

Enterprise Proportionalities in the Tourism Sector of South African Towns

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1. Introduction

Determination of the enterprise structures of towns followed by clustering and ordination techniques yielded important information about the similarities/dissimilarities of Karoo towns in South Africa (Toerien & Seaman, 2010). These techniques also revealed important proportionalities in the enterprise structures of towns (Toerien & Seaman, 2012,a), which are subject to 'island effects' (Toerien & Seaman, 2012,b). The proportionalities manifested as constant and statistically significant proportions between the enterprise numbers of some business sectors and the total enterprise numbers of towns. Such proportionalities obviously provide a predictive ability about the enterprise structures of local economies.

Tourism and hospitality enterprises are the link between attractions/tourism products (supply-side) and tourists (demand-side) in any economy. Knowledge about the enterprise structures of the tourism and hospitality sector of towns is, therefore, important. However, the enterprise structures of this sector in relation to the rest of the enterprises of South African towns have not yet been analysed in any great detail, an issue this chapter addresses for a group of towns.

Nel & Hill (2008) used a case study approach in studies of the marginalisation of rural towns in South Africa. Toerien & Seaman (2012b) followed their lead in an analysis of 'island effects' in enterprise development in South African towns. This study also uses a case study approach, focusing on 75 towns in semi-arid and arid South Africa. The primary aim of this chapter is to report on proportionalities in the tourism and hospitality sectors of these towns. In particular, an analysis is presented of the 'proportionality-in-proportionality' phenomenon, which was detected during this study. The practical implications of proportionality phenomena for tourism enterprises and authorities in semi-arid and arid South Africa are discussed.

1.1 Logic of the chapter

Context is firstly provided for the enterprise analysis. This consists of a brief overview of the importance of tourism in South Africa and includes considerations of the tourism challenges of small towns in South Africa. It is followed by a discussion of the history of the Karoo, the home of the towns selected for the study. The methodology to identify the enterprise structures of South African towns and their positioning as 'enterprise ecosystems' and 'enterprise islands' are then presented. The similarities/dissimilarities and proportionalities

of the enterprise structures of 75 towns from South Africa's semi-arid and arid interior are examined through clustering and multivariate statistical techniques. The tourism-related enterprises of these towns are then considered in greater detail. Proportionalities within this sector, including 'proportionality-in-proportionality' phenomena, receive detailed attention. The results are finally discussed and conclusions drawn.

2. Tourism in South Africa

International travel to South Africa surged since the end of apartheid (SouthAfrica.info, 2011). In 1994, the year of South Africa's first democratic elections, only 3.9-million foreign visitors arrived in the country. By 2004, international arrivals had increased to 6.7-million. And in 2007 a total of 9.07-million foreigners visited South Africa, an 8.3% increase over 2006. Tourism was identified as an economic sector that could help to provide much needed employment.

In July 2010, the South African Department of Tourism together with South African Tourism and the Tourism Business Council of South Africa launched a National Tourism Sector Strategy (South African Government, 2011) with core objectives to: (i) grow the tourism sector's contribution to the gross domestic product, (ii) achieve transformation, (iii) provide people with development and decent jobs, and, (iv) entrench a culture of travel among South Africans. Specific aims are: (i) to grow tourism's direct contribution to gross domestic product from an estimated R64.5 billion or 3.2% of gross domestic product in 2009 to R125 billion or 3.5% of gross domestic product in 2015 (exchange rate ~ R7 per US\$), (ii) to grow tourism's total (direct and indirect) contribution to gross domestic product from an estimated R173.9 billion or 8.7% in 2009 to R338.2 billion or 9.4% of gross domestic product in 2015, (iii) to increase the number of foreign arrivals from 9.9 million in 2009 to 13.5 million in 2015, (iv) to increase the number of direct jobs supported by the sector from an estimated 575000 in 2009 to 800000 in 2015, and (v) to increase the number of total (direct and indirect) jobs supported by the sector from an estimated 1.4 million in 2009 to 1.9 million in 2015.

These are formidable targets especially because one-third of South Africa is semi-arid to arid (Cowling, 1986). Travellers regularly perceive this area, regularly referred to as the Karoo, as a 'desert', a badland characterized by heat, dust, overgrazing and marginalized people (Milton & Dean, 2010). The Karoo has also been perceived as: (i) being in economic, agricultural and population decline, (ii) being marginalised through its division into four provinces, (iii) having a denuded landscape, and, (iv) having small town decline (Nel & Hill, 2008).

Such perceptions about an arid area are not unique. Desert economies are internationally characterised by having marginal lands for conventional agriculture, and a high proportion of economic activity in the mining, tourism and service industries (Tremblay, 2006). Their populations are relatively small and sparse, resulting in relatively high service delivery costs (Tremblay, 2006). Typically, tourism is presented as a promising but dangerous form of development, of which the impacts on desert communities are imperfectly understood. Yet, this often takes place in contexts where the number of alternatives (to tourism) is limited and where tourism is likely to compete for resources with other more traditional forms of economic activity (Tremblay, 2006).

Weaver (2001) identified seven attributes that are strongly associated with desert tourism: (i) exceptional geological features and climatic conditions, (ii) wildflower and other episodic floral displays, (iii) ancient, large or unusual vegetation, (iv) caravans or other desert

trekking, (v) indigenous inhabitants, (vi) oases, and (vii) protected areas. On the supply-side quite a lot is known about the tourism attractions and/or products of the Karoo. Maguire (2009) presented a very useful analysis of the attractions of 58 different Karoo towns and villages. The attractions included: geology and landscapes, including mountain passes; palaeontology, archaeology and rock art; architecture; Anglo-Boer War history; literary tourism; Khoisan struggle sites; natural attractions; agricultural attractions; hunting; astronomy; historical interests; food tourism; missionary and church history; and outdoor and adventure tourism.

Atkinson (2010) described the many attractions of the region as follows: space, silence, serenity, a long and interesting prehistory and history, spectacular scenery, great hospitality, different cultures juxtaposed, many different heritage assets, excellent food, authenticity coupled to 'immaturity' as a tourist venue that means that much is unspoilt and non-commercialised, with a rural charm not available in larger urban tourist venues.

On the demand-side, Maguire (2009) analysed the tourist profile of the Karoo. It included: drop-ins who sleep over, retirees on self-drive tours, foreign self-drive tourists, bikers of mixed age groups (local and foreign), people that attend events such as motor bike rallies, endurance runs, car rallies, and festivals, people en route to events who extend their trips, tour groups in luxury buses (mostly foreign tourists), smaller tour groups in mini-buses (mix of local and foreign tourists), clubs and special interest groups on outings to places of interest, owners of recreational vehicle owners, hunters, campers, and families with children. Many different people visit the Karoo for a variety of reasons: nature, tranquillity and solitude, friendly people, openness, fresh air, food, heritage, night skies, ambience, remoteness and cleanness (Atkinson, 2010).

To understand the challenges inherent in an effort to grow the tourism and hospitality sector in arid and semi-arid South Africa, it is necessary to dwell on the general as well as specific problems that face small South African towns, many of which have experienced rapid transformation over the past two decades. This transformation has been assisted by South Africa's re-entry into global markets, changes in transport systems and infrastructure, a greater degree of mechanisation in the farming industry, government policy and global economic change (Centre for Development Support, 2010). As a result many small towns have experienced economic decline and the historical links between commercial farming communities and these small towns have deteriorated. Simultaneously, in-migration of redundant low-skilled farm workers to small towns occurred. This placed considerable pressure on the existing infrastructure of the towns.

Despite the overall concerns related to small towns, a fair number of them have benefited from tourism since the mid-1990s. Clarens (in the north-eastern Free State Province) and Dullstroom (in Mpumalanga Province) were used as case study towns (Centre for Development Support, 2010) to identify important issues associated with the expansion of the tourism and hospitality sectors in small South African towns. Both Clarens and Dullstroom experienced extensive tourism growth since the early 1990s, mainly as a result of an increasing demand for weekend tourism. This benefited local businesses but an increasing number of farmers also diversified into tourism activities. In addition property developers also moved in. However, by the end of 2010 the growth in tourism in Dullstroom had come to a standstill and that of Clarens continued but with definite risks.

Risks identified were: (i) small towns may lose their smallness and natural beauty as a result of rapid and uncoordinated development, (ii) there is deterioration of access routes that

impacts upon tourist visits, (iii) there are demand peaks in local public services that stretch the organisational and technical capacities of small local authorities, (iv) there are quality deficiencies in the services provided, which contribute to: (a) fewer tourists, (b) entice the entry of national and international tourism operators to the detriment of local enterprises, and, (c) contribute to the over-commercialisation of towns, and, (v) a significant number of the poor in the area might not experience any benefit at all from tourism, an issue that remains politically important (Centre for Development Support, 2010).

3. The Karoo and its history

The semi-arid and arid heartland of South Africa, called the Karoo, is large (Figure 1). It stretches about 600 km from east to west and about 600 km from north to south (Atkinson, 2010) and covers approximately 400,000 km² (Nel & Hill, 2008). It has different sub-regions: the Nama-Karoo (northern parts), the Klein-Karoo (southern parts), the Great Karoo (central part) and the False Karoo (in the southern Free State) (Atkinson, 2010). The Karoo is a single ecosystem, sub-divided into a winter rainfall and a summer rainfall area (Cowling, 1986). It borders on other arid areas in South Africa, notably the Kalahari, Bushmanland, Namaqualand, and the Richtersveld (Atkinson, 2010).

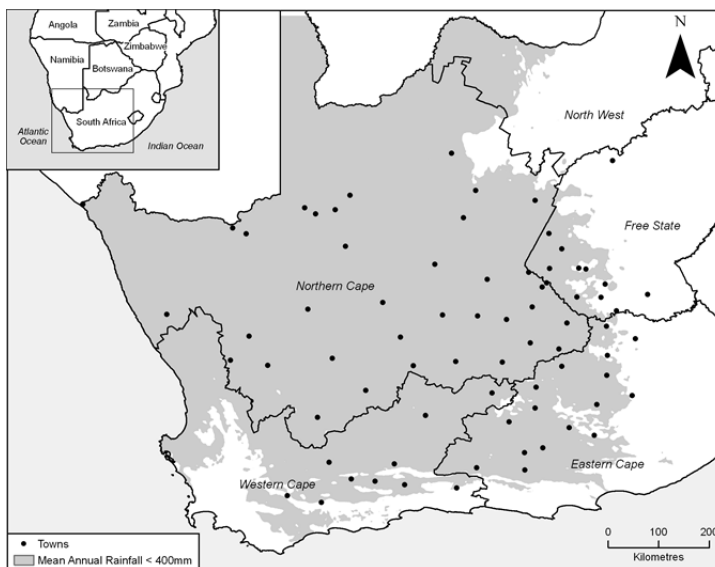


Fig. 1. Map of semi-arid and arid South Africa and the selected towns indicated as dots.

The sheer size of the Karoo means that it has never been administered as a coherent entity, with its own specific needs (Atkinson, 2010). Before 2000, it was administered by rural Divisional Councils and urban Town Councils in the erstwhile Cape Province and Free State Province. Since 2000, it straddles four provinces, each with its own set of priorities.

The Karoo supported hunter-gatherers for about one million years (Deacon & Deacon 2003) and nomadic Khoikhoi herders for more than 1600 years (Boonzaaier et al, 1996; Giliomee & Mbenga, 2007). In 1652 the Dutch East India Company established a victualing station at the

Cape of Good Hope to provide fresh produce and meat to the crews of their ships, thereby establishing a permanent European presence in the south-western Cape (Giliomee & Mbenga, 2007; Guelke, 1979). Their limited capacity to raise stock soon meant that cattle and sheep had to be sourced from the Khoikhoi (Giliomee & Mbenga, 2007). The Company's thrust into the more distant domains of the Khoikhoi consisted of three distinct, though overlapping, phases (Elphick, 1979).

A 'trading frontier' to obtain livestock from the Khoikhoi expanded steadily until about 1700. However, the ability of the Khoikhoi to supply enough livestock also became limited (Elphick, 1979). Secondly, the Dutch East India Company started allocating land that had traditionally fallen under Khoikhoi control and allowed free farmers to settle there (Wickins, 1983). The third frontier was one of semi-nomadic European pastoralists (called 'trekboers') who moved inland (Elphick, 1979). The farmers adopted the agricultural technologies of the Khoikhoi, i.e. the herding of fat-tailed sheep and cattle adapted to local conditions. The 'trekboers' supplied livestock to the Dutch East India Company.

Wool production in the south-western Cape was negligible up to the end of the 18th century. During the next fifty years wool farming became the staple economy of the countryside (Burrows, 1994). In 1830 the Cape Colony exported 15 tons of wool and 22000 tons by 1872. Sheep farmers in the Karoo were part of the wool production system.

There were no commercial reasons to establish towns in the Karoo (Fransen, 2006). Two other needs drove this. Firstly, the authorities had a need for administrative control and they established drostdys (administrative centres) around which villages and later towns developed. Secondly the farmers' needs for religious services drove the establishment of new parishes. As soon as a church was built, some stands were sold, houses built and eventually villages and later towns developed (Fransen, 2006).

For more than a century since 1850 the Karoo and its towns prospered as a result of wool exports (Wickins, 1983). In time, however, overexploitation of the Karoo followed, which by the mid-twentieth century had caused land degradation that led to much concern (Milton & Dean, 2010; Nel & Hill, 2008). Current national policy is to invest preferentially in the geographical areas in South Africa with the highest potential for economic growth. This led to an economic slump in the Karoo in which the smaller towns struggled in contrast to the larger towns (Nel & Hill 2008). Tourism is increasingly seen as a business sector that can help Karoo towns to meet their economic challenges (Atkinson, 2010).

4. South African towns as enterprise ecosystems and islands

There is an on-going interest in the role played by evolutionary biology and Darwinism in evolutionary economics (Witt, 2008). Complexity economics, part of evolutionary economics and in contrast to traditional economics, emphasises the influence of entropy on economic systems and the need for energy to reduce entropy and create local order (Beinhocker, 2006). He stated that economic wealth and biological wealth are thermodynamically the same sort of phenomena, i.e. systems of locally low entropy, patterns of order that evolved over time under the constraint of fitness functions. Beinhocker (2006) suggested that enterprises like organisms are subject to Darwinian competition in which the fittest survive. The enterprises present in a town at a specific point in time, therefore, reflect at that time the outcome of the Darwinian competition.

Natural ecosystems have been defined as biotic communities or assemblages and their associated physical environments in specific places (Tansley, 1935). Towns also meet the norms of the above definition of ecosystems, i.e. they house assemblages of enterprises in associated physical environments in specific places (Toerien & Seaman, 2010). As a consequence they can be considered to be enterprise ecosystems, a hypothesis that was tested and accepted for South African towns by Toerien & Seaman (2010).

These authors employed clustering and ordination techniques, frequently used in studies of natural ecosystems, to investigate the similarities/dissimilarities of the enterprise structures of 47 Karoo towns. These techniques revealed six different clusters of towns at a correlation coefficient level of 0.65 and the clusters differed significantly ($P < 0.05$) in some respects. The agricultural products and services, the tourism and hospitality, and the trade sectors were particularly important in defining the clusters. This provided direct evidence that the tourism and hospitality sector is important in defining the characteristics of towns of semi-arid and arid South Africa.

Toerien & Marais (2012) used similar techniques to study the enterprise structures of 122 South African towns and villages with enterprise assemblages that ranged in size from eight to 1830 enterprises. They found that there were marked differences in the enterprise assemblages of towns of similar sizes, which suggested that the ways in which they provided services differed markedly.

Toerien & Seaman (2012a) found surprising proportionalities in most business sectors of 125 South African towns. In most business sectors, but not all, the number of enterprises per town was significantly ($P < 0.01$) correlated with the total number of enterprises per town. Toerien & Seaman (2012b) showed that the Species Equilibrium Model of MacArthur & Wilson (1967), which describes the dynamics of immigrant biological species on islands, is a metaphor for enterprise development in rural South African towns. In short, towns are 'enterprise islands'. Two of their observations are important: (i) there is an equilibrium number of enterprises in a town, which is determined by the population size of the town, and, (ii) there is a balance between the rate at which new enterprises are established in a business sector and the rate at which enterprises disappear from the sector. These observations have numerous implications for local economic development strategies.

5. The enterprise proportionalities of semi-arid and arid region South African towns

5.1 Methods used

Toerien & Seaman (2010) showed that a selection of Karoo towns provided a suitable case study for testing the hypothesis that towns are enterprise ecosystems. Nel & Hill (2008) also used case studies to investigate towns of the eastern Cape. Against this background, seventy five towns from semi-arid and arid South Africa (Figure 1, Table 1) were selected for this study. The selection was made to include towns of different origins and different parts of semi-arid and arid South Africa. It included towns from the Little Karoo, the Great Karoo, the Kalahari and Namaqualand. It also included former administrative centres, 'church towns' (*sensu* Fransen, 2006), mission towns, river towns (located along the Orange River) and mining towns. The reason for this selection was to ensure that the tourism and hospitality enterprises of the semi-arid and arid region could be examined in detail.

| Town | No. | Source* | No. of enterprises | Town | No. | Source* | No. of enterprises |
|----------------|-----|---------|--------------------|-----------------|-----|---------|--------------------|
| Aberdeen | S1 | g | 39 | Loxton | S39 | h | 7 |
| Alexander Bay | S2 | g | 55 | Luckhoff | S40 | h | 16 |
| Augrabies | S3 | g | 41 | Middelburg (EC) | S41 | f | 161 |
| Barkly West | S4 | g | 77 | Montagu | S42 | d | 224 |
| Barrydale | S5 | d | 56 | Murraysburg | S43 | e | 21 |
| Beaufort West | S6 | g | 353 | Nieu-Bethesda | S44 | e | 21 |
| Bethulie | S7 | g | 43 | Nieuwoudtville | S45 | h | 30 |
| Brandvlei | S8 | h | 22 | Noupoort | S46 | i | 30 |
| Britstown | S9 | g | 27 | Orania | S47 | g | 28 |
| Burgersdorp | S10 | g | 115 | Oudtshoorn | S48 | f | 897 |
| Calitzdorp | S11 | d | 54 | Pearston | S49 | h | 19 |
| Calvinia | S12 | g | 110 | Pella | S50 | f | 8 |
| Carnarvon | S13 | g | 58 | Petrusville | S51 | f | 17 |
| Colesberg | S14 | g | 144 | Philippolis | S52 | f | 24 |
| Cradock | S15 | g | 296 | Philipstown | S53 | f | 15 |
| De Aar | S16 | g | 223 | Pofadder | S54 | h | 41 |
| Fauresmith | S17 | g | 22 | Prieska | S55 | g | 108 |
| Fraserburg | S18 | g | 33 | Prince Albert | S56 | h | 82 |
| Gariepdam | S19 | g | 21 | Richmond | S57 | b | 30 |
| Garies | S20 | g | 26 | Smithfield | S58 | g | 35 |
| Graaff-Reinet | S21 | e | 329 | Somerset East | S59 | h | 191 |
| Griekwastad | S22 | g | 31 | Springfontein | S60 | g | 23 |
| Hanover | S23 | g | 22 | Steynsburg | S61 | g | 39 |
| Hofmeyr | S24 | g | 17 | Steytlerville | S62 | g | 30 |
| Hopetown | S25 | g | 70 | Strydenburg | S63 | h | 17 |
| Jacobsdal | S26 | g | 42 | Sutherland | S64 | f | 35 |
| Jagersfontein | S27 | g | 28 | Tarkastad | S65 | g | 42 |
| Jansenville | S28 | g | 47 | Trompsburg | S66 | g | 38 |
| Kakamas | S29 | g | 138 | Uniondale | S67 | f | 42 |
| Kathu | S30 | g | 135 | Upington | S68 | g | 906 |
| Keimoes | S31 | g | 101 | Vanderkloof | S69 | g | 18 |
| Kenhardt | S32 | h | 29 | Vanwyksvlei | S70 | h | 8 |
| Klipplaat | S33 | g | 15 | Venterstad | S71 | e | 18 |
| Koffiefontein | S34 | g | 43 | Victoria West | S72 | a | 74 |
| Ladismith | S35 | d | 88 | Vosburg | S73 | a | 16 |
| Laingsburg | S36 | g | 56 | Williston | S74 | a | 26 |
| Lime Acres | S37 | g | 42 | Willowmore | S75 | e | 49 |
| Loeriesfontein | S38 | h | 29 | | | | |

* Year of telephone directory:

a = 2000/01, c = 2004/05, e = 2006/07, g = 2008/09, i = 2010/11

b = 2002/03, d = 2005/06, f = 2007/08, h = 2009/10

Table 1. The selected towns including their identification numbers, the sources of enterprise listings and the total number of their enterprises.

The rapid method of Toerien & Seaman (2010) was used to determine the enterprise assemblages of the selected towns. All enterprises listed in telephone directories for the different towns (Table 1) were identified and listed in spread sheets. They were then categorized into 19 major enterprise sectors that included economic drivers (including the tourism and hospitality sector) as well as service providers (Table 2). When it was impossible to deduce the nature of an enterprise from its name in the telephone directory and/or from an Internet search via Google, the entry was not used in subsequent analyses. The identified enterprises in every enterprise sector of each town were counted to develop an enterprise assemblage profile for each town.

The clustering and ordination of enterprise assemblages of differing sizes of different towns required normalisation of the data by expressing the numbers of enterprises in each business sector as a percentage of the total number of enterprises in specific towns. The computer software package PRIMER (Plymouth Routines In Multivariate Ecological Research) obtained from PRIMER-E Ltd, Plymouth was used to examine the similarities/dissimilarities of the enterprise assemblages of the selected towns. Pearson correlation coefficients based on normalised data were calculated between each possible pairing of villages and towns, resulting in a correlation coefficient similarity matrix. The matrix served as input to subsequent analyses.

Cluster analyses aim to find “natural groupings” of samples such that samples within a group are generally more similar to each other than samples in different groups and the results can be presented in dendrograms (Clarke & Warwick, 2001; Clarke & Gorley, 2006).

| Sector no. | Economic Drivers |
|------------|---|
| 1 | Agricultural Products & Services Sector |
| 2 | Processing Sector |
| 3 | Factory Sector |
| 4 | Construction Sector |
| 5 | Mining Sector |
| 6 | Tourism & Hospitality Sector |
| | Service Sectors |
| 7 | Engineering & Technical Services Sector |
| 8 | Financial Services Sector |
| 9 | Legal Services Sector |
| 10 | Telecommunications Services Sector |
| 11 | News & Advertising Services Sector |
| 12 | Trade Sector |
| 13 | Vehicle Sector |
| 14 | General Services Sector |
| 15 | Professional Services Sector |
| 16 | Personal Services Sector |
| 17 | Health Services Sector |
| 18 | Transport & Earthworks Sector |
| 19 | Real Estate Sector |

Table 2. The business sectors used in the classification of enterprises.

The complete linkage option of the PRIMER 6 software was used for clustering purposes. The correlation coefficient similarity matrix formed the input. The cluster order of towns was used to examine the strength of specific towns in specific business sectors, especially the tourism and hospitality sector.

Principal component analysis is an ordination technique in which samples regarded as points in a high-dimensional variable space are projected onto 'best-fitting' planes (Clarke & Gorley, 2001). The purpose of the new axes is to capture as much of the variability in the original space as possible, and the extent to which the first few principal components allow an accurate representation of the true relationship between the samples in the original high-dimensional space is summarised by the "percentage of variation explained" (a ratio of eigenvalues). The PRIMER 6 software was also used for the principal component analysis. The correlation coefficient similarity matrix (see above) formed the input of the principal component analysis.

The enterprise numbers of South African towns are not normally distributed (Toerien & Seaman, 2011); hence, non-parametric statistical tests were mostly used to examine enterprise structures. Such analyses do not require assumptions about normal distributions of the data but use rank numbers instead. Kruskal-Wallis, Mann-Whitney and Tukey non-parametric comparisons were used to test for the presence of statistically significant differences between identified clusters of towns. WINKS SDA Software (6th edition) obtained from TexaSoft, Cedar Hill was used for this purpose. Cluster 8 with only two member towns was omitted from these analyses because of its small size.

Once it was established that the tourism and hospitality sector was an important differentiator for the selected towns, more detailed analyses were done on this sector. Firstly, the overall structure of the sector was analysed in terms of enterprise numbers and composition. Thereafter the presence of proportionalities in the sector was examined through the use of correlation and regression techniques. To compare clusters with each other non-parametric tests were used where appropriate. Microsoft Excel and WINKS SDA Software (6th edition) obtained from TexaSoft, Cedar Hill were used for this purpose. Where data such as ratios between sector and total number of enterprises proved to be normally distributed, standard ANOVA analyses were used for comparisons of clusters. WINKS SDA Software (6th edition) obtained from TexaSoft, Cedar Hill was also used for this purpose.

5.2 Results

5.2.1 Cluster analysis of towns

Eight clusters were identified in the selected towns (Figure 2). Based on their enterprise structures there are clearly definite groups of towns in semi-arid and arid South Africa. To understand which business sectors are important in determining the differences between the clusters a principal component analysis was performed.

5.2.2 Principal component analysis

The first five principal components were extracted and the eigenvectors are summarised in Table 3. The tourism and hospitality sector together with the trade sector contributed very

significantly to principal component 1. The opposite signs of their vectors indicated that their influences were opposites, when the one was strong the other tended to be weak.

Principal component 1 explained 37.8 per cent of the variation (Table 4). Principal component 2 explained an additional 10.3 per cent of the variation (Table 4) and the agricultural and trade sectors were its major contributors. Their opposite signs (Table 3) also indicated that when the one was strong the other tended to be weaker. The tourism and hospitality sector and the vehicle sector were medium contributors to this principal component, and in opposite directions. Principal component 3 explained an additional 10.3 per cent of the variation (Table 4) and the agricultural products and services sector, the trade and the vehicle sectors were major contributors to this principal component (Table 3). It is clear that three business sectors, i.e. the tourism and hospitality sector, the agricultural products and services sector and the trade sector contributed by far the most to the differentiation of the towns and in ways that differed from each other (Figure 3).

5.2.3 Testing for statistically significant differences between clusters

To confirm that these sectors were indeed the main differentiators of the selected towns, further statistical tests were necessary. Kruskal-Wallis analyses and Tukey multiple comparison tests of the normalised data confirmed statistically significant differences between tourism and hospitality enterprises of different clusters (Table 5). This was also the case for the agricultural products and services sector (Table 6) and the trade sector (Table 7).

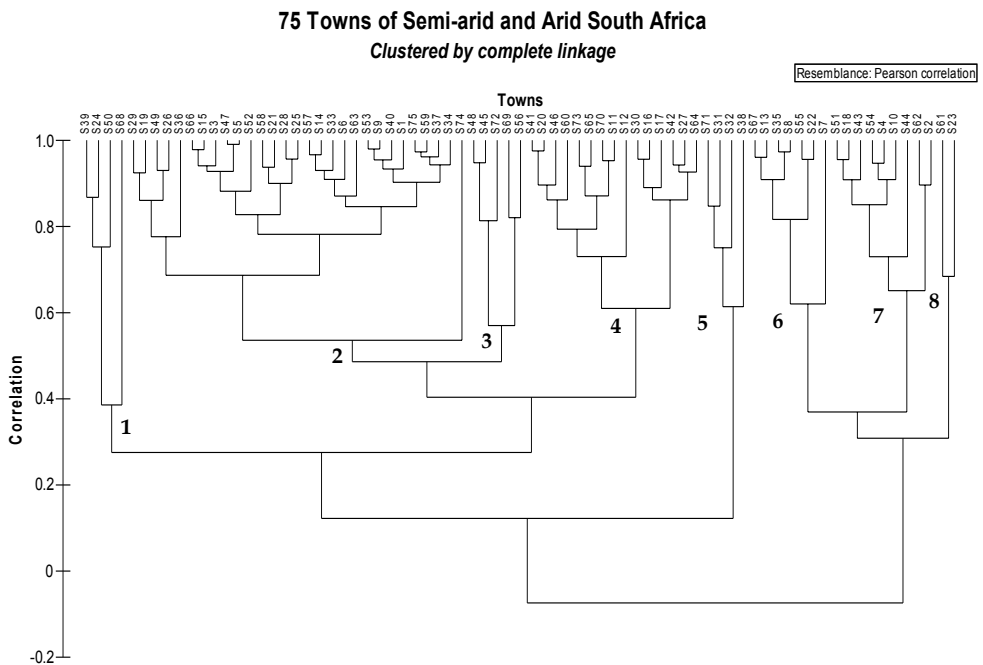


Fig. 2. Cluster analysis of the enterprise structures of 75 towns in semi-arid and arid South Africa (town numbers are presented in Table 1).

| Variable | PC1 | PC2 | PC3 | PC4 | PC5 |
|----------------------------------|--------|--------|--------|--------|--------|
| Agricultural products & services | 0.040 | 0.693 | 0.606 | 0.013 | -0.232 |
| Processing sector | -0.025 | 0.086 | -0.084 | 0.022 | 0.330 |
| Factory sector | -0.002 | -0.015 | -0.013 | -0.027 | 0.015 |
| Construction sector | 0.049 | -0.082 | -0.161 | 0.033 | 0.001 |
| Mining sector | 0.037 | -0.032 | -0.030 | 0.006 | 0.221 |
| Tourism & hospitality sector | -0.894 | -0.257 | 0.157 | 0.016 | -0.184 |
| Engineering & technical services | 0.028 | 0.073 | -0.102 | -0.067 | -0.115 |
| Financial services | 0.074 | 0.057 | -0.253 | 0.400 | -0.272 |
| Legal services | -0.005 | -0.021 | 0.001 | -0.016 | -0.071 |
| Telecommunication sector | 0.013 | 0.035 | 0.042 | 0.022 | 0.067 |
| News & advertising sector | 0.001 | -0.001 | -0.007 | 0.003 | 0.002 |
| Trade sector | 0.402 | -0.610 | 0.457 | 0.214 | -0.277 |
| Vehicle sector | 0.019 | 0.217 | -0.469 | 0.210 | -0.273 |
| General Services sector | 0.052 | -0.018 | -0.097 | 0.327 | 0.198 |
| Professional services sector | 0.010 | -0.014 | 0.145 | -0.055 | 0.528 |
| Personal services sector | 0.128 | -0.064 | -0.173 | -0.706 | -0.352 |
| Health services sector | 0.081 | -0.056 | -0.015 | -0.364 | 0.192 |
| Transport & earthworks sector | 0.026 | -0.019 | -0.060 | -0.040 | 0.074 |
| Real estate sector | -0.035 | 0.028 | 0.060 | 0.010 | 0.148 |

Table 3. The eigenvectors constituting the coefficients in the linear combinations of variables making up principal components 1 to 5.

| Principal Component | Eigenvalues | Variation explained (%) | Cumulative variation explained(%) |
|---------------------|-------------|-------------------------|-----------------------------------|
| 1 | 150.0 | 37.8 | 37.8 |
| 2 | 71.6 | 18.0 | 55.8 |
| 3 | 40.9 | 10.3 | 66.1 |
| 4 | 33.8 | 8.5 | 74.6 |
| 5 | 20.2 | 5.1 | 79.7 |

Table 4. Percentage variation explained by principal components 1 to 5.

75 Towns of Semi-arid and Arid South Africa

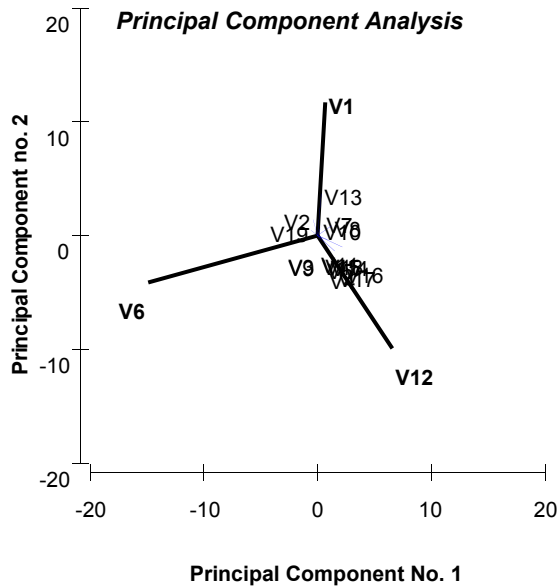


Fig. 3. The contributions of the tourism and hospitality sector (V6), the agricultural products and services sector (V1) and the trade sector (V12) to the differentiation of 75 towns of semi-arid and arid South Africa.

Different clusters of towns clearly depended in different ways upon the tourism and hospitality sector. However, it was not clear how that impacted precisely upon the enterprise structures of the towns. This required a more detailed examination of the tourism and hospitality sectors of the towns of semi-arid and arid South Africa. The possible presence of proportionalities in the tourism and hospitality sector of the region as well as in the clusters of towns was, therefore, investigated.

| | | | | | | |
|--|---|---|-------|---|---|---|
| Kruskal-Wallis test: $H = 42.25$, $\chi^2 = 42.3$ with 6 degrees of freedom. Significant at $P < 0.001$ | | | | | | |
| Tukey multiple comparison | | | | | | |
| 1 | 5 | 2 | 3 | 4 | 6 | 7 |
| _____ | | | _____ | | | |

Table 5. Kruskal-Wallis analysis and Tukey multiple comparison of the tourism and hospitality sectors of clusters 1 to 7. Clusters connected by a continuous line in the Tukey comparison do not differ significantly at $P = 0.05$.

| | | | | | | |
|---|---|---|---|---|---|---|
| Kruskal-Wallis test: $H = 16.99$, $\chi^2 = 17.0$ with 6 degrees of freedom. Significant at $P < 0.01$ | | | | | | |
| Tukey multiple comparison | | | | | | |
| 3 | 2 | 6 | 4 | 7 | 1 | 5 |
| | | | | | | |

Table 6. Kruskal-Wallis analysis and Tukey multiple comparison of the agricultural products and services sectors of clusters 1 to 7. Clusters connected by a continuous line in the Tukey comparison do not differ significantly at $P = 0.05$.

| | | | | | | |
|--|---|---|---|---|---|---|
| Kruskal-Wallis test: $H = 36.68$, $\chi^2 = 36.7$ with 6 degrees of freedom. Significant at $P < 0.001$ | | | | | | |
| Tukey multiple comparison | | | | | | |
| 5 | 7 | 6 | 1 | 4 | 3 | 2 |
| | | | | | | |

Table 7. Kruskal-Wallis analysis and Tukey multiple comparison of the trade sector of clusters 1 to 7. Clusters connected by a continuous line in the Tukey comparison do not differ significantly at $P = 0.05$.

5.2.4 The tourism and hospitality enterprises of semi-arid and arid South African towns

5.2.4.1 Number of enterprises

The 75 selected towns had a total of 6441 listed enterprises of which 901 (14 per cent of total) belonged to the tourism and hospitality sector (Table 8). The sector is, therefore, an important but not dominant business sector in these towns. Its importance stemmed partly from its contribution to the differentiation of towns of the region.

Enterprises of the accommodation/conference sub-sector numbered 601 or two-thirds of all enterprises in the tourism and hospitality trade (Table 8). The restaurant sub-sector was next most plentiful (120 enterprises). The enterprises of the 75 towns were not normally distributed; there were more smaller than larger towns. The median town had only 38 enterprises in total. The median enterprise number per town for the tourism and hospitality trade was only six, for the accommodation/conference sub-sector it was four, and for the restaurant sub-sector it was one enterprise (Table 8).

5.2.4.2 Proportionality in the tourism and hospitality sector

Because the tourism and hospitality sector is an important differentiator of the towns of semi-arid and arid South Africa, there should be significant differences between the clusters of towns identified in Figure 2. Toerien & Seaman (2012a) reported the presence of proportionalities in the enterprise structures of 125 South African towns, a phenomenon that was further examined here for the tourism and hospitality sector. Proportionality occurred in the 75 towns as shown by a significant ($P < 0.01$) correlation and a regression equation that explained almost 86 per cent of the variance (Figure 4). The number of tourism and

hospitality enterprises in towns was clearly related to the size of the total enterprise structures of these towns. The data points of Figure 4 showed quite a bit of scatter which raised the question whether proportionality was also present in the different clusters?

| Enterprises | Total no. in region | Median no. per town | Maximum no. per town |
|---|---------------------|---------------------|----------------------|
| Total enterprises | 6441 | 38 | 906 |
| Total tourism & hospitality sector | 901 | 6 | 134 |
| Accommodation & conference establishments | 601 | 4 | 72 |
| Restaurants | 120 | 1 | 27 |
| Nature reservations/attractions | 61 | 0 | 16 |
| Tour operators | 31 | 0 | 7 |
| Roadstalls/coffee shops | 29 | 0 | 4 |
| Taverns | 20 | 0 | 5 |
| Museums | 18 | 0 | 3 |
| Information offices | 8 | 0 | 1 |
| Rental/reservation agencies | 6 | 0 | 2 |
| Catering | 5 | 0 | 1 |
| Health spa | 1 | 0 | 1 |
| Holiday club | 1 | 0 | 1 |

Table 8. The regional total number of tourism and hospitality enterprises in the selected towns.

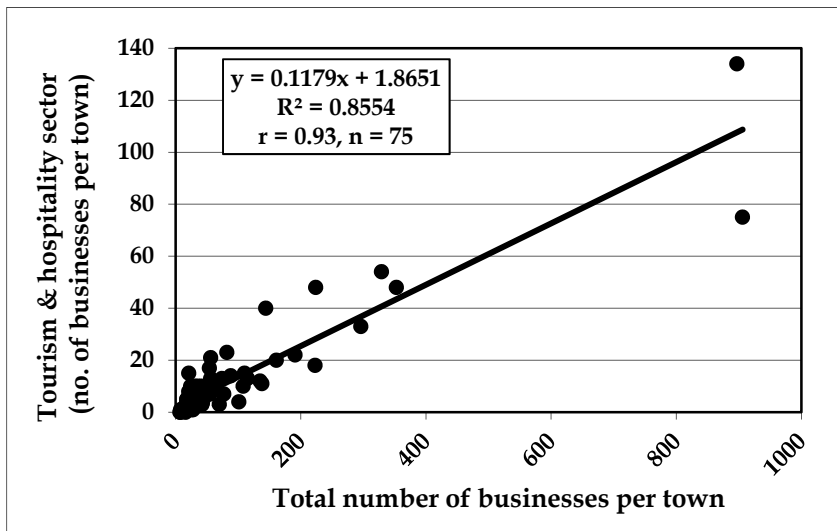


Fig. 4. Proportionality in the tourism and hospitality sector of 75 semi-arid and arid South African towns.

Regression analyses indicated that this was indeed the case (Table 9). With the exception of cluster 3 all clusters showed statistically significant correlations between the number of enterprises in the tourism and hospitality sector and the total number of enterprises and large parts of variances (> 70 per cent) were explained. Proportionality therefore also extended to groups of towns with similar enterprise structures.

Importantly the slopes of the regression equations varied by a factor of 7, ranging from 0.04 for cluster 1 (equivalent to four per cent of all enterprises) to 0.282 for cluster 6 (equivalent to 28.2 per cent of all enterprises)(Table 9). The 'entrepreneurial space' in all clusters for entrepreneurs in the tourism and hospitality sector is a function of the size of towns but there are marked differences in the proportion that this sector contributes to the total enterprise structures of different clusters (see slopes presented in Table 9 and Table 10). Part of the variation in the data points of Figure 4 is, therefore, due to the different contributions of the cluster regression lines to the regression line for the whole sector (Figure 5). Figure 5 illustrates two important phenomena: (i) there is proportionality of tourism and hospitality enterprises in different clusters with the total number of businesses of towns (note that this is true for clusters with a few such establishments, e.g. cluster 7, or clusters with many such establishments, e.g. cluster 2), and, (ii) there are large differences in the slopes of these regression lines, indicating that the towns of specific clusters are utilising or reacting to tourism opportunities in very different ways.

| Cluster | Correlation | Slope | Intercept | Variance explained (%) | Number | Significance |
|---------|-------------|-------|-----------|------------------------|--------|--------------|
| 1 | 0.90 | 0.040 | 0.15 | 80.3 | 4 | 0.05 |
| 2 | 0.95 | 0.117 | -0.74 | 90.7 | 29 | 0.01 |
| 3 | 0.33 | 0.114 | 0.49 | 10.7 | 5 | NS |
| 4 | 0.97 | 0.175 | -1.68 | 93.3 | 15 | 0.01 |
| 5 | 0.95 | 0.135 | -0.76 | 90.2 | 4 | 0.01 |
| 6 | 0.99 | 0.282 | -0.98 | 98.8 | 7 | 0.01 |
| 7 | 0.84 | 0.225 | 4.66 | 70.4 | 9 | 0.01 |

Table 9. Regression analyses of the number of tourism & hospitality enterprises per town (dependent variable) and the total enterprises per town (independent variable) for all clusters of towns (NS = not significant).

However, are the differences statistically significant? To answer this question the ratios of tourism and hospitality enterprises to total enterprises for the towns of the different clusters were calculated and examined for normality. Once it was known that the ratios were normally distributed within clusters 2, 4, 6 and 7 (the larger clusters), a one-way analysis of variance (ANOVA) was performed to test a null hypothesis that the average mean values across the different clusters were equal. This was followed by a Newman-Keuls multiple comparison test.

Table 10 summarises the average ratios of the clusters. The ANOVA indicated that the averages were significantly different. The F-value of 37.49 at 56 degrees of freedom was significant at $P < 0.001$. The Newman-Keuls multiple comparison indicated that the ratio of cluster 7 was significantly higher than the ratios of clusters 2, 4 and 6. The ratio of cluster 6 was significantly higher than those of clusters 2 and 4 (Table 10).

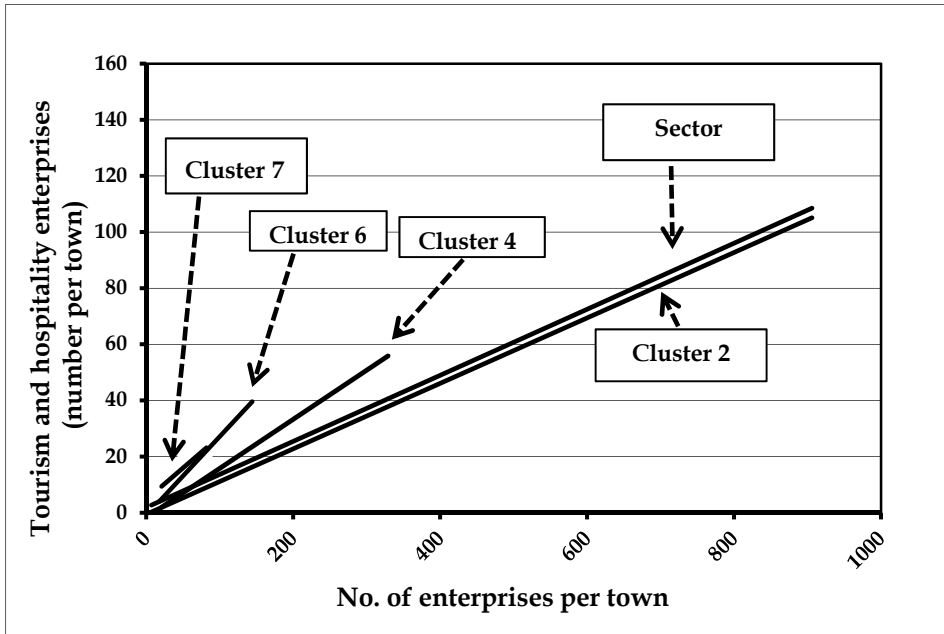


Fig. 5. The regression lines of tourism and hospitality enterprises of selected clusters in relation to the regression line for the whole tourism and hospitality sector (note: all of the regression lines were statistically significant [P < 0.05]).

| Averages and standard deviations | | | |
|---|---------|--------------------|--------------|
| Cluster | Average | Standard deviation | No. of towns |
| 2 | 0.1090 | 0.0442 | 29 |
| 4 | 0.1417 | 0.0505 | 15 |
| 6 | 0.2509 | 0.0546 | 7 |
| 7 | 0.3717 | 0.1398 | 9 |
| Newman-Keuls comparison of clusters | | | |
| <div style="display: flex; justify-content: space-around; align-items: center;"> 2 4 6 7 </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border-top: 1px solid black; width: 100%;"></div> <div style="border-top: 1px solid black; width: 30%; margin-left: 150px;"></div> <div style="border-top: 1px solid black; width: 20%; margin-left: 100px;"></div> </div> | | | |

Table 10. The average ratios of tourism and hospitality enterprises to total enterprises of the towns of clusters 2, 4, 6 and 7 and the outcome of a Newman-Keuls comparison. Clusters linked by a continuous line are not significantly (P < 0.05) different from one another.

5.2.4.3 'Proportionality-in-proportionality' in the tourism and hospitality sector

The next question was whether proportionalities also extended to sub-sectors of the tourism and hospitality sector. For this part of the investigation the two most important sub-sectors (representing 80 per cent of all enterprises in this sector [Table 8]) namely: (i) accommodation and conference establishments, and, (ii) restaurants, were investigated.

Some clusters of the accommodation/conference sub-sector exhibited significant proportionality with the total number of enterprises of towns and there were marked differences in the slopes of the regression lines (Table 11, Figure 6). Two clusters (1 and 3) did not show significant proportionalities (Table 11).

Were the differences between the ratios of the number of enterprises with accommodation/conference facilities and the total number of enterprises of the clusters of the sub-sector statistically significant? To answer this question the ratios were subjected to Kruskal-Wallis and Tukey non-parametric comparisons (Table 12).

The ratios of cluster 7 were significantly ($P < 0.05$) higher than those of clusters 1, 2 and 5 but not higher than the rest of the clusters (Table 12). The ratios of cluster 6 were significantly ($P < 0.05$) higher than those of cluster 1. The results suggested that the 'richness' (reflected in the ratio between sub-sector enterprises and total enterprises) of accommodation/conference facilities in clusters 6 and 7, is quite different to those of the other clusters. Calculation of average ratios for the clusters provided evidence of three tiers of 'richness' of accommodation/conference establishments: (i) below 7.5 per cent (cluster 1 and 5), (ii) ten to 16 per cent (clusters 2, 3 and 4), and (iii) above 25 per cent (clusters 6 and 7) of all enterprises per town. This suggested a progressive economic dependence of some clusters on accommodation and conference establishments.

| Accommodation/ sub-sector | | | | Variance explained (%) | No. | P |
|---------------------------|-------------|-------|-----------|------------------------|-----|------|
| Cluster No. | Correlation | Slope | Intercept | | | |
| 1 | 0.77 | 0.022 | 0.38 | 60.0 | 4 | NS |
| 2 | 0.97 | 0.069 | 0.08 | 94.5 | 29 | 0.01 |
| 3 | 0.16 | 0.039 | 1.60 | 2.4 | 5 | NS |
| 4 | 0.96 | 0.113 | -0.57 | 91.9 | 15 | 0.01 |
| 5 | 1.00 | 0.138 | -1.06 | 99.3 | 4 | 0.01 |
| 6 | 0.99 | 0.218 | -0.63 | 97.5 | 7 | 0.01 |
| 7 | 0.80 | 0.142 | 4.26 | 64.3 | 9 | 0.01 |

Table 11. Proportionality of the number of accommodation/conference establishments (dependent variable) with the total number of enterprises (independent variable) in the clusters.

| | | | | | | |
|--|-------|---|-------|---|---|---|
| Kruskal-Wallis test: $H = 38.58$, $\chi^2 = 38.6$ with 6 degrees of freedom. Significant at $P < 0.001$ | | | | | | |
| Tukey multiple comparison | | | | | | |
| 1 | 5 | 2 | 3 | 4 | 6 | 7 |
| | | | _____ | | | |
| | _____ | | | | | |
| _____ | | | | | | |

Table 12. Results of Kruskal-Wallis and Tukey multiple comparisons of the ratios between enterprises with accommodation/conference facilities and the total number of enterprises of clusters 1 to 7. Clusters connected by a continuous line in the Tukey comparisons do not differ significantly at $P = 0.05$.

The accommodation and conference sub-sector also demonstrated the two important phenomena noted for the whole tourism end hospitality sector as a whole, namely: (i) for some clusters there was a proportionality with the total number of enterprises in the towns (or in other words ‘proportionality-in-proportionality’), and (ii) the slopes of regression equations differed markedly between clusters, indicating quite different ‘richness’ patterns (Figure 6, Table 13). Four clusters, i.e. clusters 1, 3, 5 and 7 did not have statistically

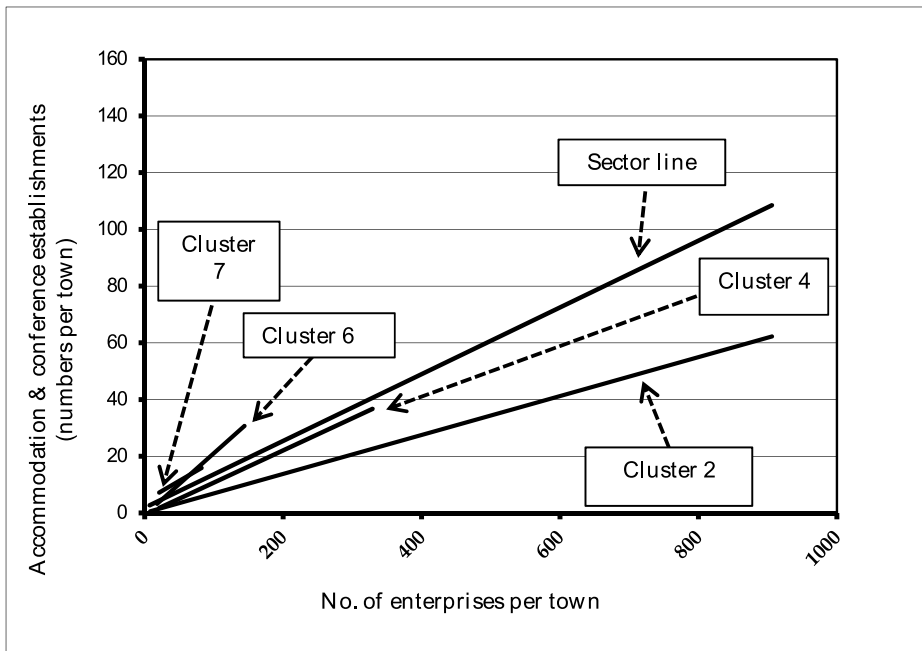


Fig. 6. The regression lines of accommodation and conference enterprises of selected clusters in relation to the regression line for the whole tourism and hospitality sector (note: all of the regression lines were statistically significant ($P < 0.05$)).

significant proportionalities between the number of restaurants per cluster town and the total number of enterprises per town. Clusters 2, 4 and 6, however, did have statistically significant proportionalities (Table 13). The slopes of these regression lines were very similar and not significantly different. The restaurant sub-sector behaved quite differently from the accommodation/conference sub-sector.

| Cluster No. | Restaurant sub-sector | | | Variance explained (%) | N | P |
|-------------|-----------------------|-------|-----------|------------------------|----|------|
| | Correlation | Slope | Intercept | | | |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 4 | NS |
| 2 | 0.90 | 0.021 | -0.51 | 80.5 | 29 | 0.01 |
| 3 | 0.73 | 0.045 | -0.95 | 52.8 | 5 | NS |
| 4 | 0.81 | 0.028 | -0.41 | 64.9 | 15 | 0.01 |
| 5 | 0.0 | 0.000 | 0.00 | 0.0 | 4 | NS |
| 6 | 0.94 | 0.022 | -0.15 | 87.8 | 7 | 0.01 |
| 7 | 0.56 | 0.035 | -0.30 | 31.2 | 9 | NS |

Table 13. Proportionality of the number of restaurants (dependent variable) with the total number of enterprises (independent variable) in the respective clusters.

5.2.4.4 Overview of results

Taken together the analyses (Tables 5 to 13, Figures 4 to 6) present a picture of the different economic strategies that have developed by design or chance in towns of semi-arid and arid South Africa (Table 14). The towns of clusters 6 and 7 are strong in the tourism and hospitality sector, including the accommodation sub-sector, but weak in the trade sector (Table 14). Hereafter we refer to these towns as 'tourist towns'. However, the presence of two town clusters within the 'tourist town' group indicated that a further division should be made.

The composition of the towns of cluster 6 (Brandvlei, Britstown, Colesberg, Hanover, Laingsburg, Richmond and Vanderkloof) includes towns not known as tourist destinations but which are located on national roads or routes between the south and the north of the country. The strong tourism and hospitality sector (Table 10) and particularly the strong accommodation sub-sector (Tables 11 and 12) of this cluster, suggests that the provision of overnight accommodation to travellers is probably the main tourism focus of these towns. They are here referred to as the 'tourist overnight towns'.

The towns of cluster 7 were very strong in the tourism and hospitality sector (Table 10). These towns (Augrabies, Barrydale, Calitzdorp, Gariepdam, Nieu-Bethesda, Nieuwoudtville, Philippolis, Prince Albert, and Sutherland) serve a different niche market than the 'tourist overnight towns'; they are known as weekend and tourist destinations. They are here referred to as 'tourist destination towns'.

The outstanding feature of the towns of cluster 5 is a strong agricultural products and services sector (Table 14). The towns are weak in the tourism and trade sector (Table 5). The cluster includes the towns of Kenhardt, Klipplaat, Loxton and Vosburg, all except Klipplaat being small distant towns of the Great Karoo. Klipplaat is an old railway town in the Eastern Cape which has regressed in step with the demise of steam trains. These

towns clearly have significant interactions with their agricultural hinterlands and hence they are referred to as ‘agricultural towns’.

The towns of cluster 2 (Aberdeen, Alexander Bay, Barkly-West, Beaufort-West, Bethulie, Burgersdorp, Cradock, De Aar, Garies, Griekwastad, Jacobsdal, Jagersfontein, Kakamas, Kathu, Koffiefontein, Ladismith, Lime Acres, Loeriesfontein, Middelburg, Oudtshoorn, Pella, Philipstown, Prieska, Somerset East, Springfontein, Steynsburg, Tarkastad, Upington and Willowmore) are a mixture of small and large towns (Table 1) and have different origins, particularly agricultural and mining origins. The outstanding features of their enterprise structures were relatively weak tourism sectors and strong trade sectors (Tables 7, 10 and 14). They are also relatively weak in their agricultural products and services sector (Table 6).

Hereafter they are referred to as ‘trader towns’. It is interesting that Oudtshoorn, one of the largest towns in the study area and known for its tourism industry linked to the Kango Caves and the R62 tourist route (Erasmus, 2004) belongs to this cluster. However, it illustrates the extent to which this town has also grown the other parts of its economy and acts as a trading hub to the surrounding area. This serves as a reminder that the economic choices between the tourism and other business sectors are not based on either ‘the one or the other’, but balanced growth should be pursued.

| Characteristic | Cluster | | | | | | | |
|---|----------------------------|---------|------|------|--------|--------|--------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Numbers | | | | | | | | |
| No. of towns | 4 | 29 | 5 | 15 | 4 | 7 | 9 | 2 |
| Average no. of enterprises/town | 27.8 | 145.6 | 25.6 | 79.7 | 16.7 | 45.6 | 40.4 | 17.0 |
| Significant differences | | Highest | | | Lowest | | | NI |
| Sector strengths and weaknesses | | | | | | | | |
| Tourism sector | Weak | Weak | | | | Strong | Strong | NI |
| Accommodation sub-sector | Weak | Weak | | | Weak | Strong | Strong | NI |
| Restaurant sub-sector | No significant differences | | | | | | | NI |
| Agricultural Products & Services | | Weak | Weak | | Strong | | | NI |
| Trade sector | | Strong | | | Weak | Weak | Weak | NI |
| Proportionalities (vs total enterprises) | | | | | | | | |
| Tourism sector | P | P | | P | P | P | P | NI |
| Accommodation sub-sector | | P | | P | P | P | P | NI |
| Restaurant sub-sector | | P | | P | | P | | NI |

Table 14. An overview of the strengths and weaknesses and proportionalities of the different clusters (P = the presence of proportionality and NI = not included in comparison).

The only cluster without outstanding business strengths or weaknesses in any sector is cluster 4 (Table 5, 6 and 7) indicating balanced local economies. The towns of this sector (Carnarvon, Calvinia, Faresmith, Fraserburg, Graaff-Reinet, Jansenville, Keimoes, Montagu, Murraysburg, Orania, Pofadder, Steytlerville, Trompsburg, Uniondale, Victoria West) are a mixture of small and large towns (Table 1) of largely agricultural origin. Some of these towns e.g. Graaff-Reinet and Montagu have significant numbers of tourism and hospitality enterprises; however, the remainder of their economies is also well-developed without any sector dominating. Hereafter these towns are referred to as 'balanced towns'. These towns also serve as a reminder that the economic choices between tourism and other business sectors are not based on either the one or the other.

The towns of clusters 1, 3 and 8 are all small and more defined by business weaknesses than strengths. Cluster 1 towns (Luckhoff, Hopetown, Petrusville and Van Wyksvlei) had on average about 28 enterprises (Table 14), were weak in the tourism sector and had no strengths in any other business sector. Cluster 3 towns (Noupoort, Pearston, Smithfield, Venterstad and Williston) had on average about 26 enterprises (Table 14) and were weak in the agricultural sector. Cluster 8 contained only two towns (Strydenburg and Hofmeyr) with on average 17 enterprises and was too small to include in analyses of strengths and weaknesses. However, its closest neighbours belonged to the two tourism clusters (clusters 6 and 7, Figure 2), suggesting that its towns could potentially develop stronger tourism-based economies. Other equally small towns such as Nieu-Bethesda have managed to do just that.

6. Discussion

The promotion of tourism has been identified as a key strategy that can lead to economic upliftment, community development and poverty relief in the developing world (Binns & Nel, 2002). As evidenced by the topics discussed at a conference on tourism in the Karoo (Karoo Development Foundation, 2009) tourism is actively promoted as an additional/alternative economic activity for semi-arid and arid South Africa.

The conference covered a wide range of topics that included considerations of tourism assets (Maguire, 2009). Viljoen (2009) discussed tourist routes in the Karoo and Rademeyer (2009) reviewed adventure tourism, Davids (2009) literary tourism and Rubidge (2009) fossil tourism in the Karoo. Rubushe (2009) discussed funding for the preservation of Karoo heritage whilst Ingle (2009) considered the link between the Karoo and space tourism. However, the tourism enterprises and their relation to other enterprises in the towns of the area received scant attention, yet they constitute the link between the supply-side and the demand-side of the tourism industry of the region.

This study focused on the tourism and hospitality enterprises of semi-arid and arid South Africa and used principal component analysis and clustering to reveal eight clusters of towns (Figure 2). Principal component analysis has been used to reveal clusters of towns based on tourism-related characteristics, e.g. tourism marketing in Romania (Kulcsár, 2010). Toerien & Seaman (2010) also reported the presence of a number of clusters of Karoo towns. Understanding the strengths and weaknesses of different clusters could assist in the formulation of better tourism-based strategies for local economic development in South Africa.

The number of tourism and hospitality enterprises per town was almost always proportional to the size of the total enterprise structures of towns but the ratio of such businesses to all businesses was determined by the type of cluster to which a town belonged (Table 14). In summary: 'tourism destination towns' have relatively more enterprises in this sector than 'tourism overnight towns', which are stronger than 'balanced towns', which are stronger than 'trading towns', which are stronger than 'agricultural towns'.

This study has also demonstrated a proportionality-in-proportionality phenomenon, something that has not been reported before. For some town clusters there is not just proportionality between the number of tourism enterprises and the total number of enterprises in towns of the cluster, but also between components of the cluster such as the number of accommodation/conference establishments and the total number of enterprises. Interestingly this phenomenon was strong in the accommodation/conference sub-sector but less so for the restaurant sub-sector of some clusters (Table 14).

How should the proportionality phenomena be interpreted? Any answer must deal with two issues: (i) the larger a town the more tourism and hospitality enterprise will be present, and (ii) what is the nature of a town, i.e. is it an agricultural, trading, balanced, overnight or destination town? Both issues seem to deal with the magnitude of 'entrepreneurial space' available for the development of tourism and hospitality enterprises. In other words, according to the nature of a town and its total business sector, there is a limited opportunity (or 'entrepreneurial space') for the establishment of tourism-based enterprises and this space is usually well occupied because if this was not the case, proportionalities would not have been observed.

In the case of the tourism and hospitality sector the entrepreneurial space is probably defined by the amount of money that tourists (mostly from elsewhere) are spending in a town. In addition, this study suggests that the reasons why tourists use the facilities of a town also matter. For example, towns of a particular size that attract mostly overnight tourists can expect to have a lower proportion of enterprises in this sector than similarly sized towns that are weekend destinations. The proportionalities should be considered in plans to build the tourism-based economies of towns of semi-arid and arid South Africa because the systemic nature of the industry as outlined above means that merely wishing for increased tourism will not achieve the desired results.

A number of additional factors must also be taken into account. The Centre for Development Support (2010) identified a number of risks for small South African towns dependent on tourism. Firstly, small attractive towns may lose their smallness and natural beauty as a result of rapid development and over-commercialisation. Secondly, deterioration in the condition of access routes lead to a decrease in visitors. Thirdly, tourists are large consumers of basic services and if towns develop capacity or other constraints in meeting these needs in peak periods, tourism is adversely affected. Fourthly if the quality of the service experienced by tourists fluctuates or deteriorates it either scares off tourists or attracts large national and international tourism enterprises to become part of the local tourism scene, to the detriment of local enterprises. Fifthly, although tourism is often associated with positive local development, international experience has shown that this is not invariably the case and that special efforts should be made to ensure that benefits also accrue to the more marginalised communities.

Taken together it is clear that the challenges for the promoters of the South African tourism industry in general but for semi-arid and arid South Africa in particular, are formidable. Atkinson (2009) stated that: "In South Africa little has been done to 'package' and market the many small towns in the rural hinterland. It has always been up to the private sector to develop these tourism products, and due to the difference in economic skills throughout the country there has been a divergence between those towns that 'got it right' and those 'where nothing happens'. In the Karoo, for example, towns such as Prince Albert, Graaff-Reinet and Victoria West are maximising the benefits of their architectural heritage, whereas towns like Loxton and Aberdeen, with fewer entrepreneurial resources, are being left behind". This study has added important additional information about the tourism sector in semi-arid and arid South Africa, which could be used in helping the towns that have been left behind to move ahead.

7. Conclusions

Principal component analysis and clustering techniques were very useful and revealed the presence of eight clusters of towns in semi-arid and arid South Africa. The tourism sector has become important in many of these towns; however, the extent to which they are able to utilise tourism-based opportunities differed.

Balanced towns appear to represent the ideal and have built well-developed enterprise structures in all business sectors, thereby reducing the risk of sudden economic shocks. In these towns tourism is important but is matched by other important business sectors. Tourism destination towns with a very high relative number of tourism-based enterprises might have exposed themselves to potential shocks if factors that entice tourist visits diminish in importance as exhibited by Dullstroom and Clarens (Centre for Development Support, 2010). Tourism overnight towns, mostly located on major national roads are dependent on external factors that regulate the flow of visitors from the south to the north or vice versa. They can do little to grow their tourism-based economies unless they move to become more like destination towns. Trading towns and agricultural towns are not very dependent on tourism and their growth opportunities seem to reside in becoming more like the balanced towns.

More analyses of this kind are needed to develop a fuller understanding of tourism-based opportunities for South African towns.

8. Acknowledgements

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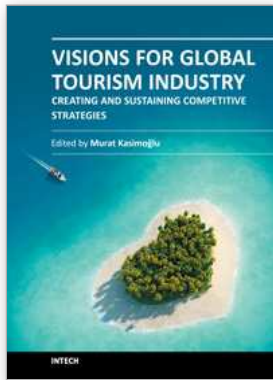
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We have been witnessing huge competition among the organisations in the business world. Companies, NGO's and governments are looking for innovative ways to compete in the global tourism market. In the classical literature of business the main purpose is to make a profit. However, if purpose only focus on the profit it will not be easy for them to achieve. Nowadays, it is more important for organisations to discover how to create a strong strategy in order to be more competitive in the marketplace. Increasingly, organisations have been using innovative approaches to strengthen their position. Innovative working enables organisations to make their position much more competitive and being much more value-orientated in the global tourism industry. In this book, we are pleased to present many papers from all over the world that discuss the impact of tourism business strategies from innovative perspectives. This book also will help practitioners and academicians to extend their vision in the light of scientific approaches.

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