two taxa cited by Orta are still used as simples, in India (Orta, 1563). The botanical name follows the Missouri Botanical Garden norm, scientifically consensual and easily available online. Vegetable consumption prevents malnutrition and improves food security. A large number of species may fall into this category from the roots, tubers, to leafy vegetables and also tree leaves (Gura, 1995).

In this study I found no evidence to support the idea that fresh produce from front and backyards is traded in local markets. Barter among neighbours is a common practise all over the world, particularly in case of therapeutic plant species (Madaleno, 2000, 2011, 2012; Handa, 1998). However I must stress that medicinal plants, fruits and vegetables recorded during field research are solely destined to the consumptions of extended families. Table 2 provides the top ranking plant species gardened and consumed by local residents, along with the main therapeutic uses, when applicable.

Tulasi, an Indian species used for prayer in Hinduism, was found to be central in thirty of the forty gardens surveyed. Even in several Christian households I found *Ocimum sanctum* because of its benefits against colds and throat infections. Other relevant plants gardened were neem, panikoorka, jasmine, hibiscus, aloe and turmeric. As to the fruit trees banana, mango, papaya, coconut, jackfruit, pomegranate, and tamarinds were also photographed in the home gardens. Other consumptions supported on household production were colocasia, pepper, chilli, ginger and curry. Cochin has a hot and humid climate, with two seasons, the monsoon from March to June and the dry season from July to February. Temperatures range from 17° to 37° centigrade.

Table 2: Fruits, Vegetables, and Medicinal Plants from Cochin (Source: Survey, 2013).

Common name (in Malayalam)	Botanical name	Nº	Medicinal uses
Sacred Holy Basil <i>Tulasi</i> , <i>Krishna Tulasi</i> , <i>Tulsi</i>	<i>Ocimum sanctum</i> L. LAMIACEAE	30	Analgesic, anti-diarrhoeal, anti-diabetes, anti-cough, anti-pyretic, aphrodisiac
Banana, Plantain <i>Payam</i>	<i>Musa paradisiaca</i> L. MUSACEAE	19	Diuretic, aphrodisiac and nutraceutical
Mango	<i>Mangifera indica</i> L. ANACARDIACEAE	16	Fruit eaten regularly
Curry Tree <i>Kariveppela</i>	<i>Murraya koenigii</i> (L.) Spreng. RUTACEAE	14	Used as spice. Anti-cough, anti-cholesterol.
Chilli	<i>Capsicum annuum</i> L. SOLANACEAE	14	Used as spice and medicine.
Papaya	<i>Carica papaya</i> L. CARICACEAE	12	Nutraceutical and anticancer
Neem <i>Vepu maram</i>	<i>Azadirachta indica</i> A. Juss. MELIACEAE	11	Wound healing, anti-worms, anti-lice, anti-flu, anti-halitosis, anti-diabetes
Coconut Palm, <i>Thengu</i>	<i>Cocos nucifera</i> L. ARECACEAE	11	wound healing and anti-herpes
Black Pepper	<i>Piper nigrum</i> L. PIPERACEAE	10	Spice, anti-pyretic
Crape Jasmine <i>Nandiyar vatta</i> , <i>Nandiarvattom</i>	<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult. APOCYNACEAE	10	Anti-conjunctivitis and skin healer
Indian Borage <i>Panikoorka</i>	<i>Plectranthus amboinicus</i> (Lour.) Spreng. LAMIACEAE	10	Analgesic, anti-pyretic, anti-flu, anti-cough

Table 3 shows the sixteen vegetable species that were quoted by the 16th century authors as demanding exportations to Europe that current survey didn't find, as they

are not sought or gardened plants in our times. Some of them are, however, part of masalas or ethnic spice mixes, such as asafoetida or purging cassia, but they are no longer consumed as simples, as in the old days. I must stress, however, that the opposite is also true, meaning, several plants that were not cited by the three 16th century authors (Pires, 1516; Duarte Barbosa, 1516; Orta, 1563) were, nevertheless, commonly planted and consumed in India and elsewhere in Asia, because most of them are plants cited in the Bible. Examples are: saffron, celery, garlic, apples, onions, coriander, cumin, nard, incense, myrrh, sandalwood, and sesame (Wlodarczy, 2007; Moldenke and Moldenke, 1952).

Table 3: Vegetable species quoted in the 16th century and uncommon in our days (Sources: Pires, 1516; Duarte Barbosa, 1516; Orta, 1563).

Common name	Botanical name	Uses
Aloe	<i>Aloe soccotrina</i> DC. XANTHORRHOACEAE	Diuretic, purgative
Asafoetida	<i>Ferula assa-foetida</i> L. APIACEAE	Tonic
Camel hay or grass	<i>Cymbopogon Schoenanthus</i> (L.) Spreng POACEAE	Perfume
Cassia lignea	<i>Cinnamomum Cassia</i> (L.) C. Presl LAURACEAE	To ease birth
Chebolic myrobalan	<i>Terminalia chebula</i> Retz. COMBRETACEAE	Purgative
Coco-de-Mer	<i>Lodoicea maldivica</i> (J. Gmelin) Pers. ARECACEAE	Purgative, sedative, analgesic, anti-worms, anti-poison
Coral swirl	<i>Holarrhena antidysenterica</i> (L.) Wall. ex A. DC. APOCYNACEAE	Anti-dysenteric and anti-worms
Incense	<i>Boswellia sacra</i> Flueck. BURSERACEAE	Analgesic and anti-dysenteric
Myrrh	<i>Commiphora myrrha</i> (T. Nees) Engl. BURSERACEAE	Perfume
Nard	<i>Cymbopogon Schoenanthus</i> (L.) Spreng POACEAE	Perfume
Opium	<i>Papaver somniferum</i> L. var. <i>nigrum</i> DC., var. <i>album</i> Boiss. PAPAVERACEAE	Aphrodisiac, used to induce sleep
Purging cassia	<i>Cassia fistula</i> L. FABACEAE	Purgative, anti-scabies, anti-pyretic
Rhubarb	<i>Rheum officinale</i> Baill. POLYGONACEAE	Purgative
Sandalwood	<i>Santalum album</i> L. SANTALACEAE	Perfume and balm
Siam benzoin	<i>Styrax benzoides</i> Craib STYRACACEAE	Spice and balm
Zedoary	<i>Curcuma zedoaria</i> (Christm.) Roscoe ZINGIBERACEAE	Anti-poison

Conclusion

Food and medicinal plant species gardened in Cochin constitute a sustainable activity (Truffer and Coenen, 2012) that contributes to lower air pollution and to improve air quality, to diminish garbage output, as well as to decrease flood risks. Medicinal and aromatic plants have been in use in India for centuries (Sahni, 2000), following ancient Ayurvedic traditions and contributing to the economic sustainability of the less wealthy households. From a total of 88 taxa documented during fieldwork, about 35 species were recorded by all 16th century authors quoted, during their stay in India. Therapies for some (i.e. black pepper) remain unchanged. Medicinal applications listed provide evidence that families in Cochin observe time-honoured medication, associated with the local flora and their religious beliefs, Hinduism being prevalent. Modern medicine is not despised but residents consider Ayurvedic remedies as healthier alternatives, because they are holistic.

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