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# Socio-demographic profile and travel behaviour of biltong hunters in South Africa

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This article examines the socio-demographic characteristics and travel behaviour of biltong hunters in South Africa. It attempts to determine the relationship between these factors and local tourist expenditure. In order to achieve the goal, a survey was conducted among members of the three main South African hunting associations. The behavioural variables that exerted the greatest influence on hunter expenditure were the number of hunting trips per year and the length of stay at a hunting destination. The contribution of the research is primarily, that from a methodological point of view, it was the first time that a more advanced statistical analysis has been applied to data concerning biltong hunting in South Africa, and secondly, findings will assist game-farm owners to market and develop their products in order to attract the higher spending market.

## Sosiodemografiese profiel en reisgedragte van biltong-jagters in Suid-Afrika

Hierdie artikel ondersoek die sosiodemografiese eienskappe en reisgedrag van biltong-jagters in Suid-Afrika. Daar word gepoog om die verhouding tussen hierdie faktore en die plaaslike toeriste-besteding te bepaal. Om hierdie doelwit te bereik, is 'n opname onder die lede van die drie vernaamste Suid-Afrikaanse jagverenigings uitgevoer. Die gedragsveranderlikes wat die grootste invloed op die jag-ervaring uitgeoefen het, was die aantal jaguitstappies per jaar en die lengte van verblyf by 'n jag-bestemming. Die bydrae van hierdie navorsing is primêr, gesien uit metodologiese oogpunt, dat dit die eerste keer is dat meer gevorderde statistiese analises toegepas is rakende biltongjagdata in Suid-Afrika en tweedens, sal die bevindinge van waarde wees vir wildplaasienaars in produkontwikkeling om sodoende die hoogste bestedingsmark te bereik.

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Over-consumption of wildlife was commonplace in the age of frontier exploration and expansion towards the end of the nineteenth century, by the end of which wildlife had been virtually annihilated over much of South Africa (Carruthers 1995: 17 & 2005: 192, Beinart 1990: 167). During the first decades of the twentieth century, and particularly from the 1960s onwards, the social, economic and ecological benefits of conserving wildlife were realised. This realisation led to an expanding wildlife and hunting industry in South Africa (Van der Waal & Dekker 2000: 15, Carruthers 2008: 177). The wildlife industry has experienced sustained growth due partly to its contribution to local and national economies and the opportunities generated for rural development (Lindsey 2008: 41, Steenkamp *et al* 2005: 4, 14). This has led to an estimated conversion rate of cattle farms to game farms of approximately 500.000 ha per year until 2002, nearly 200.000 ha more than the average for 1998 to 1999 (Flack 2002: 29).

In South Africa, hunting on private land is divided mainly into two categories, biltong and trophy hunting, of which biltong hunting is the largest economic contributor (R4.4 billion) to the hunting industry (Cloete *et al* 2007: 71, Van der Merwe & Saayman 2003, Van der Merwe *et al* 2007). Biltong hunting can be defined as a cultural activity where wildlife is hunted by means of a rifle, bow or similar weapon for the usage of a variety of meat (venison) products, such as biltong and salami. A biltong hunter is defined as a person who participates in the activity of biltong hunting (Saayman *et al* 2009: vii).

A survey by Van der Merwe and Saayman (2005: 5), involving all active members of the South African Game Farm Association, revealed that the majority of hunters on game farms are biltong hunters. Biltong hunters are an important market segment with an estimated 200,000 participants in South Africa (Damm 2005: 16).

This article aims to determine the socio-demographic profile and travel behaviour of biltong hunters in South Africa. In order to achieve this, the article is structured as follows: a literature review is presented, followed by the method of research, the results indicating the major outcomes of the research, the interpretation and findings. Finally, the main conclusions and recommendations are presented.

## 1. Literature review

Wildlife tourism or nature-based extractive tourism (hunting) is a significant market segment in the rapidly growing tourism industry of South Africa (Van der Merwe & Saayman 2005: 1, Briel 2006: 2, Reilly *et al* 2003: 14). South Africa has a well-established network of national parks and private nature reserves, or game farms, that cover approximately 19% of the country's land area (Van der Merwe *et al* 2007: 184).

To ensure continuous growth and financial viability, among other potential income streams, a private wildlife area (game farm or private nature reserve) needs to encourage the presence of hunters and ensure the satisfaction of their needs (Radder *et al* 2000: 27). Although total satisfaction of hunters' hunting needs is not the aim in itself, striving to achieve this enables the attraction (in this case, a game farm) to attain its own goals (Radder *et al* 2000: 27). Many factors prompt hunters to choose a destination. Understanding these factors is fundamental in marketing a hunting destination.<sup>1</sup>

One accepted strategy for achieving maximum market satisfaction is for marketers and game-farm owners to divide heterogeneous markets into homogeneous groups of hunters. This process is called market segmentation. Market segmentation can assist in the development of hunter profiles as it enables game-farm owners and marketers to concentrate their resources and marketing efforts to achieve maximum market penetration.<sup>2</sup>

Market segmentation can be evaluated in terms of a number of criteria, but the focal point of the approach is to identify the most relevant characteristics of the tourist, or hunter in this instance, seeking particular sets of benefits from his/her travel (hunting) purchase (Jang *et al* 2004: 20, Bloom 2005: 94). Hunter behaviour plays an important role as hunters do not make these hunting purchases in isolation. Aspects such as cultural differences (Crotts & McKercher

1 Cf Lam & Hsu 2006: 589, Seddighi & Theocharous 2002: 475, Reynolds & Braithwaith 2001: 33.

2 Cf Baloglu & McCleary 1999: 892, Pike 2004: 4, Lu & Pas 1999: 12, Hui *et al* 2007: 965, Jonker *et al* 2004: 1.

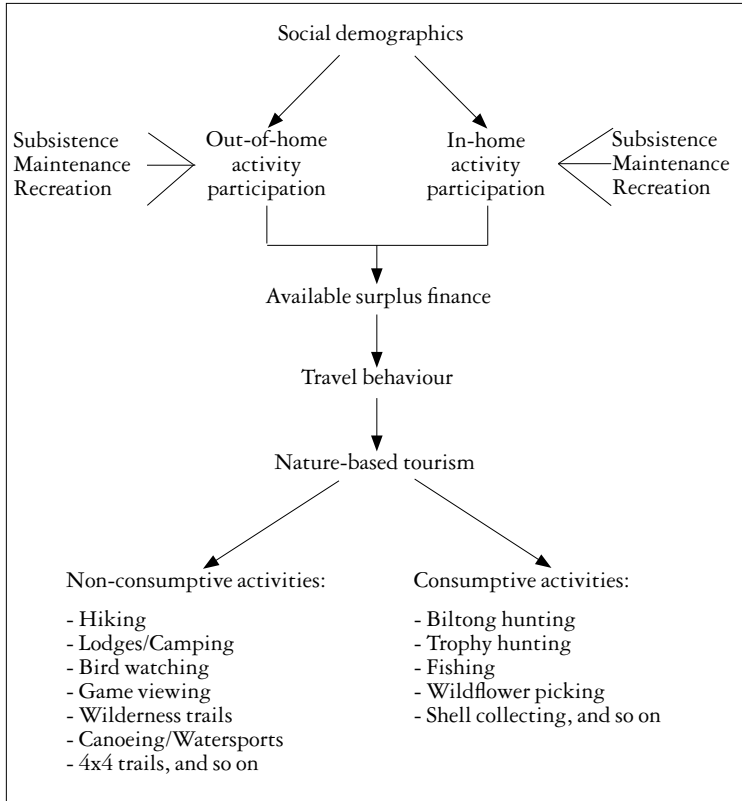
2005: 386), personal factors (Frew & Shaw 1999: 197), psychological factors (Liu 1999: 16), as well as previous experience (Wang 2004: 114) all influence the hunter's behaviour. Plog (2002: 146) and Frew & Shaw (1999: 197) conclude that personality characteristics determine how consumers (tourists) experience the world around them, and that these characteristics determine tourist behaviour. From the research done by Lu & Pas (1999: 2) and from the aspects revealed in the literature review discussed above, a conceptual framework for socio-demographic and travel behaviour of nature-based leisure activities (of which biltong hunting is one) has been compiled (cf Figure 1).

According to Cai (1998: 339), socio-demographic variables can be used to explain tourist behaviour. Cai postulates that there is a significant relationship between variables. By determining the socio-demographic and travel behaviour variables, game-farm owners will be able to develop marketing strategies that will attract high-spending hunters, and this can assist in product development by identifying aspects that are important in the planning and development of hunting products (Baloglu & McCleary 1999: 892, Pike 2004: 4, Lu & Pas 1999: 12). Figure 1 depicts the relation of socio-demographics (age, gender, employment, income, number of children), travel behaviour (number of hunters, travel trips, travel time) and activity participation (work, recreation, travel). Lu & Pas (1999: 8) distinguish between in-home activities (cf Figure 1), out-of-home activities and allocate three sub-divisions for each of these, namely subsistence (work and work-related travel activities), maintenance (meals, shopping and household chores) and recreation. Available/surplus finance will have an impact on in- and out-of-home activities such as hunting. This is an important role player in determining travel behaviour. Travel behaviour influences the type of nature-based tourism encountered (consumptive or non-consumptive).

Marketers must seek to understand visiting patterns of tourists (hunters) as this will provide insight into travel behaviour (Mc Kercher & Lau 2008: 359). Individuals display different behavioural patterns representative of their lifestyles. Categorisation of consumers is based on these differences between individuals (Pike 2004:

4). The unique characteristics of a destination, together with prior experience of a destination, influence the choice to visit a destination (McKercher & Lau 2008: 359).

Figure 1: Conceptual framework for nature-based leisure activities



Adapted from Lu & Pas 1999: 2

Socio-demographic characteristics also influence a tourist's expenditure level. Previous studies on the socio-demographic profiles of tourists were examined and are indicated in Table 1.

Table 1: Key research findings on socio-demographic and travel behaviour in tourism

Author	Title of article	Summary/Main findings	
Park & Yoon 2009	Segmentation by motivation in rural tourism: a Korean case study	Gender Age Income	Education Occupation Number of visits
Bilgic, Florkowski, Yoder & Schreiner 2008	Estimating fishing and hunting leisure spending shares in the United States	Gender Place of residence Race Age	Permits Frequency Number of visits Mode of transport
Del Bosque & San Martin 2008	Tourist satisfaction: a cognitive-affective model	Gender Age Education	Income Household size Occupation
Tassiopoulos & Haydam 2008	Golf tourists in South Africa: a demand-side study of a niche market in sports tourism	Marital status Gender Age Education Occupation	Travel party size Accommodation preferences Mode of transport Length of stay
Saayman & Saayman 2007	Socio-demographic and behavioural determinants of visitor spending at a National Arts Festival: a panel data analysis	Age Occupation Gender Length of stay	Number of visits Attendance of other festivals Reason for visiting
Molera & Albaladejo 2007	Profiling segments of tourists in rural areas of South-Eastern Spain	Age Occupation Education	Mode of transport Travel group size
Boshoff, Landman, Kerley & Bradfield 2007	Profiles, views and observations of visitors to the Addo Elephant National Park, Eastern Cape, South Africa	Language Gender Age Education	Place of residence Number of visits Mode of transport

Author	Title of article	Summary/Main findings	
Kim, Cheng & O'Leary 2007	Understanding participation patterns and trends in tourism cultural attractions	Gender Age Education	Income Number of visits'
Chi & Chang 2006	The determinants of US wildlife-watching consumption: a Tobit analysis	Level of education Age Gender (male)	Income Distance travelled
Chang 2006	Segmenting tourists to aboriginal cultural festivals: an example in the Rukai tribal area, Taiwan	Gender Age Marital status Education Occupation	Income Travel motivation Place of origin Type of tour (package)
Bowden 2006	A logistic regression analysis of the cross-cultural differences of the main destination choices of international tourists in China's main gateway cities	Age Gender Income Education Marital status	Patterns Length of stay Method of booking (tour operator) Expenditure
Saayman & Saayman 2006	Socio-demographics and visiting patterns of arts festivals in South Africa: a matter of sustaining it	Language Culture Race Place of residence Attendance of other festivals	Travel group size Length of stay Expenditure patterns Travel motivation Number of previous visits
Jang & Wu 2006	Seniors' travel motivation and the influential factors: an examination of Taiwanese seniors	Age Gender Marital status	Education Travel motivation
Kastenholz 2005	Analysing determinants of visitor spending for the rural tourist market in North Portugal	Age Length of stay Number of previous visits	Tourist season Travel motivation

Author	Title of article	Summary/Main findings	
Jang, Bai, Hong & O'Leary 2004	Understanding travel expenditure patterns: a study of Japanese pleasure travellers to the United States by income level	Age Education Occupation Travel group size	Length of stay Number of previous visits Expenditure patterns
Kerstetter, Hou & Lin 2004	Profiling Taiwanese ecotourists using a behavioural approach	Age Gender Education	Income Travel motivation
Pike & Ryan 2004	Destination positioning analysis through a comparison of cognitive, affective and cognitive perceptions	Gender Marital status Age Income	Number of children Education Travel motivation
Cannon & Ford 2002	Relationship of demographic and trip characteristics to visitor spending: an analysis of sports travels visitors across time	Age Marital status Family status Income	Travel group size Length of stay Travel distance Place of residence
Cordell, Betz & Green 2002	Recreation and the environment as dimensions in contemporary American society	Age Income Place of residence	Race Culture
Mundet & Ribera 2001	Characteristics of divers at a Spanish resort	Age Gender Occupation Education	Number of previous visits Length of stay Method of booking (self) Tourist motivation
Lee 2001	Determinants of recreational boater expenditure on trips	Education Income	Distance travelled Travel group size
Mok & Iverson 2000	Expenditure-based segmentation: Taiwanese tourists to Guam	Income Occupation Age Marital status Length of stay	Travel group size Travel motivation Mode of transport Type of tour (individual)



Author	Title of article	Summary/Main findings	
Chaudhary 2000	India's image as a tourist destination: a perspective of foreign tourists	Gender Age Marital status	Place of residence Trip motivation Type of tour (package)
Baloglu & McCleary 1999	A model of destination image formation	Age Education	
Barnes, Schier & van Rooy 1999	Tourists' willingness to pay for wildlife viewing and wildlife conservation in Namibia	Income Place of residence Length of stay Travel group size	Mode of transport Accommodation preferences Expenditure patterns

Previous research reveals that the most common socio-demographic variables influencing spending are age, education, gender, income and occupation (cf Saayman & Saayman 2007, Cannon & Ford 2002, Barnes *et al* 1999). In terms of behavioural variables, length of stay, repeat visits, frequency of visits and reason for visiting were the most common criteria (Mundet & Rebera 2001, Bowden 2006). The above review clearly shows a noticeable lack of research in the field of hunting tourism.

## 2. Methodology

The data used for the analysis were gathered over a five-month period between October 2007 and February 2008. The methods used will now be discussed.

### 2.1 The questionnaire

The questionnaire consisted mostly of closed response questions, together with a small number of open-ended questions organised into a number of sections. In Section A, demographic details were surveyed (marital status, age, gender, language, education, occupation, income and province of residence) while Section B focused

on spending behaviour and motivational factors (number of persons paid for, number of times the destination has been visited, length of stay and amount spent). The information obtained from these two sections was analysed.

## 2.2 Method

A non-probability sampling method was followed based on convenience sampling and on willingness to complete the questionnaire. The research population consisted of the members of the South African Hunting and Game Conservation Association (SAHGCA) ( $n=21\ 000$ ), the Professional Hunters Association of South Africa (PHASA) ( $n=1\ 039$ ) and the Confederation of Hunters Associations of South Africa (CHASA) ( $n=18\ 000$ ) ( $n = 40\ 000$ ).<sup>3</sup> The questionnaires were distributed as follows:

Questionnaires were mailed to the members of the SA Hunters and Game Conservation Association along with their monthly magazine (*SA Hunters/Jagers*). An interactive questionnaire was then loaded onto the SAHGCA, PHASA and CHASA websites during September and October 2007.

In total, 676 ( $n$ ) questionnaires were returned via e-mail, fax and overland mail. Maree & Pietersen (2007) state that the number of units ( $n$ ) involved in the sample is more important than the percentage of the total population they represent. An increase in the sample size, in proportion to the size of the population from which the sample is drawn, results in a decrease in the standard error. Even so, it is not necessary to draw a sample larger than 500 as this will have little effect in decreasing the standard error and margin of error (Maree & Pietersen 2007: 10).

## 2.3 Statistical analysis

A regression analysis was conducted using SPSS 16. This analysis determines the relationship between two variables, and a dependent variable is evaluated in relationship with one or more independent variables.

3 The total membership of the above associations.

### 3. Results

The research results of this survey will be discussed in two sections. The first section will detail the profile of a biltong hunter, while the second section will examine the results of the regression analysis.

#### 3.1 Profile of a biltong hunter

Table 2 provides the profile of the typical biltong hunter in South Africa. The majority of biltong hunters are married (89.8%), male (98.8%), Afrikaans-speaking (78.4%), and between the ages of 40 and 65 (64%). Some 37.1% of the respondents have a diploma or degree, 23.3% have a matriculation certificate and 19.6% have a professional qualification. Slightly over a quarter (25.2%) of the hunters are self-employed, 20.3% are professionals and 13.8% are managers. On average, the hunters earn an annual salary of R514 929.42, while their total spending per hunting season, excluding game, is R9 081.45. Their total spending on game during the hunting season is R10 385.74 and the total spending during the hunting season is R19 467.18. The provinces that produced the greatest number of hunters were Gauteng (33.7%), KwaZulu-Natal (13.9%) and the Free State (12.2%). This correlates well with membership distribution of the different hunting organisations that formed part of the research.

Table 2: Socio-demographic profile of biltong hunters in South Africa

Category	Results
Gender	98.8% Male
Language	78.4% Afrikaans
Age	40-65 years old (64%)
Marital status	89.8% Married
Level of education	37.1% Diploma/Degree 23.3% Matriculation certificate 19.6% Professional persons such as doctors and chartered accountants
Occupation	25.2% Self-employed 20.3% Professional 13.8% Managerial
Average income <i>per annum</i>	R514 929.42

Category	Results
Province of residence	33.7% Gauteng 13.9% KwaZulu-Natal 12.2% Free State
Total spending per hunting season excluding game	R9 081.45
Total spending per hunting season on game	R10 385.74
Total spending during hunting season	R19 467.18

Previous research on hunting, in South Africa in particular, include Hattingh *et al* (1988), Olivier (1991), Eloff (1993) and Vermeulen (1994). These studies were all conducted prior to 1994, and it is interesting to note that after 22 years some similarities as well as differences were found between the current and previous research. The following similarities were found: the majority of local (biltong hunters) are Afrikaans speaking, aged between 30 and 50, living in central Transvaal (today Gauteng), provisional and self-employed, undertook more than one hunting trip per year, and stayed for three to four days. The following differences were found: Olivier (1991: 52) found that in the 1980s hunters tended to hunt for longer periods, namely 1-9 days (88.7%); the average group sizes were eight persons; hunters' spending per hunting trip in the 1988 was between R100 and R999 on game, licences and daily fees as well as between R100 and R999 on food, drinks and transport.

The main reasons for hunting were to be in nature, the enjoyment of hunting as a sport, getting away from routine, for meat purposes and the love to hunt. What makes the current research different is that more advanced statistical analyses (regression analysis) were conducted for a better understanding of biltong hunters than the descriptive statistics used in the 1980s and 1990s.<sup>4</sup>

4 Cf Hattingh *et al* 1988, Olivier 1991: 51, Eloff 1993, Vermeulen 1994.

### 3.2 Regression analysis

The results of this analysis revealed that some outliers were detected in association with socio-demographic variables. An outlier is a score/observation that, numerically, lies an abnormal distance from the rest of the data. These outliers can be ascribed to the fact that hunters who are also farmers completed questionnaires, even though they hunt on their own farms. This leads to findings that are not representative of the sample of biltong hunters. This group was therefore identified as anomalous. With anomaly detection, data is identified that deviates significantly from the range of sample values before the data analysis has been processed. Therefore, 27 outliers were excluded from the survey sample of 676.

Table 3 presents the results of the estimation of regression of the determinants of the spending of biltong hunters. The model is a simple linear regression of total spending on a number of quantitative and qualitative determinants of spending. The estimating equation is expressed as follows:

$$Y_i = c + BX_i + u_i \quad (1)$$

where  $Y_i$  represents the total spending by a biltong hunter and  $X_i$  is a vector of the determinants of spending. These explanatory variables may include quantitative variables such as income, total spent during hunting season excluding game, and total spent during hunting season on game. These may also include qualitative variables that indicate the presence or absence of a quality or attribute that may influence total spending on biltong hunting. Such qualitative (or dummy) variables may include indicators of gender, home language, age, marital status, level of education, occupation and province of residence.

The estimation strategy involves estimating a log-linear model using the cross-section data obtained from the survey. The quantitative variables are logged since this compresses the scales in which the variables are measured. It also allows the coefficients to be interpreted as partial elasticity coefficients. An ordinary least square (OLS) estimator is used.

Table 3: Results of regression analysis

Model	Non-standardised coefficients		Standardised coefficients	<i>t</i>	Sig-nificance
	B	Std error	<i>Beta</i>		
(Constant)	2.164	.721		3.001	.003
<i>log_Income</i>	.280	.083	.200	3.374	.001**
<i>Home language</i>	-.055	.070	-.044	-.784	.433
<i>log_Age</i>	-.047	.288	-.009	-.162	.871
<i>Marriage</i>	.002	.127	.001	.016	.987
<i>edu_noschool</i>	.028	.223	.007	.127	.899
<i>edu_degree</i>	-.024	.073	-.022	-.328	.743
<i>edu_postgrad</i>	-.061	.097	-.039	-.628	.530
<i>edu_professional</i>	-.003	.100	-.002	-.026	.979
<i>occu_prof</i>	-.023	.091	-.018	-.257	.797
<i>occu_manager</i>	-.009	.084	-.006	-.103	.918
<i>occu_admin</i>	.101	.188	.029	.540	.590
<i>occu_tech</i>	.099	.115	.047	.861	.390
<i>occu_sales</i>	-.206	.173	-.062	-1.190	.235
<i>occu_farmer</i>	.209	.104	.112	2.003	.046**
<i>occu_mining</i>	-.267	.215	-.067	-1.238	.216
<i>occu_education</i>	-.022	.199	-.006	-.112	.911
<i>prov_gauteng</i>	-.037	.096	-.034	-.383	.702
<i>prov_nw</i>	-.033	.119	-.020	-.274	.784
<i>prov_kzn</i>	-.023	.128	-.014	-.178	.859
<i>prov_ec</i>	-.013	.141	-.006	-.090	.928
<i>prov_nc</i>	-.329	.234	-.077	-1.407	.160
<i>prov_fs</i>	.029	.130	.014	.221	.825
<i>prov_mp</i>	.068	.143	.030	.476	.635
<i>prov_lim</i>	.205	.176	.067	1.167	.244
Prefer to hunt alone or in a group	-.041	.078	-.028	-.526	.599
Number of people in the hunting party	.004	.011	.018	.321	.748

Model	Non-standardised coefficients		Standardised coefficients	<i>t</i>	Sig-nificance
	B	Std error	<i>Beta</i>		
Number of times hunting during the past year	.037	.008	.273	4.912	.000**
Average number of days at the game farm	.057	.016	.183	3.493	.001**
Membership of a hunting association	.088	.109	.042	.810	.418
Type of hunter	-.024	.030	-.043	-.796	.426
Wear camouflage clothing during the hunt	-.027	.058	-.025	-.467	.641

The results presented in Table 3 can be interpreted by examining the coefficients, the standardised beta coefficients and the significance. Standardised beta coefficients allow one to interpret the relative size of the coefficients with larger values indicating more important determinants. In this case, income, the number of times hunting and the number of days spent at the game farm are clearly the key determinants of spending. There are positive and significant relationships between spending and these three determinants. It is also possible to interpret the size of the non-standardised coefficients. The results show that a one per cent increase in income is associated with a 0.28% increase in spending by the average hunter. The table shows that relative to Afrikaans-speaking hunters, English speakers spend more, and relative to single hunters, the married ones spend more. These relationships are, however, not statistically significant. There is a negative and insignificant relationship between age and spending. The table also shows the coefficients for the qualitative measures of education, occupation and location of the hunters. In each case interpretation is relative to the base category. With education the comparator category is the hunters with a matriculation qualification, and compared to them those with a degree, postgraduate or professional qualification spend less. Compared to

self-employed hunters, professionals, managers and those in sales, mining and education spend less. Hunters in administrative and technical occupations and farmers spend more than self-employed hunters. For the location variable the comparator group was hunters from the Western Cape. Compared to them, those from the Free State, Mpumalanga and Limpopo spend more and the others spend less. Finally, there are also a number of behavioural determinants of spending. Though the coefficients are insignificant the directions of the relationships are interesting. Hunters who prefer to hunt in a group spend less, but having more people in a hunting party is positively associated with average spending. Hunters who are members of an association spend more on average, but compared to the occasional hunters those who described themselves as dedicated hunters tend to spend less on average.

#### 4. Findings, implications and recommendations

The research confirms that a range of socio-demographic variables and travel behaviour influence tourist expenditure. The following socio-demographic variables influence spending:

- In terms of language, Afrikaans-speaking hunters spend less per person/group than English-speaking hunters, although there are significantly more Afrikaans-speaking hunters than English-speaking hunters. This confirms research done by Saayman & Saayman (2006: 218) on tourist expenditure at arts festivals in South Africa, where Afrikaans-speaking tourists spent less than their English counterparts.
- Married hunters on average spend more than single hunters. This confirms research done by Bilgic *et al* (2008: 776) who focus on fishing and hunting leisure spending in the USA.
- Concerning qualifications, hunters with post-matriculation qualifications (degree and postgraduate) spend less than hunters who have only a matriculation certificate. This confirms research done by Weagley & Huh (2004: 265), but contradicts research conducted by Van der Merwe *et al* (2007: 192). It is interesting to note that research by Bilgic *et al* (2008: 776) on leisure fishing



and hunting confirms the effects of qualification at leisure fishing, but contradicts it regarding leisure hunting.

- Distance from the hunting destination also influences spending as hunters residing further from the hunting destination spend less at the hunting destination. This finding supports research by Van der Merwe & Saayman (2008: 37), Wong & Yeh (2009: 19) and Lee (2001: 659), but contradicts findings by Bilgic *et al* (2008: 776) and Saayman & Saayman (2006: 218).
- The hunter's occupation plays a significant role in total expenditure of hunters. This research revealed that farmers and people employed in the mining industry spend more. Díaz-Pérez *et al* (2005: 962), Saayman & Saayman (2007: 29) and Jang *et al* (2004: 339) confirm that occupation influences tourist spending. However, the research findings of Mok & Iverson (2000: 301) contradict this finding.
- The results indicate that income is a significant socio-demographic indicator in distinguishing low spenders from high spenders. This confirms research by Downward & Lumsdon (2000: 259), Hong *et al* (1999: 51), Weagley & Huh (2004: 265) and Jang *et al* (2004: 336) (cf Table 1).

The following behavioural variables influence spending of hunters:

- Hunting frequency has a positive impact on spending of hunters since higher frequencies lead to higher spending. This finding supports research by Bilgic *et al* (2008: 776) who conducted research on recreational hunting and fishing in the USA. Nevertheless, research by Jang *et al* (2004: 339) contradicts this finding.
- The length of stay is also an important aspect that distinguishes low spenders from high spenders, thus confirming research by Jang *et al* (2004), Kastenholz (2005), Mok & Iverson (2000), Downward & Lumsdon (2000) and Spotts & Mahoney (1991). There are contradictory findings by Cannon & Ford (2002) and Seiler *et al* (2003).
- Professional and occasional hunters spend more than dedicated hunters. A professional hunter underwent specific training to accompany overseas hunters who mainly hunt animals for trophy

purposes, whereas a dedicated hunter is a member of an accredited association who has passed the relevant training course and who regularly participates in hunting activities (Firearms Control Act, 2004). This aspect has not been found in the literature.

- The results further provided behavioural indicators that were not significant including the group size and membership of a hunters' association. This research contradicted Bilgic *et al* (2008: 777) who found that hunting and fishing recreational spending is influenced more by behavioural variables than by socio-demographic variables.

The findings of this research have the following implications. Game-farm managers/owners should follow a diversified strategy that makes provision for two markets, namely the high spenders and the rest. The latter makes up the greater part of hunters in South Africa and can therefore not be ignored. In order to attract the high spenders, the following profile is helpful. High spenders are English-speaking hunters, between the ages of 40 and 65, who are living in KwaZulu-Natal, and who are married and self-employed.

In order to increase the length of stay and thereby increase the amount spent by hunters, product owners/managers could offer hunting packages at a fixed price based on the availability of a number of species. This implies that the hunter would require more days to hunt different species. The hunt could even take place on more than one farm, thereby generating income for more outfitters. Current world tourism trends indicate that game-farm owners should also consider targeting the family market, although this aspect did not form part of the present study. Van der Merwe *et al* (2007) indicated that this is a potential growing market in South Africa. This study also indicated that, if the results under investigation are compared with studies conducted in the 1980s and early 1990s, it is clear that, although the market remained similar, the behaviour of hunters are changing and these are the issues that impact on the income and viability of game farms. Therefore continuous research is paramount.

Finally, product owners/managers should consider the option of a loyalty system for the hunters who hunt with them regularly. They

could, for example, be offered special packages as it is important to retain loyal customers as it is five times more expensive to attract a new hunter than to retain a loyal one. Packages could perhaps also include the services of a taxidermist.

## 5. Conclusion

The aim of this study was to examine the socio-demographic profile and travel behaviour of biltong hunters in the Republic of South Africa. The research provides information about the socio-demographic and travel behaviour characteristics of South African biltong hunters. The results obtained revealed that socio-demographic and travel behaviour characteristics strongly influence travel expenditure. Socio-demographic variables had a more significant impact compared to the behavioural variables. The behavioural variables that had the greatest influence on tourist spending were the number of hunting trips per year, the length of stay and the size of the travel party. It is interesting to note that if one compares these results with previous research conducted in the 1980s and 1990s, these aspects changed the most. Socio-demographic factors that played an important role in attracting high spenders were language, income, age category, place of residence and marital status. The research both contradicted and supported previous research concerning this topic, but also added new variables, for example, the fact that dedicated hunters spend less than occasional and professional hunters. The research also revealed the profile of high spenders.

The contribution of this research is threefold:

- This is the first time that regression analysis was used to determine hunters' socio-demographic and travel behaviour in South Africa.
- The information gathered by this research will assist game-farm managers to attract the high spenders who will, in turn, generate more profit for the hunting establishment.
- This research adds knowledge on the hunting sector of the tourism industry in South Africa.
- The research also indicated changes in hunters' travel behaviour over a period of approximately 20 years.

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