A spending model for biltong hunters

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Summary

The primary objective of this research was to develop a spending model for biltong hunters in South Africa.

Biltong hunting has developed into a popular recreational activity that provides economic benefits for South Africa over the past years and is the single biggest source of income for game farm owners. Biltong hunters spend money on game hunted, accommodation, fuel, hunting gear, equipment, food and beverages. One method to help stimulate hunters to increase their spending on a game farm is to determine and manage the determinants of expenditure which can be managed within a specific model. A spending model can also assist practitioners and researchers to determine the contribution of hunting to an area or country, as spending is the main element to economic impact. Therefore it is important to determine the variables that form part of such a spending model, also seen in the light that hunting contributes significantly to the economy of South Africa and the fact that South Africa has a vast numbers of game and hunting destinations. A spending model includes socio-demographic, travel behaviour and geographic characteristics of the object studied. A study of literature revealed that no spending model exists for biltong hunting.

Quantitative research was conducted and a probability sampling method was used. Questionnaires were mailed to the members of the SA Hunters and Game Conservation Association together with their monthly magazine (*SA Hunters/SA Jagters*) during November/December 2007. An interactive questionnaire was loaded onto the websites of the South African Hunters and Game Conservation Association (SAHGCA), the Professional Hunters Association of South Africa (PHASA) and the national Confederation of Hunting Associations of South Africa (CHASA) during the months of September/October 2007. In total, 676 questionnaires were received back via e-mail, fax and mail.

The results of this research show that biltong hunting appeals primarily to a niche market, comprising married Afrikaans males between the ages of 49 and 56 years. The level of education shows that the majority of hunters have either a degree or a diploma and are self-employed. Hunting is a social and cultural activity with most hunters hunting in groups. Hunters go on an average of five hunting trips per annum

and spend an average of four days hunting. This analysis will examine the total spending by biltong hunters as well as these variables. Most of the hunters hunt in their province of residence as well as adjacent provinces. Therefore the geographic location of a game farm plays a role in a hunter's choice of hunting destination as well as the level of their spending.

The top five game species hunted by South African biltong hunters are springbok, blesbok, impala, kudu and blue wildebeest. Hunters of these popular species in all cases originate from Gauteng. The preferred species are mainly hunted in two provinces, Limpopo (blesbok, impala, kudu & blue wildebeest) and the Northern Cape Province (springbok).

From a game farmer's as well as marketing perspective, this research makes an important contribution. This is the first research of its kind done in South Africa and this research contributes towards the body of knowledge on the spending behaviour of biltong hunters in South Africa.

Contribution of this study to the discipline of Tourism Management

The study made the following contribution to the field of hunting research:

- This study is the first to suggest a spending model for biltong hunters in South Africa.
- It increases the understanding of the socio-demographic and travel behaviour attributes of biltong hunters.
- It determines which species generate the greatest income for game farms. Understanding which species generate the greatest income and are more popular than others for hunters will enable game farmers to host these species and, as a result, meet the needs and expectations of hunters, thereby generating more revenue
- As proof of the above, a first article was published in Acta Academica, 42(3):61-85 under the following title: Socio-demographic profile and travel behaviour of biltong hunters in South Africa.
- Different methods used on the same data set, impacts on the outcome of results. For example: Article 1, a regression analysis was conducted using SPSS 16 (using the whole sample pertaining the nine provinces in South Africa); Article 2, firstly, a statistical analysis was conducted using SAS System for windows (SAS) and secondly, a linear regression analysis using

the five most important provinces where hunters' originate from. From the statistical analysis and sections of data used in this thesis different outcomes were obtained. With regards to this study the following discrepancies in results were detected:

- Article 1: Professional and occasional hunters spend more than dedicated hunters.
- Article 2: Dedicated hunters spend more.

- Article 1: Married hunters spend more.
- Article 2: Unmarried hunters spend more.

- Article 1: There is a positive correlation with spending and hunters residing in Gauteng, Free State, North-West and Western Cape.
- Article 2: Hunters residing in Gauteng, North-West and Northern Cape spend less.

Opsomming

Die primêre doelwit van hierdie navorsing was om 'n bestedingsmodel vir biltongjagters in Suid-Afrika te ontwerp.

Biltongjag het in 'n gewilde ontspanningsaktiwiteit ontwikkel wat oor die afgelope jare ekonomiese voordeel vir Suid-Afrika inhou en is die enkele grootste inkomstebron vir wildplaaseienaars. Biltongjagters bestee geld op wild wat gejag is, verblyf, brandstof, jaguitrusting, jagtoerusting, voedsel en drank. Een metode waardeur jagters gestimuleer kan word om hul besteding op 'n wildplaas te vergroot is deur die determinante van uitgawes te bepaal en te bestuur, wat binne 'n bepaalde model bestuur kan word. 'n Bestedingsmodel kan praktisyns en navorsers ook help om die bydrae van jag tot 'n area of land vas te stel, aangesien besteding die hoofelement van ekonomiese impak uitmaak. Dit is dus belangrik om die veranderlikes te bepaal wat deel uitmaak van so 'n bestedingsmodel, ook gesien in die lig daarvan dat jag aansienlik bydra tot Suid-Afrika se ekonomie en die feit dat Suid-Afrika oor 'n geweldige groot aantal wild- en jagbestemmings beskik. 'n Bestedingsmodel sluit in sosio-demografiese, reisgedrag-eienskappe en geografiese kenmerke van die onderwerp wat bestudeer word. 'n Literatuurstudie het aan die lig gebring dat geen daar bestedingsmodel vir biltongjag in Suid-Afrika bestaan nie.

'n Kwantitatiewe ondersoek was onderneem en 'n waarskynlikheids samestellings metode was gebruik. Vraelyste is gedurende November/Desember 2007 saam met die maandelikse uitgawe van die tydskrif (*SA Hunters/Jagters*) aan die lede van die *SA Hunters and Game Conservation Association* gestuur. Tweedens is daar gedurende die maande September/Oktober 2007 'n interaktiewe vraelys op die webwerwe SAHGCA, PHASA en CHASA gelaai. In die geheel is 676 vraelyste via e-pos, faks en slakpos terug ontvang.

Die resultate van hierdie navorsing toon dat biltongjag die sterkste spreek tot 'n nismark, naamlik getroude Afrikaanse mans tussen 49 en 56 jarige ouderdom. Die onderwysvlak toon dat die meerderheid jagters oor óf 'n graad óf 'n diploma beskik en hulle verskaf werk aan hulleself. Jag is 'n sosiale en kulturele aktiwiteit met die meeste jagters wat in groepe jag. Jagters gaan gemiddeld op vyf jagtogte per jaar en jag 'n gemiddeld van vier dae lank. Hierdie analise sal die totale besteding deur biltongjagters en hul veranderlikes ondersoek. Die meeste jagtersjag in hul provinsie

van afkoms asook naburige provinsies; die geografiese ligging en 'n wildplaas speel dus 'n rol by 'n jagter se keuse ten opsigte van 'n jagbestemming asook rakende die bestedingsvlak.

Die top vyf wildspesies wat deur Suid-Afrikaanse biltongjagters gejag word, is springbok, blesbok, impala, koedoe en blou wildebees. Jagters van hierdie gewilde spesies in alle gevalle is uit Gauteng afkomstig. Die verkose spesies word hoofsaaklik in twee provinsies gejag, naamlik Limpopo (blesbok, impala, koedoe en blou wildebees) en die Noord-Kaapprovinsie (springbok).

Vanuit 'n bemarkingsperspektief asook dié van 'n wildboer, lewer hierdie navorsing 'n belangrike bydrae. Dit is die eerste navorsing van sy soort wat in Suid-Afrika onderneem is en hierdie navorsing dra by tot die kenniskorpus rakende die bestedingsgedrag van biltongjagters in Suid-Afrika.

Die bydrae van hierdie studie tot die dissipline toerismebestuur

Die studie het die volgende bydrae tot die navorsingsgebied oor jag gelewer:

- Hierdie studie is die eerste wat 'n bestedingsmodel vir biltongjagters in Suid-Afrika voorstel.
- Dit het bygedra tot die verstaan van die sosio-demografiese kenmerke en reisgedrag-eienskappe van biltongjagters.
- Dit bepaal het watter spesies die grootste inkomste vir wildboere genereer. Deur ingelig te wees oor watter spesies die grootste inkomste genereer en watter vir jagters gewilder is as ander, sal die wildboere weet watter spesies om aan te hou en gevolglik in die behoeftes en verwagtinge van die jagters te voorsien, en daardeur 'n groter inkomste te genereer.
- As bewys van bostaande is 'n artikel in Acta Academica, 42(3):61-85 onder die volgende titel gepubliseer: *Socio-demographic profile and travel behaviour of biltong hunters in South Africa*.
- Verskillende metodologieë, toegepas, op dieselfde datastel-impakte het 'n invloed op die uitkoms van resultate. Byvoorbeeld, in Artikel 1, is 'n regressievergelyking uitgevoer aan die hand van die SPSS 16 (deur die hele steekproef rakende die nege provinsies in SA te gebruik); in Artikel 2 is 'n statistiese analise eerstens uitgevoer deur gebruik te maak van die *ASA System for Windows (SAS)*, en tweedens is 'n lineêre regressie-analise gedoen deur die vyf belangrikste provinsies waar jagters vandaan kom, te

gebruik. Uit die statistiese analise en afdelings van data in hierdie proefskrif is verskillende uitkomste verkry. Met betrekking tot hierdie studie is die volgende diskrepansie in resultate waargeneem:

- Artikel 1: Professionele en geleentheidsjagters bestee meer as toegewyde jagters.
- Artikel 2: Toegewyde jagters bestee meer.

- Artikel 1: Getroude jagters bestee meer.
- Artikel 2: Ongetroude jagters bestee meer.

- Artikel 1: Daar is ’n positiewe korrelasie tussen besteding en jagters wat van Gauteng, Vrystaat, Noord-Wes en Wes-Kaap afkomstig is.
- Artikel 2: Jagters wat afkomstig is van Gauteng, Noord-Wes en Noord-Kaap bestee minder.

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Introduction and problem statement

1.1. Introduction

During the course of the past four decades there has been a well-documented global increase in environmental and nature-based travel, which is commonly referred to as nature-based or wildlife-based tourism (Lim & McAleer, 2005:1432; Reynolds & Braithwaite, 2001:31). The same pattern has been replicated in the South African nature-based tourism industry (Briel, 2006:2; Reilly, Sutherland & Harley, 2003:141). Some of the factors contributing to South Africa's position as a prominent nature-wildlife-based tourism destination are its scenic landscapes, beautiful coastline, diversity of wildlife, diversity of game species, wildlife-based attractions and political stability and changes since 1994 (Saayman & du Plessis, 2003:61; Van der Merwe & Saayman, 2005:1; Loon & Polakow, 2001:894; Holt-Biddle, 2002:156; ABSA, 2003:17; Damm, 2005:1).

Wildlife tourism is primarily concerned with the direct enjoyment of wildlife or nature in its natural and undisturbed state, or in captivity (Sinha, 2001:3; Reynolds & Braithwaite, 2001:32; Newsome, Dowling & Moore, 2005:16; Higginbottom, 2004:2) and categorised as either consumptive (hunting and fishing) or non-consumptive (wildlife viewing, bird watching) (Sinha, 2001:3-4; Reynolds & Braithwaite, 2001:32). In South Africa, wildlife tourism is reliant on national, provincial and local parks or nature reserves managed by government and the private sector. The private sector consists of private nature reserves and game farms covering 17,9% (14.7 million hectares) of the total land suitable for agriculture in South Africa (Honey, 1999:340; Brooks, 2005:223; Dekker, 1999:34; ABSA, 2003:i; Cheney, 2006:2; Mabunda, 2008:82). The private sector-owned wildlife industry (game farms) in South Africa is, to a large extent, dependent on hunting (consumptive usage) for its existence and can predominantly be subdivided into biltong and trophy hunting (Newsome *et al.,* 2005:16; Van der Merwe & Saayman, 2003:105; Eloff, 1999:22; Cloete, Taljaard & Grové, 2007:71). Biltong hunting is defined as a *cultural activity through which wildlife is hunted by means of a rifle, bow or similar weapon for the use of a variety of meat (venison) products such as biltong and salami* (Van der Merwe & Saayman, 2008:3). Trophy hunting is defined as *an activity where wildlife is hunted by means of a rifle, bow or similar weapon primarily for its horns and/or the skin in order to be*

displayed as trophies and remembrance of the hunt (Van der Merwe & Saayman, 2008:3). Trophy hunters only hunt exceptional animals with the objective of keeping parts of the animal as memorabilia (trophies) (Lindsey, Roulette & Romañach, 2007:456).

The focus will be on biltong hunting, the reason for this being the fact that biltong hunting is the single biggest source of income for game farm owners (Cloete *et al.*, 2007:71; Van der Merwe & Saayman, 2003:105; Van der Merwe, Saayman & Krugell*.,* 2007:184; Bothma, 2002:480; ABSA, 2003:28), and competition between wildlife products, especially game farms, is fierce (Radder, Van Niekerk & Nagel, 2000:29; Radder, 2001:178). According to Van der Merwe *et al.* (2007:184), biltong hunting contributes significantly to the income of privately owned game farms and to the economy of the country (R4,4 billion in 2007) (Van der Merwe & Saayman, 2008:37). Game farms can be defined as land that is adequately fenced, containing a variety of game species that can be used for hunting, meat production, live game sales, and to provide infra- and supra-structures for eco-tourists (Van der Merwe & Saayman, 2005:1). Not only do hunters spend money on game hunted, but also on accommodation, fuel, food and beverages, hunting gear and equipment (Van der Merwe & Saayman, 2008:21).

One method that will help stimulate hunters to increase their spending at hunting destinations is to determine and manage the determinants of spending (Cheung & Law, 2001:156; Kozak, Gokovali & Bahar, 1998:152) which can be managed within a specific model. The word 'model' can be defined as a simplified depiction of reality, and its purpose is to affect a better understanding of a system. Models allow for investigation of the properties of the system and can have predictive qualities (Aarts & Peel, 1999:45).

From the literature studied it was clear that a spending model should include the socio-demographic, travel behaviour and geographic characteristics of tourists (Hong, Kim & Lee, 1999:44; Nicolau & Más, 2006:984; Leeworthy, Wiley, English & Kriese, 2001:91). These aspects will assist in defining hunters' profiles according to expenditure levels at the hunting destination (Van der Merwe *et al.*, 2007:192; Radder & Bech-Larsen, 2008:258; Cannon & Ford, 2002:264; Jang, Bai, Hong & O'Leary*,* 2004a:333,339; Kastenholz, 2005:563; Beerli & Martin, 2004:626; Alegre & Pou, 2006:1352).

Spending models can further help game farm owners in marketing their product more effectively and to better fit the needs of a particular segment of the market (Pissoort & Saayman, 2007:256). Without any effective spending model product owners will not be able to generate maximum income, provide products that suit the needs of hunters, conduct effective marketing and be sustainable over the long run (Regan & Damonte, 1999:296; Hutchinson, Fujun & Youcheng, 2009:306). Spending models have made considerable contributions to the understanding of the process that motivates tourist expenditure at a specific destination (Kozak *et al.,* 1998:152). Game farm owners need to determine the products that generate the highest income and increase profitability by enhancing the appeal of their product. Successful development of an attraction can be achieved by focusing on attributes that increase spending at game farms (Cheung & Law, 2001:156).

The purpose of Chapter 1 is to formulate the problem statement, state the primary and secondary objectives of the study, discuss the method of research and, finally, to present the chapter classifications of the study.

1.2. Problem statement

Biltong hunting has undergone dramatic shifts since the mid-19th century and has gone from being an essential survival activity in the harsh, African wilderness to a popular recreational activity (Carruthers, 1994:266) that provides economic benefits for South Africa (Damm, 2005:1). In developing a spending model for the biltong hunting industry, it is important to determine the characteristics that influence hunters' expenditure, as well as their behaviour (Hong *et al.,* 1999:44; Nicolau & Más, 2006:984; Leeworthy *et al.*, 2001:91). Tourist expenditure is one of the most critical variables of analysis for tourist destinations, since it directly determines the specific tourism sector's profitability (Kastenholz, 2005:557). Kruger and Saayman (2010:97) indicated that a variety of socio-demographic, behavioural and motivational variables determine expenditure. These researchers also indicated that expenditure patterns differ from one sector to another. The findings from this study by Kruger and Saayman led to this research.

From the literature the following variables were identified as being significant in relation to tourist expenditure and therefore need to be considered when developing a spending model: spending per person (Leeworthy *et al.*, 2001:86; Mok & Iverson, 2000:304; Mules, 1998:268; Agarwal & Yochum, 1999:175; Perez & Sampol,

2000:628,635; Pol, Pascual & Vazquez, 2006:43; Agarwal & Yochum, 1999:175), total gross spending (Jang *et al.,* 2004a:338; Kastenholz, 2005:563; Spotts & Mahoney, 1991:31), income of tourists/disposable income (Jang *et al.*, 2004a:336; Cannon & Ford, 2002:264; Durbarry & Sinclair, 2003:938; Tse, 2001:285; Seiler, Hsieh, Seiler & Hsieh, 2002:56-57), level of education (Alegre & Pou, 2006:1345), age (Alegre & Pou, 2006:1345), size of travel party, duration of stay (Seiler *et al.,* 2002:56-57), travel distance (Jang *et al.,* 2004a:340; Van der Merwe & Saayman, 2008:37; Nicolau & Más, 2006:993; Witlox, 2007:183), money available to spend on holiday, and attributes related to the destination such as strength of currency, visa requirements, stability and number of tourists (hunters) visiting (Cheung & Law, 2001:156).

A conceptual framework was developed to illustrate these key factors that influence expenditure (Figure 1.1). These key factors include socio-demographic factors, disposable income, travel distance and decision to visit a specific destination.

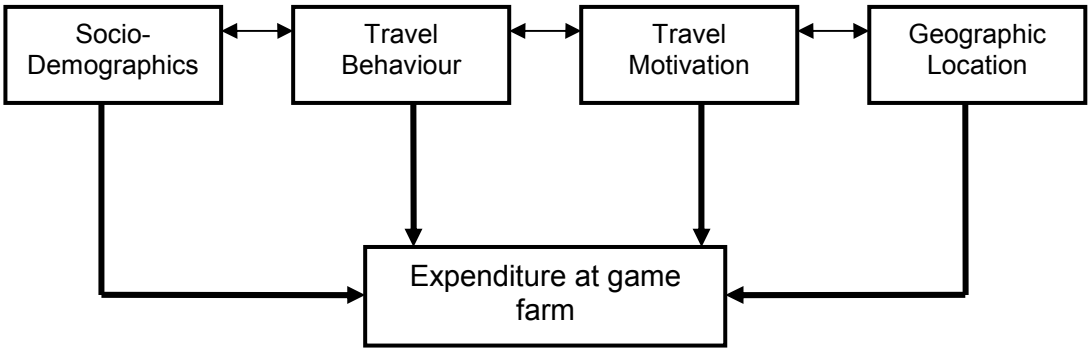


Figure 1.1: Conceptual framework illustrating key factors influencing biltong hunter expenditure (Sources: McHone & Rungeling, 1999:215; Saayman & Saayman, 2006a:220; Perez & Sampol, 2000:635; Cannon & Ford, 2002:264).

Factors that determine the level of hunters' expenditure on a game farm were identified as socio-demographic characteristics, travel behaviour, travel motivation and geographic location (Figure 1.1). Socio-demographic variables can be used to explain travel behaviour (Horneman, Carter, Wei & Ruys, 2002:22; Frew & Shaw, 1999:200) and have a direct influence on visitor spending (Cannon & Ford, 2002:264; Jang *et al.,* 2004a:333; Kastenholz, 2005:563; Beerli & Martin, 2004:626).

Each of the indentified key factors of Figure 1.1 will be discussed next:

Socio-demographic characteristics and travel behaviour

In developing a spending model for the biltong hunting industry it is important to determine the demographics and trends of the target market. These socio-demographic variables play a significant role in decision making in terms of travel patterns (Lu & Pas, 1999:18). McHone, Rungeling and various authors have studied the relationship between socio-demographic characteristics, travel behaviour, and tourism expenditure. Research done on the hunting industry in South Africa indicates that language and culture are in themselves the two most significant variables in spending (Van der Merwe *et al.*, 2007:192; Radder & Bech-Larsen, 2008:258). A number of studies suggest that income, (Jang *et al.,* 2004a:336; Cannon & Ford, 2002:264), age (older visitors spend more) (Kastenholz, 2005:563; Cannon & Ford, 2002:264) and occupation (Jang *et al.*, 2004a:338) are significant variables in tourist expenditure. Socio-demographic variables play a significant role in determining the characteristics of tourists that influence tourism expenditure as well as tourism behaviour (Hong *et al.,* 1999:44; Nicolau & Más, 2006:984; Leeworthy *et al.*, 2001:91). Travel behaviour variables such as activity participation (Jang, Hu, Morrison & O'Leary*,* 2007:161), personal needs (Radder, 2001:175), mode of transport (Flogenfeldt, 1999:121; Richards, 2002:1062) and number of nights (Jang *et al.*, 2004a:338; Kastenholz, 2005:563) influence tourist expenditure.

Socio-demographic variables play a significant role in decision making in terms of travel patterns (Lu & Pas, 1999:18). Destination choice is influenced by tourist motivations (Buhalis, 2000:101; Campbell & Mitchell, 2007:77; Nicolau & Más, 2006:994; Beerli & Martin, 2004:626; Richards, 2002:1049; Manfredo, Fix, Teel, Smeltzer & Kahn, 2004:1148) such as quality and variety of game species (Eloff, 1999:22; Radder, 2000:130), being close to nature (Radder, 2005:1143; Radder, 2001:174) and tourist socio-demographic characteristics (Andriotis, Agiomirgianakis & Mihiotis, 2007:51; Richards, 2002:1062). Socio-demographic variables and the travel motivations of consumers offer in-depth knowledge of the tourist market (hunters), allowing their characteristics to be related to their behaviour (Baloglu & McCleary, 1999:892). Research into the socio-demographic characteristics of biltong hunters in South Africa conducted by Van der Merwe *et al.* (2007:189), Van der Merwe and Saayman (2003:110) and Eloff (1999:23) identified the following socio-demographic aspects as important: most hunters are married, Afrikaans-speaking, males 30+ years plus, are generally professionals and earned more than R10 000

per month. They further discovered that the typical size of groups was three or four people and the duration of a hunt was, on average, three days.

Travel motivation

Understanding why people travel and what influences their visit to a specific destination, can lead to higher levels of customer satisfaction (Goossens, 2000:316). This can be achieved by providing a product that relates to those customers' (tourists') needs (Baker & Crompton, 2000:788). Product owners should focus on the motivations driving the target market (travel motivations) and their association with trip expenditure which should then maximise economic benefit at the tourist destination (Cheung & Law, 2001:156). Over the past years there has been an increasing interest in environment and nature travel by western society and nature-based tourism has increased due to a higher level of environmental consciousness by tourists (Lim & McAleer, 2005:1432; Reynolds & Braithwaite, 2001:31).

The increased popularity of outdoor recreation activities makes the identification of the particular wants and needs of this target market of customers inevitable (Pearce, 2008:148; Green & Boshoff, 2002:2). The travel motivation and expectations of these travellers are primarily related to the natural environment. This growing awareness of nature conservation within the tourism industry and nature-based tourism has become a rapidly growing segment of the tourism industry (Lim & McAleer, 2005:1433).

Travel motivation characteristics that have an influence on tourism expenditure (Hong *et al.*, 1999:44; Nicolau & Más, 2006:984; Leeworthy *et al.*, 2001:91) are the following: When choosing a destination, tourists rely mostly on their impressions of a destination as well as information available on the destination and the image of the destination which plays an important role during destination selection (Pike, 2002:541; Bigné, Sánchez & Sánchez, 2001:607). Research undertaken by Kastenholz (2005:563) on tourism markets in Northern-Portugal revealed the interrelated aspects of visitor motivation and spending. The research found that travel motivations such as history and culture are positively linked to tourist expenditure. Spotts and Mahoney (1991:29) segmented visitors to a destination region, bound on the volume of their expenditure. They identify that travel motivations associated with high spenders were participation in a variety of recreational activities. Jang *et al.* (2004a:339) studied the travel expenditure patterns of Japanese pleasure travellers to the United States and found that first time

travellers spend more than repeat visitors. The opposite was found by Bilgic, Florkowski, Yoder and Schreiner (2008:780) in a study done on hunting and fishing leisure expenditure in the USA, this research indicated that repeat visitors spend more. Díaz-Pérez, Bethencourt-Cejas and Álvarez-González (2005:964) found that the significant variables in tourist spending of visitors to the Canary Islands were seasonality (spend more during high season) and the type of island (visitors to bigger islands spend more). Suh and Gartner (2004:133) identified high spenders to Seoul, Korea as business travellers, travellers that are mainly interested in shopping and travellers wanting to experience the local culture (Suh & Gartner, 2004:136; Nicolau & Más, 2006:992).

The above research highlights the interrelationship between travel motivation and tourist expenditure. Improved knowledge of the travel motivations of biltong hunters will be of great assistance to game farm owners to sustain and increase market share in the hunting industry.

Geographic characteristics

Several studies have examined the geographic variables that play a role in tourist expenditure. The majority of researchers found that distance is one of the biggest role players in tourist expenditure (Lee, 2001:663; Kastenholz, 2005:567; Nicolau & Más, 2006:994; Bilgic *et al.,* 2008:779; Van der Merwe *et al.,* 2007:192). Distance from home seems to play an important role in hunters' destination choice (Van der Merwe & Saayman, 2008:36). Transport is a significant component of tourism expenditure and hunters residing further from the hunting destination tend to spend more on fuel and therefore have less money to spend on other expenditure (Van der Merwe & Saayman, 2008:21). Distance can be seen as an important destination attribute and makes the geographic space in which the tourism activity (hunting) occurs important (Schroeder & Louviere, 1999:303; Van der Merwe & Saayman, 2008:15). The tourists', in this case the hunter's, final choice of destination or type of holiday is affected by different variables and destination attributes. These characteristics include: weather (Kozak, 2002:230; Scott, Jones & Konopek, 2007:570), proximity of sea and beaches, (Kozak, 2002:230) accommodation facilities, family orientated, sea/beach, entertainment, travelling distance, culture and nature, cost (Kozak, 2002:230), scenery and natural landscape (Kozak, 2002:230; Nadeau, Heslop, O'Reilly & Luk, 2008:95) and abundance of wildlife which is a major destination attribute for hunters within South Africa (Radder, 2000:129).

South Africa is one of the foremost international destinations for wildlife watching (Valentine & Birtles, 2004:20) and a favourable trophy hunting destination for overseas hunters (ABSA, 2003:17; Von Brandis & Reilly, 2007:153; Damm, 2005:2). Contributing factors are the number of game species and rare game species, the presence of the Big Five, the low percentage of malaria areas, the hospitable climate, excellent medical facilities, English as the language of business, the currency exchange rate, political stability, efficient transport and communication systems, good food and safe drinking water (ABSA, 2003:17; Damm, 2005:1; Eloff, 1999:22; Radder, 2000:130; Radder, 2001:176). Research done by Saayman and du Plessis (2003:61) on South Africa as a tourist destination concluded that the geographic features of South Africa are the major drawcard for tourists.

From this literature Table 1.1 was assembled to summarise the key factors and their aspects of importance for developing a spending model.

Table 1.1: Determinants of travel expenditure

Determinants	Variables	Author(s)
Socio-demographic	• Income (high income spend more) • Age (older spend more) • Level of education (higher education spend more) • Occupation (managers/professionals spend more)	**Kastenholz (2005)** **Jang *et al.* (2004a)** **Cannon and Ford (2002)** **Leeworthy *et al.* (2001)** **Perez and Sampol (2000)** **Hong *et al.* (1999)** **Agarwal and Yochum (1999)** **Lim (1997)**
Travel behaviour	• Activity participation • Length of stay (shorter stay spend more) • Group size (larger group spend more) • Mode of transport	**Jang *et al.* (2007)** **Kastenholz (2005)** **Jang *et al.* (2004a)** **Richards (2002)** **Perez and Sampol (2000)** **Mok and Iverson (2000)** **Flogenfeldt (1999)** **Agarwal and Yochum (1999)** **Mules (1998)**
Travel motivation	• Exchange rate in destination • Destination attributes & characteristics • Price	**Campo and Garau (2008)** **Dolnicar and Huybers (2007)** **Murphy, Benckendorff and Moscardo (2007)** **Nicolau and Más (2006)** **Kastenholz (2005)** **Richards (2002)** **Perez and Sampol (2000)** **Lim (1997)**
Geographic	• Nationality (foreign tourist spend more) • Location of destination	**Andriotis *et al.* (2007)** **Jang *et al.* (2007)** **Kastenholz (2005)** **Beerli and Martin (2004)**

		Richards (2002) **Perez and Sampol (2000)** **Buhalis (2000)** **Kozak (2002)** **Song, Romilly and Liu (2000)** **Flogenfeldt (1999)** **Lim (1997)**

From the literature review it was found that no spending model exists for hunting that can assist practitioners and researchers to determine the contribution of hunting to an area or country, since spending forms the main element of economic impact. Therefore it is important to determine the variables that form part of such a spending model, because hunting contributes significantly to the economy of South Africa and South Africa has a vast number of game and hunting destinations.

1.3. Primary and secondary objectives of research

The following primary and secondary objectives were set for the research:

1.3.1. Primary objective

- To develop a spending model for biltong hunters in South Africa.

1.3.2. Secondary Objectives

The following secondary objectives were set for the research:

Objective 1

To conduct a literature analysis of the relationship between socio-demographics, tourist behaviour and tourist spending.

Objective 2

To conduct a literature analysis of game farms and geographical locations and spending.

Objective 3

To determine relationship between species hunted for biltong and spending.

Objective 4

To draw conclusions, propose a spending model and make recommendations from the research results.

1.4. Research method

The method entails both a literature study and an empirical survey.

1.4.1. Literature review

The literature used included theses, articles, books, dissertations and related literature on nature-based tourism, wildlife tourism, hunting, game species, socio-demographic characteristics, travel behaviour, travel motivations, spatial analysis, geography of tourism, marketing models, and market segmentation. Various databases were consulted: Library databases: Science Direct, Ebscohost, journal articles, theses, dissertations, books and related literature. Internet searches were done to identify relevant subject matter.

Keywords included nature-based tourism, wildlife tourism, game farms, hunting, biltong hunters, socio-demographic characteristics, geographic characteristics, travel behaviour characteristics, travel motivation, market segmentation, popular species, spending models.

1.4.2. Empirical analysis

The following aspects will be part of the empirical analysis:

1.4.2.1. *Research design and method of collecting data*

A quantitative research approach was conducted by collecting data by means of a questionnaire which consisted mostly of closed-response questions together with a small number of open-ended questions. This research is exploratory by nature – the first in-depth study to be conducted on the biltong hunting industry in the South Africa. The research was conducted by means of a questionnaire consisting mostly of closed-response questions, together with a small number of open-ended questions.

1.4.2.2. *Selection of the sampling frame*

It was decided to select all the members of the South African Hunters and Game Conservation Association (SAHGCA) (*N*=21 000), the Professional Hunters Association of South Africa (PHASA) (*N*=1 039) and the national Confederation of Hunting Associations of South Africa (CHASA) (*N*=18 000) which, in total, provides a

population of ± 40 000. From this research population (N=40 000), a sample size of 676 was returned.

1.4.2.3. *Sampling method*

A probability sampling method was followed. The sampling method in this case was that each element in the population has a known non-zero probability of being selected (Maree & Pietersen, 2007:172).

Firstly, questionnaires were mailed to the members of the SA Hunters and Game Conservation Association along with their monthly magazine (*SA Hunters/SA Jagters*) during November/December 2007. Secondly, an interactive questionnaire was loaded onto the websites of SAHGCA, PHASA and CHASA during the months of September/October 2007. The reason for the short response time was that the researchers only wished to gather the most recent data from the 2007 hunting season. If the research was launched too early in the hunting season, data from hunters that went hunting at the end of the hunting season might have been omitted. Therefore the best time was after the hunting season. A total of 676 (n) questionnaires were returned via e-mail, fax and mail. Maree and Pietersen (2007:179) 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. Crompton (1985:14) indicated that a sample size of 394 (n) out of a population of 50 000 will result in a sample error of 5%. A sample error of 5% means that if 60% of a population indicate that they will visit a resort at least once or twice a month, the real number will vary between 55% and 65%. This is the maximum interval in which sampling error may occur.

1.4.2.4. *Development of the questionnaire*

The questionnaire was developed by the Institute for Tourism and Leisure Studies, North-West University (Van der Merwe *et al.,* 2007:187) (see Appendix 1). The questionnaire consisted of three sections. In Section A, demographic details were surveyed (gender, language, age, marital status, qualifications, province of origin and occupation), while Section B focused on economic aspects (income, hunting alone or in group, size of hunting party, mode of transport, make of vehicle, hunting, number of times hunting per year, hunting destination, length of stay and amount spent during hunting season). Section C of the questionnaire consisted of more detailed

information with regard to consumers' general behaviour (main reason for hunting, preferred hunting weapon, hunting techniques, hunting associations, hunting training, meat processing). Section D consisted of questions concerning firearm legislation (type of hunter, hunting competency, firearm licensing, firearms act, hunting regulations).

The structure of the questionnaire was as follows:

- Section A: Socio-demographic details
- Section B: Economic impact
- Section C: Hunting details
- Section D: Firearms legislation

The purpose of the questionnaire was to determine the national profile of biltong hunters, the most frequently hunted species, the spending habits of hunters and the most popular provinces for hunting.

1.4.2.5. *Data analysis*

The data obtained from the questionnaire were analysed and interpreted. Prof W.F. Krugell of the Faculty of Economic and Management Sciences and Prof Faans Steyn of Statistical Consultation Services (both from the Potchefstroom Campus of the North-West University) were consulted to assist in the statistical analysis of the data. The statistical programs used to conduct the analysis were SPSS© 16 (Statistical Package for the Social Sciences), and the SAS System for Windows 9.1. For each chapter, different analysis was used and this is explained in the next section.

- **Article 1:**

A regression analysis was conducted by using SPSS© 16 (SPSS Inc., 2007) to determine the relative strength or significance of the relationship between spending and its different determinants. The regression analysis determines the relationship between two variables, and a dependent variable is evaluated in relation to one or more independent variables. This is used to predict some kind of outcome, in this case spending by biltong hunters (Howell, 1995:189).

The regression analysis was used to identify the determinants of spending by biltong hunters. A variety of socio-demographic determinants were used including; home

language, marital status, education, occupation and province of residence. The dummy variables were identified as: Afrikaans speaking = 1, not Afrikaans speaking = 0; unmarried hunters = 1, married/divorced hunters = 0; hunters with matric = 1; hunters with post matric = 0; hunters residing in the Western Cape = 1, hunters residing in the remaining eight provinces = 0; Self-employed hunters = 1; rest = 0.

The determinants of spending were measured by the logarithm of the total expenditure of a hunter. In a multiple linear regression model, adjusted R-squared gives the estimated proportion of the variance in the dependent variable accounted for by the explanatory variables (Howell, 1995:167).

- **Article 2:**

Firstly a statistical analysis was conducted using SAS System for windows (SAS Institute Inc., 2002-2005). Descriptive statistics were used to indicate the five most popular provinces to hunt as well as the five provinces of hunters' origin. The results indicated that Limpopo (Damm, 2005:14; Van Niekerk, 2006:51), Northern Cape (Cloete *et al.,* 2007:77; Van Niekerk, 2006:51), Eastern Cape (Damm, 2005:2; Radder *et al.,* 2000:25; Van Niekerk, 2006:52), North-West (Jonker, 2003:64-65) and KwaZulu-Natal (Nell, 2003:100-102) are the most preferred hunting provinces in South Africa which correlates with previous research. This method provides simple summaries of the sample and the measures (Zikmund, 2003:402). Frequency distribution was used for categories such as marital status, education, occupation and method of hunt. Frequency distribution shows the number of times that a variable's different values occur in a sample (Pietersen & Maree, 2007:184). The median was used to describe numerical data (age, number of times hunting and average length of stay). The median is the middle value in a data set and is a more accurate assessment of a trend where outliers exert a strong influence on normal distribution (Pietersen & Maree, 2007:187).

Secondly a linear regression analysis was undertaken using the five provinces of hunters' origins to identify the variables that influence biltong hunters' expenditure. A regression analysis was done to determine the variables that influence biltong hunters' expenditure. The dummy variables were defined so that married hunters = 1 versus unmarried hunters = 0; dedicated hunter = 1 versus occasional hunter = 0; KwaZulu-Natal = 1 versus the remaining four provinces of origin = 0; North-West = 1 versus the remaining four provinces of origin = 0; Free State = 1 versus the remaining four provinces of origin; North-West = 1 versus the remaining four

provinces of origin = 0, Western Cape = 1 versus the remaining four provinces of origin = 0. Income will be used as the logarithm of total income. The raw data obtained from the questionnaire was used for the following variables: age, number of times hunting, length of stay at hunting destination.

The variables that influence biltong hunters' expenditure was measured by the logarithm of the total expenditure of a hunter. In a multiple linear regression model, adjusted R squared measures the proportion of the variance in the dependent variable accounted for by the explanatory variable (Howell, 1995:167). The regression model included different demographic variables such as age of hunter, language of hunter, marital status of hunter, level of education, province of origin of hunter, income of hunter and travel behaviour variables such as number of times they went hunting, number of days spent hunting, dedicated hunter status and hunting group size. This analysis will examine the total spending by biltong hunters and these variables.

- **Article 3:**

A statistical analysis were conducted using SAS System for windows (SAS Institute Inc., 2002-2005). Descriptive statistics will be used to indicate the profile of hunters hunting the five most popular game species and the five highest income generating species. The five most popular species hunted during 2009 were springbok, impala, blesbok, blue wildebeest and kudu. The top five species regarding income generated during 2009 were kudu, blue wildebeest, eland, impala and gemsbok (Scholtz, Van der Merwe & Saayman, 2010:17,18).

The results from the descritive statistical analysis indicated that there is for practical purposes no difference in the socio-demographic profile of hunters hunting the five most popular game species and the five highest income generating species. This method provides simple summaries of the sample and the measures (Zikmund, 2003:402). Frequency distributions were used for categories such as marital status, education, occupation and income. Frequency distribution shows the number of times that a variable's different values (or categories) occur in a sample (Pietersen & Maree, 2007:184). The median was used to describe numerical data (e.g. age, number of times hunting and average length of stay). The median is the middle value in a data set and is a more accurate assessment of the locality of the data where outliers exert a strong influence on a measure such as the mean (Pietersen & Maree, 2007:187).

1.5. Concept clarification

The following terms are used in the context and are explained below:

1.5.1. Biltong hunting: Biltong hunting is defined as a *cultural activity through which wildlife is hunted by means of a rifle, bow or similar weapon for the use of a variety of meat (venison) products such as biltong and salami* (Van der Merwe & Saayman, 2008:3).

1.5.2. Game farm (infra and suprastructure): *A game farm is defined as land that is adequately fenced, accommodating a variety of game species that can serve for hunting, photographic opportunities, environmental education, meat production and live game sales, and provides infrastructure and suprastructure for ecotourists. It includes both consumptive and non-consumptive use of wildlife* (Van der Merwe & Saayman, 2008:3).

1.5.3. Expenditure (Spending): Tourists have a profound economic impact on host communities (Kastenholz, 2005:557; Mules, 1998:267), and tourism tends to complement other economic sectors with travel expenditure, which normally includes expenditure on transport, accommodation and entertainment (Mules, 1998:267; Breen, Bull & Walo, 2001:476; Prideaux, 2000:57; Van der Merwe *et al.,* 2007:186). Extended socio-demographic variables (Cannon & Ford, 2002:264; Jang *et al.,* 2004a:333; Kastenholz, 2005:563; Beerli & Martin, 2004:626) and travel behaviour (Jang e*t al.,* 2004a:339; Alegre & Pou, 2006:1352) determine tourist spending.

1.5.4. Model: A model assists in identifying the particular wants and needs of a target market of customers (Pearce, 2008:148; Green & Boshoff, 2002:2), it provides insight into the consumer's value system and preference for product choices, and increases our understanding of consumer decision making (Gonzáles & Bello, 2002:52).

1.5.5. Socio-demographic characteristics: According to Lu and Pas (1999:8) "*socio-demographic profiling provides insight into the consumer's (hunter's) personal, family, social and community status and an in-depth understanding of the factors that would help to improve their customer satisfaction."* Socio-demographic characteristics are associated person-based determinants such as age, gender, level of education, home language, income and occupation (Beerli & Martin, 2004:626;

Goossens, 2000:302; Saayman, 2001:15; Richards, 2002:1052). These characteristics influence the way an individual perceives a specific destination (Baloglu & McCleary, 1999:870) and will affect the level of their satisfaction (Baker & Crompton, 2000:788). Socio-demographic characteristics are therefore important to marketers in offering a clear understanding of the customer (Baloglu & McCleary, 1999:892; Lu & Pas, 1999:2). Literature indicated that socio-demographic determinants influence tourists' decisions to visit certain destinations (Cannon & Ford, 2002:264, 270; Hong *et al.*, 1999:48,51; Kastenholz, 2005:563; Jang *et al.*, 2004a:339; Leeworthy *et al.*, 2001:91; Lee, 2001:663; Alegre & Pou, 2006:1352; Letho, O'Leary & Morrison, 2004:813) and socio-demographic variables play a significant role in decision making in terms of travel patterns and have an influence on tourism expenditure as well as tourism behaviour (Hong *et al.*, 1999:44; Nicolau & Más, 2006:984; Leeworthy *et al.*, 2001:91; Lu & Pas, 1999:18).

1.5.6. Travel behaviour: Travel behaviour can be defined in terms of the collective characteristics that define the nature and extent of a trip. Travel behaviour consists of inclusive variables such as: the distance travelled (Nicolau & Más, 2006:993; Witlox, 2007:183), number of previous visits (Wang, 2004:114), activity participation (Kim, Cheng & O'Leary, 2007:1370), value for money (Hutchinson *et al.,* 2009:306) mode of transport (Plog, 2002:246; Martin, 2007:745; Alegre & Pou, 2006:1343), purpose of visit (Awaritefe, 2004:324) family life cycle (Bronner & de Hoog, 2008:978) length of stay (Alegre & Pou, 2006:1343; González & Bello, 2002:60; Liu, 1999:14) and trip information selection (Martin, 2007:743).

1.5.7. Geographic variables: Geography is about place, space and environment (Hall & Page, 2006:7; Gaines, 1998:89; Aitchison, 1999:22), people and their places of origin, places they visit and places they pass through (McKercher, Wong & Lau, 2006:647; Uysal, Chen, & Williams, 2000:89, Lew & McKercher, 2006:406; Keyser, 2009:145) and consists of three interdependent variables. These are: firstly, tourist generating areas, secondly, tourist destinations and, thirdly, the routes that link these two areas (Diamantis, 2004:199).

Geographic variables include: size of the game farm or nature reserve, infrastructure, special features, location, and different game species present (Van der Merwe, 2004:94).

1.5.8. Travel Motivation: Travel motivation can be defined "*as the global integrating network of biological and cultural forces which gives value and direction to travel choices, behaviour and experience*" (Pearce, Morrison & Rutledge, 1998:34). Travel motivation is the understanding of tourist motivations and associations with destination selection (Rittichainuwait, Qu & Mongkhonvanit, 2008:7). It is the way in which a tourist perceives the destination on inherent needs, values and interests and the role it plays as motivaton in destination selection. Travel motivation includes: natural landscape, climate, type of accommodation, geographic location, accessibility and cost of visit (Bansal & Eiselt, 2004:390; Murphy, Pritchard & Smith, 2000:50; Kozak, 2002:222,228; Zhang & Jensen, 2007:226; Eloff, 1999:22).

1.6. Chapter classification

The chapters of this thesis are classified as follows:

Chapter 1: Introduction and problem statement

Chapter 1 provides an outline of the study. The motivation for the scientific pursuit of this specific research question was stated. This chapter includes an introduction and literature study relating to nature-based and wildlife tourism in South Africa. The purpose and role of a model will be discussed as well as the importance of a model in product development. A literature search will be conducted on existing spending models and the key factors influencing tourist expenditure. The socio-demographic characteristics that have a positive influence on tourist expenditure will be outlined as well as the relationship between socio-demographic characteristics and travel behaviour. This chapter will focus on a large body of literature that has been published on different spending models. The problem will be stated as well as the objectives of the study together with the methods and timeframe of the research.

Chapter 2 (Article 1): Socio-demographic aspects and travel behaviour

This chapter aims at defining the socio-demographic variables and travel behaviour aspects that influence the spending of biltong hunters in South Africa. This chapter will also focus on marketing strategies such as market segmentation for achieving maximum market penetration. The research will focus on the characteristics that influence tourists' destination choices. A comparison will be made of literature on tourism studies relating to socio-demographic characteristics and travel behaviour, indicating the variables that feature most strongly in destination selection. In model development, this will help game farm owners to obtain a better understanding of the

influence of socio-demographic variables and travel behaviour on tourist expenditure. It will also assist marketing strategists in tailoring their product and promoting that product more effectively.

Chapter 3 (Article 2): Geographical analysis and spending of hunters on game farms

The aim of this chapter is to determine whether the location of a hunting product (game farm) plays an important role regarding the destination choice and expenditure of hunters. This chapter will consist of a spatial analysis of biltong hunting in South Africa, including the preferred provinces for hunting in South Africa, the attributes considered by potential tourists when visiting an area and the geographic variables that influence traveller decision to visit a destination. The economic contribution of hunting to the economy of South Africa requires further investigation into the key factors influencing hunter's destination choice. Geographic research helps to enhance knowledge about destination attributes and the factors that influence tourists' (or hunters') preferences for certain destinations. The distance of a tourism product from its core region has an effect on destination choice. A comparison will be made of literature relating to the attributes that influence tourists' decision to visit a wildlife tourism area. Geographic locality of a tourism product is also used by marketers in market segmentation. Market segmentation based on the geographic profile of travellers can assist in the development of hunters' profiles. This will enable game farm owners and marketers to concentrate their resources and marketing efforts to achieve maximum market penetration. For model development, geographic analysis is important for determining where most hunters reside, which provinces are the most popular hunting destinations and whether the location of a game farm influences the magnitude of hunter expenditure and the probability of hunters visiting the game farm.

Chapter 4: (Article 3): The relationship between popular species and spending

This chapter will focus on determining the profile of hunters of the most popular game species regarding income generating species and biltong hunting species. Game hunted on game farms and game sold at game auctions are the biggest income generators on game farms. It is important for game farm owners to meet the expectations of hunters to attract more hunters. Game farm owners need to determine the most profitable game species and market segments to increase their income. Product offering, in this case game, has a positive impact on tourist expenditure. This chapter will also focus on the socio-demographic and travel

behaviour variables that impact positively on the spending of biltong hunters. Segmenting travellers on the basis of their socio-demographic and geographic characteristics is useful in selecting a destination region's travel market. Market segmentation can be done according to tourism spending levels at a destination. For game farm owners to have a competitive edge in the tourism industry, they should focus on the needs of travellers and the product(s) they prefer. The inclusion of popular game species in the spending model will result in game farm owners attracting more hunters and therefore increasing revenue from hunting.

Chapter 5: Conclusion and Recommendations

The aim of this chapter is to develop a spending model of biltong hunters so that game farm owners may gain maximum economic benefit from hunters. In this final chapter, the primary objectives of this research will be discussed. Conclusions will be drawn from the literature study and thereafter conclusions will be drawn from the results of the empirical study. This chapter will focus on the conclusions drawn concerning the development of a spending model for biltong hunters in South Africa. Recommendations will be made concerning this study and, lastly, concluding recommendations will be made for developing sustainable environmental strategies. The contribution that this research has made will also be listed in this chapter.

Chapter 2

Socio-demographic aspects and travel behaviour

2.1. Introduction

In the age of frontier exploration and expansion, towards the end of the 19th century, over-consumption of wildlife was commonplace. As a consequence, by the end of the 19th century, wildlife had been virtually wiped out over much of South Africa (Carruthers, 1995:17; Carruthers, 2005:192; Beinart, 1990:167). During the first few decades of the 20th century, and particularly from the 1960s, the social, economic and ecological benefits of conserving wildlife were realised, which helped to give birth to an expanding wildlife and hunting industry in South Africa (Van der Waal & Dekker, 2000:155; Carruthers, 2008:177; Bothma, Van Rooyen & Van Rooyen, 2004:840). The wildlife industry has experienced sustained growth, partly due to its contribution to local and national economies and the opportunities generated for rural development (Lindsey, 2008:41; Steenkamp, Marnewick & Marnewick, 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, which was nearly 200 000 ha per annum 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 hunting and trophy hunting, of which biltong hunting is the largest economic contributor (R5 billion) to the hunting industry (Cloete *et al.,* 2007:71; Van der Merwe & Saayman, 2003:105, Van der Merwe *et al.*, 2007:184; Scholtz *et al.,* 2010:15). A survey by Van der Merwe and Saayman (2005:5) involving all active members of the South African Game Farm Organisation (with a sample size of n = 622), 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).

The aim of this chapter is to determine the socio-demographic and travel behaviour variables that influence the spending of biltong hunters. This information can provide a more viable management strategy and style which will ensure a more profitable product.

The remainder of the chapter is structured as follows; Section 2.2: literature review is presented. Section 2.3: method of research. Section 2.4: results indicating the major outcomes of the research. Section 2.5: findings and implications. Section 2.6: conclusions.

2.2. 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.*, 2003:141). South Africa has a well established network of national parks and private nature reserves or game farms which cover approximately 19% of the country's land area (Van der Merwe *et al.,* 2007:184). Hunting can be seen a cultural and economic activity (Eloff, 1999:22; Damm, 2005:1) as it involves the harvesting of a culturally significant delicacy, biltong, it is also underpinned by economic considerations. Therefore game farm owners need to identify high spenders to increase the economic impact on their game farm and minimise visitor's impact on the environment. Tourism can also stimulate economic growth and improve the standard of living of local communities because it takes place mostly in rural areas (Lim & McAleer, 2005:1432).

For a private wildlife area (game farm or private nature reserve) to ensure continuous growth and financial viability, amongst potential income streams it needs to encourage the presence of hunters and 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 lead hunters to choose a destination and understanding these factors is fundamental in marketing a hunting destination (Lam & Hsu, 2006:589; Seddighi & Theocharous, 2002:475; Reynolds & Braithwaite, 2001:33).

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 (Baloglu & McCleary, 1999:892; Pike, 2004:4; Lu & Pas, 1999:12; Hui, Wan & Ho, 2007:965; Jonker, Heath & du Toit, 2004:1).

Market segmentation can be evaluated according to a number of criteria, but the focal point is to identify the most relevant characteristics of the tourist, or hunter is this instance, seeking particular sets of benefits from their travel (hunting) purchase (Jang, Morrison & O'Leary, 2004b:20; Bloom, 2005:94). Tourist behaviour plays an important role as hunters do not make these hunting purchases in isolation, but a mix of aspects such as cultural differences (Crotts & McKercher, 2005:386), personal (Frew & Shaw, 1999:197), psychological factors (Liu, 1999:16) as well as previous experience (Wang, 2004:114) influence the hunters' behaviour. Plog, (2002:246) and Frew and Shaw, (1999:197) conclude that personality characteristics determine how consumers (tourists) experience the world around them and these characteristics determine tourist behaviour. From the research done by Lu and Pas (1999:2) and on these aspects, a conceptual framework for socio-demographic and travel behaviour of biltong hunting has been compiled.

According to Cai (1998:339) socio-demographic variables can be used to explain tourist behaviour and there is a significant relationship between variables. An understanding of the socio-demographic characteristics of the target market (hunters) will provide marketers (game farm owners; hunting outfitters) insight into tourists' (hunters') motivations and travel behaviour which can assist in marketing the product (Baloglu & McCleary, 1999:892; Pike, 2004:4; Lu & Pas, 1999:12). These authors go so far as to state that socio-demographics exert a definite impact on travel behaviour. A wide body of literature shows the relationship between socio-demographic characteristics, travel behaviour and tourist expenditure at the destination (Jang e*t al.*, 2004a:333,336,339; Kastenholz, 2005:563; Alegre & Pou, 2006:1352; Cannon & Ford, 2002:264,269,270; Hong *et al.,* 1999:51; Weagley & Huh, 2004:265; Perez & Sampol, 2000:635; Saayman & Saayman, 2006a:220; Beerli & Martin, 2004:626; Letho *et al.*, 2004:813; Durbarry & Sinclair, 2003:938). Determining the variables that influence tourist spending at the destination can lead to a more systematic approach to destination marketing (Pissoort & Saayman, 2007:256; Regan & Damonte, 1999:296; Hutchinson *et al.,* 2009:306). The relevant information variables of expenditure will enable game farm owners to package their product in a more targeted way (Nicolau & Más, 2006:984; Leeworthy *et al.,* 2001:91).

In this conceptual framework, the influence of socio-demographics (age, gender, employment, income, number of children) on travel behaviour (number of hunters, travel trips, travel time) and activity participation (work, recreation, travel) is depicted (Figure 2.1). Lu and Pas distinguish between in-house activities and out-of-home

activities and allocate three sub-divisions for each of these. Activities are divided into subsistence (work and work-related travel activities), maintenance (meals, shopping and household chores) and recreation. Without a monetary surplus, once basic household expenses have been met, tourism-related travel is not possible.

Marketers must seek to understand visiting patterns of tourists as this will provide insight into travel behaviour (McKercher & Lau, 2008:356). 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).

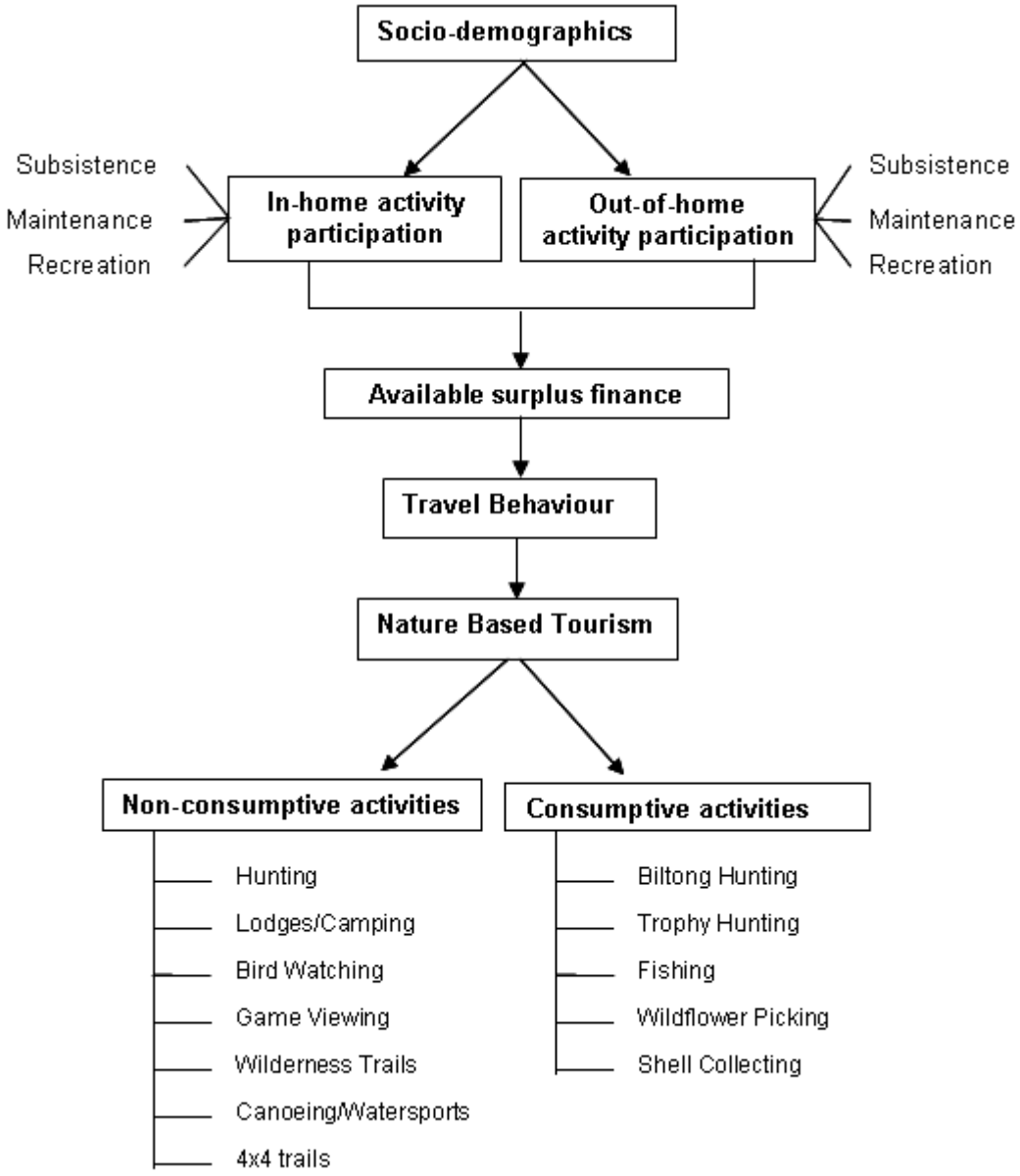


Figure 2.1: Conceptual framework for nature-based leisure activities
(Adapted from: Lu & Pas 1999:2)

Socio-demographic characteristics also influence a tourist's expenditure level. Previous studies on the socio-demographic profiles of tourists were examined as indicated in Table 2.1.

Table 2.1: Comparison of literature on tourism studies using socio-demographic and travel behaviour variables

Author	Article Title	Summary/Main findings
Park and Yoon (2009)	Segmentation by motivation in rural tourism: a Korean case study.	• Gender • Age • Income • Education • Occupation • Number of visits
Bilgic *et al.* (2008)	Estimating fishing and hunting leisure spending shares in the United States.	• Gender • Place of residence • Number of visits • Mode of transport
Del Bosque and San Martin (2008)	Tourist Satisfaction: A cognitive-affective model.	• Gender • Age • Education • Occupation • Income • Household size • Place of residence
Tassiopoulos and Haydam (2008)	Golf tourists in South Africa: a demand-side study of a niche market in sports tourism.	• Marital status • Gender • Age • Education • Occupation • Place of residence • Travel group size • Expenditure patterns • Accommodation preferences • Mode of transport • Source of information • Length of stay
Saayman and 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 • Travel motivation • Number of visits • Attendance of other festivals
Molera and Albaladejo (2007)	Profiling segments of tourists in rural areas of South-Eastern Spain.	• Age • Occupation • Education • Mode of transport • Travel group size • Expenditure patterns
Boshoff, Landman, Kerley and 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 • Travel motivation • Number of visits • Mode of transport
Kim *et al.* (2007)	Understanding participation patterns and trends in tourism cultural attractions.	• Gender • Age • Education • Income • Number of visits • Travel motivation
Chi and 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 • Expenditure patterns • Length of stay • Method of booking (tour operator)
Saayman and Saayman (2006a)	Socio-demographics and visiting patterns of arts festivals in South Africa.	• Language • Culture • Race • Place of residence • Travel group size • Length of stay • Expenditure patterns • Travel motivation • Attendance of other festivals • Number of previous visits
Jang and 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
Jang *et al.* (2004a)	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 and Lin (2004)	Profiling Taiwanese ecotourists using a behavioural approach.	• Age • Gender • Education • Income • Travel motivation
Pike and 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 and Ford (2002)	Relationship of demographic and trip characteristics to visitor spending: an analysis of sport travel visitors across time.	• Age • Marital status • Family status • Income • Travel group size • Length of stay • Travel distance • Place of residence
Cordell, Betz and Green (2002)	Recreation and the environment as dimensions in contemporary American society.	• Age • Income • Place of residence • Race • Culture

Mundet and 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 and 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)
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 tours)
Baloglu and McCleary (1999)	A model of destination image formation.	• Age • Education
Barnes, Schier and 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

The research summarised in Table 2.1 reveals the socio-demographic and travel behaviour variables that feature most strongly in the above research. These variables are: age, education, gender, income, occupation, travel motivation, length of stay, number of previous visits and place of residence of tourists. The review clearly shows no research in the field of hunting tourism of this nature.

2.3. Method of research

The data used in the analysis were gathered over a five-month period from October 2007 to February 2008. The methodology used will be discussed under the following headings: (i) the questionnaire, (ii) the method, and (iii) the statistical analysis.

2.3.1. The Questionnaire

The questionnaire consisted mostly of closed-response questions, together with a small number of open-ended questions in three sections. In Section A, demographic details were surveyed (marital status, age and province of origin) 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). Section C of the questionnaire consisted of more detailed information with regard to the consumers' general behaviour (preferred magazines, newspapers and hunting techniques). For the purposes of this chapter, the information obtained in all three sections was analysed.

2.3.2. Method

Quantitative research was conducted and a probability sampling method was used where each element in the population has a known non-zero probability of being selected (Maree & Pietersen, 2007:172). Members of the South African Hunters and Game Conservation Association (SAHGCA) (*N*=21 000), the Professional Hunters Association of South Africa (PHASA) (*N*=1 039) and the national Confederation of Hunting Associations of South Africa (CHASA) (*N*=18 000) were selected - a total population of 40 000. Firstly, questionnaires were mailed to the members of the SA Hunters and Game Conservation Association along with their monthly magazine (*SA Hunters/SA Jagters*). Secondly, an interactive questionnaire was loaded onto the websites of SAHGCA, PHASA and CHASA. In total, 676 questionnaires were received back via email, fax and regular mail. Maree and Pietersen (2007:179) state that the number of units (n) involved in the sample is more important than the percentage of the total population they represent.

2.3.3. Statistical analysis

A multiple regression analysis (see 2.4.2 for more detail) was conducted using SPSS (SPSS Inc., 2007). A multiple regression analysis determines the linear relationship between a dependent variable and one or more independent variables.

2.4. Results

The research results of this survey will be discussed in two sections: the profile of a biltong hunter and the results of the regression analysis.

2.4.1. Profile of a biltong hunter

In Table 2.2 the profile of the biltong hunter in South Africa is given. The majority of biltong hunters are married (89.8%) male (98.8%), Afrikaans-speaking (78.4%), and between the ages of 40-65 (64%). In total, 37.1% have a diploma or degree, 23.3% matric and 19.6% a professional qualification. 25.2% of hunters are self-employed, 20.3% are professionals and 13.8% are managers. On average, hunters earn

R514 929.42 per annum; their total spending per hunting season, excluding game is R9 081.45. Their total spending during the hunting season on game is R10 385.74 and total spending during the hunting season 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%).

Table 2.2: 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% Matric • 19.6% Professional
Occupation	• 25.2% Self-employed • 20.3% Professional • 13.8% Managerial
Average income per annum	R514 929.4242
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

2.4.2. Regression analysis

The result of this analysis on the total expenditure revealed that some outliers were detected in association with socio-demographic variables. An outlier is a score/observation that lies numerically an abnormal distance from the rest of the data. These outliers can be ascribed to the fact that hunters who completed questionnaires and who are also farmers are hunting on their own farms. This leads to findings that are not representative of the sample of biltong hunters and this group was identified as anomalies. With anomaly detection, data is identified that deviate significantly from the range of sample values before the data analysis has been processed (Howell, 1995:61). From the survey sample of 676, a total of 27 outliers were therefore excluded.

Results of the estimation of regression of the determinants of the spending of biltong hunters are presented in Table 2.3. The model is a multiple linear regression of total spending on a number of quantitative and qualitative determinants of spending. The regression equation is expressed as follows:

$$Y_i = c + \beta X_i + u_i, \qquad (1)$$

Where Y_i represents the total spending by a biltong hunter and X_i is a vector of the determinants of spending with β the vector of regression coefficients, while c is the intercept and u_i is the error term. These explanatory variables may include quantitative variables such as income, total spend during the hunting season excluding game, total spend during the hunting season on game. It 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 linear model using the cross-section data obtained with the survey. The quantitative variables are logged since this compresses the scales in which the variables are. It also allows the coefficients to be interpreted as partial elasticity coefficients. An ordinary least square (OLS) estimator is used. The following table presents the estimation results:

Table 2.3: Examining the relationship between socio-demographic profile, travel behaviour and total spending by biltong hunters

	Unstandarized Coeficcients		**Standarized Coeficcients**			**Collinearity Statistics**	
Model	**B**	**Std error**	**Beta**	**t**	**Sig**	**Tolerance**	**VIF**
(Constant)	2.879	.618		4.656	.000		
Log income	.228	.070	.168	3.252	.001	.812	1.232
Home language	.025	.065	.019	.381	.703	.844	1.185
Marriage2	.025	.118	.011	.213	.831	.892	1.121
Log age	-.180	.258	-.034	-.697	.486	.889	1.125
Edu no school	-.112	.199	-.029	-.562	.574	.843	1.186
Edu degree	-.080	.067	-.072	-1.193	.234	.600	1.666
Edu postgrad	-.115	.087	-.075	-1.323	.186	.677	1.477
Edu professional	-.088	.081	-.065	-1.082	.280	.593	1.686
Occu manager	-.035	.076	-.023	-.459	.646	.871	1.148
Occu admin	.174	.192	.044	.905	.366	.905	1.105
Occu tech	.048	.105	.023	.454	.650	.872	1.147
Occu sales	-.263	.163	-.077	-1.615	.107	.949	1.054
Occu farmer	.179	.095	.095	1.881	.061	.851	1.175
Occu mining	-.083	.191	-.021	-.438	.662	.919	1.088
Occu education	-.058	.191	-.015	-.304	.761	.918	1.090
Occu non-profit	.079	.551	.007	.144	.886	.974	1.027
Prov NW	-.023	.090	-.013	-.254	.799	.826	1.210
Prov KZN	.023	.089	.014	.260	.795	.733	1.365

Prov EC	.023	.089	.014	.260	.795	.733	1.365
Prov NC	-.066	.200	-.016	-.332	.740	.937	1.068
Prov FS	.047	.091	.026	.516	.606	.889	1.125
Prov MP	.101	.111	.044	.905	.366	.903	1.107
ProvLim	.164	.143	.055	1.145	.253	.929	1.077

The results derived from Table 2.3 indicated a negative relationship between spending and Afrikaans-speaking hunters, non-married hunters and hunters with post-matric education. Hunters residing in Gauteng, North-West and Northern Cape spend less than hunters residing in Eastern Cape, Free State, Mpumalanga, KwaZulu-Natal and Limpopo. Spending per hunter was lower for all occupation variables except farmers, administrative workers, technical and non-profit workers. The behavioural indicators that significantly influence the spending of hunters are: the number of times hunting per year as well as the average days spent hunting.

2.5. Findings and implications

This research confirms that various aspects influence tourist expenditure. Based on the results of the analysis, the following findings and implications were made:

- This research reveals that biltong hunting appeals primarily to a niche market, namely Afrikaans (78.4%) males (98.8%). The results indicate that spending per Afrikaans-speaking hunter was less than for English-speaking hunters. Research done by Saayman and Saayman (2006a:218) on tourist expenditure at arts festivals in South Africa confirms that language has an influence on tourist expenditure.
- The research specifies that married hunters on average spend more than unmarried hunters. This is confirmed by Jang *et al.* (2004a:339), Bilgic *et al.* (2008:776) and Van der Merwe *et al.* (2007:192) who determine that married couples spend more on fishing and hunting than single travellers. This may be explained due to dual household incomes for married couples.
- Hunters with post-matric qualifications (degree and post-graduate) spend less than hunters with only matric. Bilgic *et al.* (2008:776) (Table 2.1) and Van der Merwe *et al.* (2007:192) support these findings. This might be explained due to the fact that these hunters might receive less leave from work, or perhaps have less of a cultural attachment to Afrikaner mythology and attachments to cultural recollections of hunting.
- Hunters residing further from the hunting destination spend less at the hunting destination. This finding is supported by Van der Merwe and Saayman

(2008:37) and Wong and Yeh (2009:19). This can be explained due to hunters residing further from the hunting destination tend to spend more on fuel and therefore have less money to spend on other expenditure (Van der Merwe & Saayman, 2008:21)

- The occupation of hunters plays an underlying role in total expenditure of hunters. Díaz-Pérez *et al.* (2005:962) confirm that occupation influences tourist spending. Spending per hunter was less for all variables except farmers, admin workers, technical and non-profit workers. This can be explained by the fact that many farmers stock their farms with game for private consumption (Van der Waal & Dekker, 2000:153). The results indicate that only occupation and income are significant socio-demographic indicators in distinguishing low spenders from high spenders. Cannon and Ford (2002:270) and Weagley and Huh (2004:265) support this view. They found that the income of visitors had an influence on increased expenditure by tourists. Jang *et al.* (2004a:338) and Díaz-Pérez, Bethencourt-Cejas and Álvarez-González (2005:962) indicated that occupation was one of the socio-demographic characteristics that influence tourist spending positively.
- The results specify that income is a significant socio-demographic indicator in distinguishing low spenders from high spenders. Cannon and Ford (2002:270), Hong *et al.* (1999:51), Weagley and Huh (2004:265) and Jang *et al.* (2004a:336) support this view (Table 2.1).
- The behavioural indicators that significantly influence spending of hunters are: hunting frequency and length of stay. Jang e*t al.* (2004a:339), Kastenholz (2005:563) and Alegre and Pou (2006:1352) confirm this and state that length of stay has a positive influence on tourist spending. Both of these variables have a positive impact on spending. A logical conclusion can be made that the hunters spending will increase when the hunting period and the times they go hunt increase.
- Professional and occasional hunters spend more than dedicated hunters. This can be due to the fact that dedicated hunters must pay high annual membership fees to belong to hunting associations. The results indicated that certain behavioural indicators were not significant, these include: group size, belonging to a hunters' association and the wearing of camouflage.

Based on these findings, the following implications are put forward:

Firstly, research shows that biltong hunting appeals primarily to a small, niche market, namely Afrikaans males but game farm and hunting operators' should expand their marketing efforts on advertising mediums popular to the more lucrative English-speaking market.

Secondly, product owners must adjust their marketing strategies to target the family market (married couples) as a niche market. This can be done by developing family hunting packages. Added to this, product owners need to develop their products to suit the family market as well as making necessary changes to their facilities to accommodate families. Father/son promotions can be offered where the son goes for free and or other siblings will be extended at 50% discount. Combining hunting with a family holiday makes it possible for the entire family to enjoy the hunting trip. This can be done by providing ecotourism activities such as hiking trails, bird watching, 4x4 trails, horse trails, mountain bike trails, etc. (Van der Merwe & Saayman, 2003:105).

Thirdly, product owners must develop hunting packages in close proximity to their product, which will benefit hunters situated closer to the product.

Fourthly, marketing strategies must focus on high income groups, 25,2% of the research sample. From this research it was reflected that farmers are the more lucrative segment in the hunters market. Marketers should focus their attention on attracting more farmers by addressing the needs of these hunters. This can be done by offering hunting packages for groups as hunting is a social activity where most hunters hunt in groups of four. Game farmers can also attract more hunters by offering game facilities such as accommodation, slaughtering, cooling, guides and trackers.

Lastly, product owners must develop hunting packages that motivate hunters to stay longer at the hunting destination. This can be done by developing hunting products where hunters can engage in other activities in the area such as visiting closely situated national parks. As an example hunters to Limpopo can visit Mapungubwe National Park, a UNESCO World Heritage site (Renssen, 2006:118). Product owners should also market hunting packages where hunters are rewarded if they come and hunt for a second time in the same year.

2.6. Conclusion

The aim of this study was to examine the socio-demographic profile and travel behaviour of biltong hunters in South Africa. This study provides important information about the socio-demographic and travel behaviour characteristics of South African biltong hunters. The results obtained by this survey reveal that socio-demographic and travel behaviour characteristics exert a strong influence over travel expenditure. This is in agreement with studies by Cannon and Ford (2002:269), Hong *et al.* (1999:51), Perez and Sampol (2000:635), Saayman and Saayman (2006a:220) on visitor spending.

The behavioural factors that exerted the greatest influence on tourist spending were: the number of hunting trips per year, length of stays and travel party size. Downward and Lumsdon (2000:259) and Kastenholz (2005:563) also found length of stay to be a determining factor in tourist spending. The main imperative for hunting recorded by hunters was the desire to obtain venison or biltong.

This research contributes towards the understanding of the socio-demographic and travel behaviour attributes of biltong hunters. Biltong hunting is an important cultural and economic activity, and the fact that most biltong hunters are Afrikaans males is of critical importance. A strong correlation between language and culture and biltong hunting therefore exists. This is significant as the entire biltong hunting industry is based on a rather small and culturally distinct segment of South African society. As the lucrative and expanding biltong hunting sector, which underpins the game industry, is largely dependent on a culturally and linguistically distinctive group, the study raises interesting questions for academics, marketers and game farmers. Given the dynamic nature of South African society, the decision that needs to be made by the marketer and game farmer is whether niche market focus or market diversification would better suit their current specific needs. Taking account of the current socio-demographic profile of the biltong hunter, further research could contribute to science by examining latent hunting interest in other cultural groups, and whether this could be rekindled to the advantage of all role-players in the wildlife industry.

Chapter 3

Geographical analysis and spending of hunters on game farms

3.1. Introduction

Southern and Eastern Africa is known amongst hunters for its hunting destinations with South Africa being the most prominent African hunting destination (Dorrington, 2007:3; Dorrington, 2005:12) which forms an important source of income for the South African wildlife industry (direct impact R5 billion in 2010) (Van der Merwe & Saayman, 2005:1; Scholtz *et al.*, 2010:15). It is also a fact that most wildlife-based extractive tourism (hunting) in South Africa occurs primarily on private land such as game farms and private game reserves (Van der Merwe *et al.,* 2007:184; Newsome *et al.*, 2005:16) which is a departure from the norm in other major African hunting destinations where hunting occurs primarily on concessions operated on state owned land (Flack & Neufeld, 2010:12,30,47,81,103,164,166,218,224,282).

South Africa has experienced a sharp increase in the number of game farms during the last ten years, and currently it is estimated that there are more than 9 000 game farms (Boddington, 2010:200; Mabunda, 2008:82). For most of the game farms and private game reserves, hunting forms the main income generator, and is therefore a major component of the wildlife industry in South Africa (Newsome *et al.,* 2005:16). Hunting in South Africa is primarily divided into two categories, biltong hunting and trophy hunting (Cloete *et al.*, 2007:71; Van der Merwe & Saayman, 2003:105; Eloff, 1999:22). The existence of a powerful demand by hunters for biltong (meat products) and trophies has led to an increase in the supply of this commodity (Beinart, 1990:168). By examining what is appealing to tourists (hunters), marketers can effectively lure potential hunters to specific destinations (McKercher & Lau, 2008:355). Abundance and variety of wildlife are major destination attributes for hunters within South Africa (Radder, 2000:129; Barnes *et al.*, 1999:104; Eloff, 1999:22; Radder, 2001:176; ABSA, 2003:17), but is also linked to the geographic location of the game farm (Van der Merwe & Saayman, 2008:16; Radder, 2001:176). Different species can be found in different province due to the type of biodiversity in in the specific area. For example the preferred province of hunting for Blesbuck, Impala, Kudu and Warthog is Limpopo. An important consideration is that the latter

three species are naturally occurring in Limpopo in large numbers (Mentis, 2009:12). The demand for tourism (hunting) can be stimulated by the geographic location of a hunting attraction (Keyser, 2009:133) due to game species commonly available in a specific area. Species indigenous to a specific province are mostly hunted in that province and this varies from province to province. In Limpopo and KwaZulu-Natal impala are the most common species while in the Northern Cape the springbok is the most common (Stuart & Stuart, 2009:168,170): Distance to the hunting destination has a definite effect on destination choice and depends on the travel motivations of hunters (Nicolau & Más, 2006:994). The aim of this chapter is to determine whether the location of a hunting product (game farm) plays an important role regarding the destination choice and expenditure of hunters. This has a distinct impact on the financial viability of a game farm, which is not only an attraction but also a business.

To remainder of the chapter is structured as follows: Section 3.2: literature review is presented. Section 3.3: method of research. Section 3.4: the results will be discussed. Section 3.5: findings and implications. Section 3.6: conclusions.

3.2. Literature Review

As indicated in the introduction, hunters make a significant contribution to the economy of South Africa (Scholtz *et al.,* 2010:36). It is therefore important to investigate the key factors influencing hunters' choice of destination, which will assist product owners in developing even more lucrative hunting destinations. The choice of a hunting destination is affected by different variables and destination attributes (Bruwer, 2003:425; Sirakaya & Woodside, 2005:824). These attributes include: distance travelled (Fesenmaier, 1988:182; Jurowski & Gursoy, 2004:299; Mackenzie, 1990:110; Mehmood, Zhang & Armstrong, 2003:260; Van der Merwe *et al.,* 2007:192; Bilgic *et al.,* 2008:775), infrastructure (Fesenmaier, 1988:182), cost of travel (Mackenzie, 1990:109; Bilgic *et al.,* 2008:779), quality and variety of game species (Barnes *et al.*, 1999:104; Eloff, 1999:22; Radder, 2000:130; Radder, 2001:176; ABSA, 2003:17; Mehmood *et al.*, 2003:250) scenic beauty (Barnes *et al.*, 1999:104; Eloff, 1999:22) and interact with nature (Mehmood *et al.*, 2003:250; Radder, 2005:1143; Radder, 2001:174; Beh & Bruyere, 2007:1468). Hunters typically evaluate a hunting destination based on these extrinsic characteristics (Goossens, 2000:317; Oigenblick & Kirschenbaum, 2002:1090; Durbarry & Sinclair, 2003:932; Klenosky & Gitelson, 1998:664) and the final choice of destination or type

of holiday is affected by these different variables and destination attributes (Bruwer, 2003:425; Sirakaya & Woodside, 2005:824).

These attributes have an impact on the volume of tourism flow between areas (Coshall, 2000:582; Lew & McKercher, 2006:406-407). The geography of hunting tourism is particularly sensitive to the social, mental and psychological perceptions of hunters (Kreisel, 2004:167; Gómez Martín, 2005:572) as they have different expectations from the hunting experience and hunters encounter and experience hunting destinations in different ways (McKercher *et al.*, 2006:647; Dolnicar & Huybers, 2007:448) depending on their specific hunting needs (biltong or trophy hunting). Therefore geographic research helps to enhance knowledge about destination attributes and what influences tourists' (or hunters') preferences for certain destinations (Joppe, Martin & Waalen, 2001:258). According to Mykletun, Crotts & Mykletun (2001:493), tourist markets need to be divided into different customer groups based on a consumer's origin. Geographic locality is a powerful segmentation variable used by marketers. Research done by Richards (2002:1055) indicates that the geographic origin of travellers plays an important role in travel motivation. A number of geographical studies have identified elements such as tourist motivations (Jang & Wu, 2006:315), tourist behaviour (Li, 2000:875; Nyaupane & Graefe, 2008:364) and travel activity patterns (McKercher & Lau, 2008:372) as influential to destination choice. These geographical studies are based on; geographical consciousness and tourism experience; geographical location of destination and movement patterns of tourists within a destination. Therefore it is important for game farm owners to understand what influences hunters' decisions in selecting a hunting destination/product so as to attract more hunters.

Saayman and Saayman (2006b:582) indicated one such aspect is the physical location of tourism products (game farms) which plays an important role in determining the value of the product on offer and also determines the amount that tourists (in this case, hunters) are willing to pay. It can be postulated that where a product has considerable tourist appeal, such as the Victoria Falls, location will be less of a determinant, but for similar products and those that do not have a readily identifiable uniqueness, such as guest houses and game farms, the location is vitally important and will have an impact on its financial viability. Therefore a shorter distance of game farms from major population centres, such as Gauteng makes it possible for the game farms to sustain themselves because of access and high disposable income. However, the geographic location of a game farm is interlinked

with the distinctive characteristics of the specific area, such as natural vegetation, climate and game species (Bansal & Eiselt, 2004:390; Murphy *et al.*, 2000:50; Zhang & Jensen, 2007:226; Eloff, 1999:22) which contribute to the hunting experience. Hunters are being pushed into making travel decisions by factors such as geographic location and wildlife species (Eloff, 1999:22; Radder, 2005:1143; Radder *et al.,* 2000:27; Radder, 2000:130; Radder, 2001:176; ABSA, 2003:17; Boddington, 2010:203).

The availability of a variety of game species is of economic and ecological advantage to game farm owners. Popular hunting provinces such as the Northern Cape, Limpopo, North-West and KwaZulu-Natal differ in terms of natural habitats and species available to hunters (Van der Merwe & Saayman, 2008:15). KwaZulu-Natal is the ideal habitat for the nyala, which has a restricted distribution and is found only in four Southern African countries, and the availability of record trophies attracts foreign hunters (Boddington, 2010:204; Renssen, 2006:70). Other exotic species such as bushbuck is restricted to their natural habitat in KwaZulu-Natal (Renssen, 2006:64-89), the Eastern Cape and Limpopo (Stuart & Stuart, 2007:210) and not commonly found in provinces such as the Western Cape where limited game is available (Cape Nature Conservation, 2003:3).

The hunting industry consists of a clustering of various factors within a specific geographic area (Van der Merwe, 2004:94). The geographic location where tourism occurs (game farms are located) can be seen as the geography of tourism (Crouch, 2000:64) and is concerned with the different elements interrelated in influencing hunters to travel (Lew, 2001:106; Li, 2000:874). These elements include: size of the game farm or nature reserve, infrastructure, special features, location, and different game species present (Van der Merwe, 2004:94). Geographers segment geographic locations into distinctive regions with their own unique characteristics (Lew, 2001:105; Gordon & Goodall, 2000:290-291). Tourist (hunting) attractions are an integral feature of the tourists' (hunters') location and tourists (hunters) may desire particular experiences from the destination area (Murphy *et al.*, 2000:44; Richards, 2002:1048). The consumer or hunter in this instance weighs up the benefits of different hunting alternatives assessing the cost, species, type of habitat, distance to destination and leisure time available (Bansal & Eiselt, 2004:391; Sirakaya & Woodside, 2005:815; Eloff, 1999:22; Radder, 2000:130; Radder, 2001:176; ABSA, 2003:17).

Nicolau and Más (2006:994), who conducted research in Spain, found that distance from home has a definite effect on destination choice and depends on the travel motivations of tourists. Tourism routes are the physical distance between the place of origin and the holiday destination (Bruwer, 2003:425; Decrop, 2006:67; Li, Wu & Cai, 2008:312; Bowden, 2003:258; Keyser, 2009:146). Prideaux (2000:54) states the importance of the relationship between various transport systems in tourism flow. The relationship between distance travelled and the proximity of the destination is a significant variable in destination choice (McKercher, 2008:1224; Nicolau & Mas, 2006:986; Dwyer, Forsyth & Rao, 2000:9; Keyser, 2009:143) and spending patterns of visitors (Tiefenbacher, Day & Walton, 2000:307; Nyaupane & Graefe, 2008:364).

Several studies have been devoted to analysing the geographical variables that influence a traveller's decision to visit a destination. Travellers are being lured into travel decisions by external factors such as destination attributes. Table 3.1 lists a summary of research into destination attributes contributing to tourist decision to visit wildlife tourism areas.

Table 3.1: Destination attributes that influence tourists' decision to visit wildlife tourism areas

Authors	Article title	Destination Attributes
Fesenmaier (1988).	Integrating activity patterns into destination choice models.	• **Distance** • Infrastructure
Borgers, Van der Heijden and Timmermans (1989).	A variety seeking model of spatial choice-behaviour.	• Surface area • **Distance** • Type of vegetation
Mackenzie (1990).	Conjoint analysis of deer hunting.	• **Distance** • **Cost of travel** • Entrance fees
Morey, Shaw and Rowe (1991).	A discrete choice model of recreation participation site choice, and activity evaluation when complete trip data are not available.	• **Cost of travel** • Activities at destination
Adamowicz, Louviere and Williams (1994).	Combining revealed and stated preference methods for valuing environmental amenities.	• **Distance** • Land type & size • Quality & type of species
Siderelis and Moore (1998).	Recreation demand and the influence of site preference variables.	• Surface area • **Travel cost** • Attributes related to natural attractions • Quality and services
Train (1998).	Recreation demand models with taste differences over people.	• Size of each area • **Travel costs** • **Variety of species** • Aesthetics • Number of camping sites • Number of access points • Number of protected species • Ranking in tourist guides
Dubin (1998).	The demand for recreation fishing in Montana.	• **Travel cost**
Adamowicz, Bocal, Williams and Louviere	Stated preference approaches for measuring passive use values: choice experiments and	• Surface area • **Number of game species**

(1998).	contingent valuation.	• Restrictions of use
Barnes *et al.* (1999).	Tourists' willingness to pay for wildlife viewing and wildlife conservation in Namibia.	• **Number of wildlife** • Scenic attributes • Unique, unspoiled nature/landscape
Eloff (1999).	Wins uit wildboerdery.	• Scenic beauty • Quality of facilities • **Variety of game species** • **Quality game** • Slaughtering facilities • General atmosphere
Schroeder and Louviere (1999).	Stated choice models for predicting the impact of user fees at public recreation sites.	• **Distance** and time of journey • Entry fees • Attributes related to parks
Radder (2000).	Expectations of kudu hunters in the Eastern Cape: a value chain constellation.	• Meat processing facilities, • **Variety of game,** • **High quality of game** • Qualified field guides
Van der Waal and Dekker (2000).	Game Ranching in the Northern Province of South Africa.	• Trophy Hunting • Ecotourism
Radder *et al.* (2000).	Staging experiences to satisfy needs: a game hunting experience.	• Accommodation • Slaughtering & cooling facilities • Guides & trackers • Transport
Radder (2001).	The nature, antecedents and role of South African kudu hunters' expectations in sustaining a competitive advantage.	• Nature • **Variety of game species** • Quality of game • Services: Tracker, slaughtering facilities
ABSA (2003).	Game Ranch profitability in South Africa.	• **Variety of game** • Weather • Accessibility
Mehmood *et al.* (2003).	Factors associated with declining hunting licence sales in Alabama.	• Safety • Behaviour of other hunters • Number of hunters • Size of hunting area • Amount of habitat • Number of game • Accessibility • **Distance** • Success rate • Other expenses
Van der Merwe and Saayman (2005).	Game farms as sustainable ecotourism attractions.	• Ecotourism • Breeding rare/endangered game species • Process game products • Hunting
Lindsey, Alexander, Frank, Mathieson and Romañach (2006).	Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable.	• **Variety of game** • Professionalism of hunting operator • Trophy quality • Hunting area • Scenic beauty • Nature conservation activities
Van der Merwe *et al.* (2007).	The determinants of spending by biltong hunters.	• **Distance** travelled • **Number of game species**
Beh and Bruyere (2007).	Segmentation by visitor motivation in three Kenyan national reserves.	• Culture • Adventure • Nature • Wildlife viewing • Scenic beauty
Bilgic *et al.* (2008).	Estimating fishing and hunting leisure spending shares in the United States.	• **Distance** travelled • **Travel Cost** • Hunting licence fees

The above body of research indicated that location (distance from home) is one of the most important attributes when visiting a wildlife tourism destination. Other considerations are travel cost, scenic beauty, abundance of game, variety of game species, game processing facilities and size of wildlife area.

The determinants that influence the visiting patterns of hunters in South Africa seem to correlate with the literature above. Research indicated that the distance hunters' travel has a direct impact on hunting destination choice (Eloff 1999:23; ABSA, 2003:19, 25; Van der Merwe *et al*., 2007:191,192; Radder & Bech-Larsen, 2008:256; Jonker, 2003:64). Hunters in general are prepared to travel a maximum of four hours to their hunting destination (Boddington, 2010:203). Destination attributes have increased the competition between game farms, service such as slaughtering, meat processing, cooling facilities (Radder, 2000:132; Radder *et al.,* 2000:24,27; Eloff, 1999:22) and variety of species and rare or exotic game species offered (Eloff, 1999:22; Radder *et al*., 2000:25; ABSA, 2003:28; Flack, 2010:189; Castley, Boshoff & Kerley, 2001:346) which contribute to attract more hunters.

The consumer or hunter in this instance weighs up the benefits of different hunting alternatives assessing the cost and distance to destination (Bansal & Eiselt, 2004:391; Sirakaya & Woodside, 2005:815). Extrinsic characteristics, such as place of origin of the visitor also influence visitor spending patterns (Cannon & Ford, 2002:264; Dolnicar, Crouch, Devinney, Huybers, Louviere & Oppewal, 2008:46). The number of tourist arrivals in an area, and the level of spending at a destination, is closely related to the prosperity of a specific tourism sector (Sheldon, 1993:13; Perez & Sampol, 2000:625) and is dependent on the income levels and prevailing socio-economic conditions of these tourists.

3.3. Method of research

The data used for the analysis were gathered over a five-month period between October 2007 and February 2008. The methodology used will now be discussed under the following headings: (i) the questionnaire, (ii) the method and (iii) the statistical analysis.

3.3.1. 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.

3.3.2. Method

Quantitative research was conducted and a probability sampling method was used. The research population and the sample consisted of all the members of the three largest hunting associations in South Africa. These are the South African Hunters and Game Conservation Association (SAHGCA) (*N*=21 000), the Professional Hunters Association of South Africa (PHASA) (*N*=1 039) and the national Confederation of Hunting Associations of South Africa (CHASA) (*N*=18 000) (N = 40 000). The questionnaires were distributed as follows:

- Firstly, questionnaires were mailed to the members of the SA Hunters and Game Conservation Association along with their monthly magazine (*SA Hunters/SA Jagters*).
- Secondly, an interactive questionnaire was loaded onto the websites of SAHGCA, PHASA and CHASA during the months of September and October 2007.

In total, 676 (n) questionnaires were returned via email, fax and overland mail. Maree and Pietersen (2007:179) 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, 2007:179).

3.3.3. Statistical analysis

Firstly, a statistical analysis was conducted using SAS System for windows (SAS Institute Inc., 2002-2005). Descriptive statistics were used to indicate the five most popular provinces to hunt as well as the five provinces of hunters' origin. The results indicated that Limpopo (Damm, 2005:14; Van Niekerk, 2006:51), Northern Cape (Cloete *et al.*, 2007:77; Van Niekerk, 2006:51), Eastern Cape (Damm, 2005:2; Radder *et al.,* 2000:25; Van Niekerk, 2006:52), North-West (Jonker, 2003:64-65) and KwaZulu-Natal (Nell, 2003: 100–102) are the most preferred hunting provinces in

South Africa which correlates with previous research. This method provides simple summaries of the sample and the measures (Zikmund, 2003:402). Frequency distribution was used for categories such as marital status, education, occupation and method of hunt. Frequency distribution shows the number of times that a variable's different values occur in a sample (Pietersen & Maree, 2007:184). The median was used to describe numerical data (age, number of times hunting and average length of stay). The median is the middle value in a data set and is a more accurate assessment of a trend where outliers exert a strong influence on normal distribution (Pietersen & Maree, 2007:187).

Secondly, an investigation of the data indicates that the main sources of hunters for this survey originate from Gauteng (35.54%), KwaZulu-Natal (13.55%), Free State (12.05%), North West (10.39%) and Western Cape (9.04%).

A multiple linear regression analysis was undertaken using to identify the variables that influence biltong hunters' expenditure. This regression analysis was performed to determine the variables that influence biltong hunters' expenditure as the dependent variable, which was measured by the logarithm of the total expenditure of a hunter. The independent variables consist of dummy variables as well as variables directly obtained from the questionnaire, namely: age, number of times hunting, length of stay at hunting destination and the logarithm of total income.

The dummy variables were included to handle categorical data as follows: (1) married hunters = 1 versus unmarried hunters = 0; (2) dedicated hunter = 1 versus occasional hunter = 0; (3) KwaZulu-Natal = 1 versus the remaining four provinces of origin = 0; (4) North-West = 1 versus the remaining four provinces of origin = 0; (5) Free State = 1 versus the remaining four provinces of origin; (6) North-West = 1 versus the remaining four provinces of origin = 0; (7) Western Cape = 1 versus the remaining four provinces of origin = 0.

In a multiple linear regression model, adjusted R squared measures the proportion of the variance in the dependent variable accounted for by the explanatory variable (Howell, 1995:167). The regression model includes different demographic variables such as age of hunter, language of hunter, marital status of hunter, level of education, province of origin of hunter, income of hunter and travel behaviour variables such as number of times they went hunting, number of days spent at

hunting destination, dedicated hunter status and hunting group size. This analysis will examine the total spending by biltong hunters and these variables.

3.4. Results

The results of this survey will be discussed as follows: Firstly a profile of hunters will be given regarding the five provinces of origin, Gauteng, KwaZulu-Natal, Free State, North-West and Western Cape (Table 3.2) and, secondly, spatial analysis regarding province of origin will be provided. Thirdly, a regression analysis will be performed to determine the relative strength or significance of the relationship between spending and its different determinants. From a development and economic point of view, it is necessary to identify the origin of hunters as well as their preferred hunting destinations. The importance of this for game farms owners is that it will assist them in identifying the correct market as well as where to do possible game farm developments (Map 3.1). It will also assist them in targeting the most lucrative hunting markets.

3.4.1. Profile of hunters

The profile of the provinces of origin of hunters is presented in Table 3.2. Descriptive analysis of the sample showed that the majority of hunters of this sample are male, married, between the ages 47 and 58 years, and educated (diploma or degree). The five most important provinces of origin are Gauteng, KwaZulu-Natal, the Free State, North-West and the Western Cape. The largest percentage of hunters from this sample is Afrikaans-speaking except for hunters originating from KwaZulu-Natal, which was mostly English-speaking. Hunters originating from the Free State had the highest annual income (R450 000.00). Hunters from Gauteng, North-West and KwaZulu-Natal indicated that they stay for an average of four days. Hunters originating from the Free State and the Western Cape had an average length of stay of three days. Hunters originating from Gauteng and KwaZulu-Natal hunt an average of four times during the hunting season in comparison with three times for the remaining three provinces.

The results also showed that hunters prefer to hunt in groups and by means of walk and stalk. Hunters residing in the Western Cape and Gauteng had the highest average expenditure. This may be attributed to Gauteng and Western Cape being the economic hubs of South Africa (Saayman & Saayman, 2006:578). The results further bring to light that hunters residing in the Western Cape also had the highest

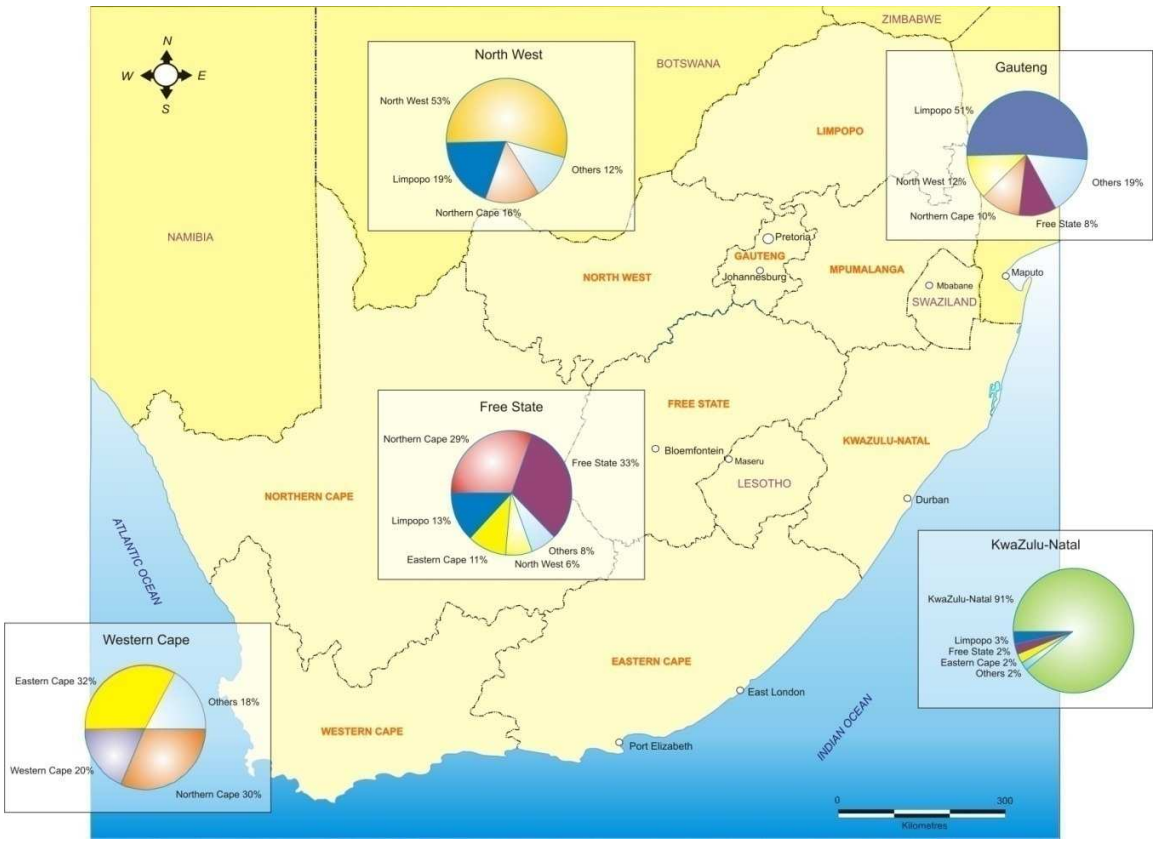
expenditure on game hunted. KwaZulu-Natal had the lowest average expenditure and lowest expenditure on game hunted.

3.4.2. Spatial analysis on game hunted

Map 3.1 portrays the provinces of origin of hunters as well as the most preferred hunting provinces. From Map 3.1, it is clear that a large percentage of hunters prefer to hunt in their province of origin (excluding Gauteng where a small percentage (4.4%) hunt in the province itself) as well as neighbouring provinces. This finding supports the notion that distance plays a role in the selection of hunting destinations and also supports Boddington (2010:203) who indicated that hunters are willing to travel short distances of up to four hours. The results revealed that hunters from Gauteng prefer to hunt in provinces such as Limpopo (51%), North-West (11%) which is adjacent to Gauteng, as well as the Northern Cape (10%) and the Free State (8.05%) which is closely situated (Map 3.1). This result is attributed to the limited number of game farms in Gauteng (Van der Merwe & Saayman, 2003:104), which forces hunters to travel greater distances.

Table 3.2: Hunters province of origin

Hunters' province of origin	Gauteng	KwaZulu-Natal	Free State	North-West	Western Cape
Province as percentage of total	35.54%	13.55%	12.05%	10.39%	9.04%
Preferred hunting provinces	Limpopo (51.27%) North-West (11.86%) Northern Cape (10.17%) Free State (8.05%) Eastern Cape (5.08%) Gauteng (4.24%) Mpumalanga (2.54%) KwaZulu-Natal (1.69%)	KZN (91.11%) Limpopo (3.33%) Free State (2.22%) Eastern Cape (2.22%) Northern Cape (1.11%)	Free State (32.50%), Northern Cape (28.75%) Limpopo (12.50%) Eastern Cape (11.25%) North-West (6.25%) KwaZulu-Natal (5%) Western Cape (1.25%) Mpumalanga (1.25%)	North-West (53.62%) Limpopo (18.84%) Northern Cape (15.94%) Eastern Cape (2.9%) Free State (2.9%) KwaZulu-Natal (1.45%) Western Cape (1.45%) Mpumalanga (1.45%)	Eastern Cape (31.67%), Northern Cape (30.00%) Western Cape (20%) Limpopo (11.67%) North-West (1.67%) KwaZulu-Natal (1.67%) Free State (1.67%)
Hunt alone/group	Groups (75.11%)	Groups (70.33%)	Groups (75.95%)	Groups (74.65%)	Groups (60.66%)
Length of stay	4	4	3	4	3
Times hunt a year	4	4	3	3	3
Average expenses	R8 300.00	R4 800.00	R5 830.00	R6 125.00	R9 675.00
Game expenses	R7 225.00	R5 800.00	R8 100.00	R7 025.00	R9 725.00
Method of hunt	Stalk (91.56%)	Stalk (78.02%)	Stalk (42.50%)	Stalk (92.96%)	Stalk (80.33%)
Language	Afrikaans (82.70%)	English (64.84%)	Afrikaans (95%)	Afrikaans (88.73%)	Afrikaans (83.61%)
Marital Status	Married (85.65%)	Married (85.38%)	Married (91.25%)	Married (94.37%)	Married (96.72%)
Age	58	50	48.50	47	47
Income	R350 000.00	R300 000.00	R450 000.00	R400 000.00	R375 000.00
Education	Diploma/Degree (38.56%)	Diploma/Degree (43.82%)	Diploma/Degree (26.25%)	Diploma/Degree (40.85%)	Diploma/Degree (39.34%)
Occupation	Self-employed (25.53%)	Self-employed (23.33%)	Professional (27.85%)	Self-employed (19.72%)	Self-employed (32.79%)



Map 3.1: Hunters' province of origin and hunting destination

(Authors's own creation)

Hunters from KwaZulu-Natal (KZN) indicated that the majority of hunters prefer to hunt in KwaZulu-Natal itself (91%). A small percentage, however hunts in the Free State (adjacent to KZN) and Limpopo. Hunters originating from the Free State mainly hunt in the Free State (32%) and the neighbouring Northern Cape (28%). Twelve percent indicated that they hunt in the Limpopo province. In the case of hunters originating from North-West, 53% hunt in the North-West itself and 18% in Limpopo and 15% in the Northern Cape, respectively, which are both neighbouring provinces. Hunters originating from the Western Cape prefer to hunt more in the neighbouring provinces such as Eastern Cape (31%) and Northern Cape (30%) than they do in their own province (20%).

Therefore the greater the number of hunting opportunities that exist in a province, the greater the number of hunters resident in that province and in neighbouring provinces. Again, the

results reveal that distance plays a major role in the selection of hunting destinations as most hunters hunt in their own or adjacent provinces. The popularity of Limpopo as a hunting destination should be noted. This could be attributed to the greater number of game farms and the game species that this province has to offer.

3.4.3. Linear regression analysis based on province of origin

The estimates of the model indicate that certain dependent variables were not significant. These variables include language of respondent, level of education of the hunter and whether they hunt alone or in a group. The research revealed that variables that are positively linked to spending are: age, number of times hunting, length of stay, marital status of hunter, hunters residing in KwaZulu-Natal, income of hunter and dedicated hunter status. Table 3.3 describes the variables used in the analysis.

Table 3.3: Description of linear regression model for biltong hunters' expenditure based on hunters' provinces of origin.

Explanatory variables	**Beta**	**p**	**Semi-partial correlations**	**Contribution to R^2**	**Effect size: *Contribution to R^2/ 1-R^2***	
Age	-.163	.000*	-.154	.024	.033	2%
Times Hunt	.259	.000*	.244	.060	.082	6%
Length of stay	.142	.000*	.137	.019	.026	2%
Language	-.080	.061	-.072	.005	.007	0.5%
Marital status	-.089	.026*	-.085	.007	.010	0.7%
Education	.033	.401	.032	.001	.001	0.1%
Gauteng	.044	.425	.030	.001	.001	1%
KwaZulu-Natal	-.177	.000*	-.137	.019	.026	2%
Western Cape	-.002	.959	-.002	.000	0	0.0%
North-West	-.041	.382	-.033	.001	.001	0.1%
Free State	.013	.779	.011	.0001	0	0.01%
Income	.315	.000*	.299	.089	.122	9%
Dedicated hunter	.087	.025*	.085	.007	.010	0.7%
Hunt in groups	-.008	.835	-.008	.000	0	0.01%

* Adjusted R^2 = .271

* Statistically significant, $p<0.05$

The results of the linear regression analysis indicate that age, times hunting, length of stay, marital status, residing in KwaZulu-Natal, income of hunter and dedicated hunter status are variables that are highly significant ($p<0.05$) determinants of the spending per hunter at a game farm. The interpretation of the results leads to the following:

To explain the contributions of each explanatory variable, the contribution of each variable is obtained as the square of its semi-partial correlation. This gives the amount that R^2 will decrease if that variable is discarded from the model. Dividing this contribution to R^2 by the unexplained variance $1-R^2$, result in the following effect size:

$$\textit{Effect size} = \frac{\textit{Contribution to } R^2}{1-R^2}$$

This effect size is a measurement of the strength of the relationship between the dependent variable and the current independent variable, controlling for the remaining variables in a statistical population, or a sample-based estimate of that quantity. Sensible guidance values are: Small effect: = 0.01, medium effect: = 0.1 and large effect: 0.25 (Steyn, 2009:11).

The results of the panel data indicated that the following determinants were statistically significant:

- Income - $R^2 = 0.89$, effect size = *0.122*, therefore a medium effect.
- Number of times hunting - $R^2 = 0.060$, effect size = *0.082*, therefore a small effect.
- Hunters residing in KwaZulu-Natal - $R^2 = 0.019$, effect size = *0.026*, therefore a small effect.
- Age - $R^2 = 0.024$, effect size = *0.033*, therefore a small effect.
- Length of stay - $R^2 = 0.019$, effect size = 0.*026*, therefore a small effect.
- Married - $R^2 = 0.009$, effect size = *0.010*, therefore a small effect.
- Dedicated hunters - $R^2 = 0.007$, effect size = *0.010*, therefore a small effect.

3.5. Findings and implications

From the results, the following findings and implication can be drawn;

Firstly, from the results it is clear that location of game farms does matter! The results reveal that location must be viewed from two perspectives. Location in the sense that hunters prefer to hunt in their province of origin (residence) and neighbouring provinces, this result suggests that hunters do not prefer to travel long distances - a drive from two to four hours (Boddington, 2010:203). In addition to this, the variety of species (which is influenced by the biome) and the number of game farms play a major role in contributing to the hunting experience. This finding

confirms the results of research done by Saayman and Saayman (2006b:583) that the size and variety of a tourism event matter. The latter has the drawing power of increasing travel even of markets in excess of four hours travel time. The same can be argued for hunters residing in the North-West and hunting in KwaZulu-Natal, where species such as bushbuck are more commonly found than in the North-West (Flack, 2010:189; Castley *et al.*, 2001:346). The linear regression analysis revealed that hunters residing in KwaZulu-Natal spend less than hunters from the remaining four provinces of origin. This might be because 91% of these hunters hunt in their own province and spend less on accommodation and fuel. Therefore the implication is that game farm owners need to also market their product in adjacent provinces to increase spending. Game farmers must also, in their marketing material, emphasise species that are mainly found in that region such as gemsbok and springbok in the Northern Cape (Kalahari) and impala in the lowveld (Flack, 2010:188). By doing this, game farm owners would be able to attract more hunters which will, in turn, result in higher earnings. Game farm owners can further diversify their product by offering extra services such as skin and meat processing facilities (Radder, 2000:132; Radder *et al.*, 2000:24, 27).

Secondly, the data revealed that the majority of hunters from this sample originate from Gauteng (Table 3.2 & Table 3.3) (Van der Merwe, & Saayman, 2008:8). Gauteng is also the province with the highest per capita income in South Africa (Saayman & Saayman, 2006b:578). Therefore the implication is that this province can be seen as a major generator of hunters, and game farm owners should therefore focus their marketing efforts to attract hunters from this hunting market.

In addition to the above, hunters from provinces Gauteng and KwaZulu-Natal record a higher hunting frequency per hunting season than the remaining three provinces (four times during a hunting season versus three times for the other provinces). Again, these provinces could be targeted by game farmers by means of offering different packages to lure them to other provinces. These packages could include 4x4 routes, hiking trails, women's adventure activities etc. Game farm owners could also investigate the benefits of loyalty rewards or discounts to encourage these hunters to visit their hunting facility (Van der Waal & Dekker, 2000:153). This will result in increased visits to the specific facility. Monthly newsletters with regular updates on species on offer as well as promotions can be distributed to regular hunters.

Thirdly, from the results it is clear that Limpopo is the most popular province in which to hunt for hunters in this sample. Approximately half (46.8%) of the game farms in South Africa are located in Limpopo (Van Niekerk, 2006:51; Bothma, 2002:480; Van der Merwe & Saayman, 2003:104; Steenkamp *et al.*, 2005:27). Therefore the implication is that game farms in the Limpopo province can be more lucrative investments than game farms in other provinces. Factors that can contribute to increased income for the game farm owner are availability to hunters of more expensive and rare antelope species such as eland, red hartebeest, black wildebeest and kudu (Boddington, 2010:200; Radder *et al.*, 2000:25; ABSA, 2003:28,34; Van der Merwe, Saayman & Krugell, 2004:107; Grové, Taljaard & Cloete, 2007:521; Van der Merwe *et al.*, 2007:92;112, Van Niekerk, 2006:53,55; Eloff, 1999:22; Botha, 2011:5-6). The survey returns indicate that hunters from Gauteng represent 35% of the total national pool of hunters, and 51.27% of these hunters hunt in the adjacent Limpopo. This has important implications for Limpopo province, which relies heavily on this source of hunters. Therefore hunters do not have to travel long distances and can afford to spend more on game. This tends to support the notions that distance plays a major role in the selection of hunting destinations (Van der Merwe & Saayman, 2008:15; Jonker, 2003:64).

Lastly, the regression analysis showed that the variables that have a positive correlation with spending are: the age, marital status the number of hunting trips, length of stay, dedicated hunter status, hunters residing in Gauteng, Free State, North-West and Western Cape – therefore the place of origin of hunters and the income of the hunter

This was also confirmed by previous researchers: age (Kastenholz, 2005:563,559; Cannon & Ford, 2002:264; Perez & Sampol, 2000:630), marital status (Mok & Iverson, 2000:302; Perez & Sampol, 2000:630), the number of trips, the length of stay (Jang *et al.*, 2004a:338; Kastenholz, 2005:563; Kozak *et al.,* 1998:148; Mules, 1998:268; Perez & Sampol, 2000:630; Agarwal & Yochum, 1999:173; Saayman & Saayman, 2006b:582), place of origin (Lim, 1997:845; Kastenholz, 2005:559; Perez & Sampol, 2000:630) and the income (Jang *et al.*, 2004a:336; Cannon & Ford, 2002:264; Kozak *et al.,* 1998:148).

The determinant with the strongest correlation is the income of the hunter (Table 3.3). A specific target market could therefore be identified through the regression analysis. Marketing strategies should be based on the determined target market. The clear implication of this finding is that the market segment defined as young (younger than 47 years), unmarried, high

income men should be specifically targeted by game farm owners. Product diversification could be implemented by game farm owners in order to retain hunters for additional days. Game farm owners can use this information to diversify their product by learning more about the hunters. Additional activities that could be offered to encourage a longer length of stay. This could include 4x4 trails and hunting packages that include a number of species over a time span of seven to ten days.

Marketers should aim at attracting more of these hunters by directing advertising material to niche publications, not necessarily just hunting magazines and could include publications such as Men's Health and Sports Illustrated. Hunting packages and special offers could be mailed to the members of the SA Hunters and Game Conservation Association together with their monthly magazine (*SA Hunters/SA Jagters*). Advertisements can also be loaded on to the websites of SAHGCA, PHASA and CHASA.

3.6. Conclusion

The aim of this chapter was to determine whether the location of a game farm influences the magnitude of hunters' expenditure and the probability of hunters visiting the game farm. This research outlined the geographic determinants of high spenders in the biltong hunting industry. The research shows that location is important and that, in all instances, hunters hunt in their provinces of origin, even in the case of Gauteng and the Western Cape where hunting opportunities are limited (Cape Nature Conservation, 2003:3; Reilly *et al.*, 2003:144). While location has been shown to be of critical importance in attracting hunters, the quality of the experience, value for money and the variety of game species on offer can partially offset this aspect (Eloff, 1999:22). This is evident from this research as hunters from provinces such as the Western Cape (11.67%) hunt as far afield as Limpopo. This shows that biltong hunting is not simply an economic activity driven by the distance/cost equation, but rather a cultural activity where distance is secondary to the experience (Eloff, 1999:22). The strong attraction of Limpopo for hunters is due to several factors including an abundance of game farms (Van Niekerk, 2006:51) and a great variety of game species. Its prominence as a hunting destination has, to some extent, been challenged by game farms in other provinces, e.g. the Eastern Cape, where a great variety of species are on offer including exotic species such as red lechwe (Flack, 2010:189). Gauteng, as the economic powerhouse of South Africa, understandably produces the most hunters and the highest expenditure on hunting, but research has not ascertained

whether this market has reached saturation point, and further research is needed. It is recommended that a game farmer's marketing efforts should concentrate on lucrative sources of hunters and regional strongholds, and that marketing should be focused on specific provinces such as Gauteng. It would therefore not be prudent for a game farm owner to adopt an unfocused approach to advertising, and marketing should be confined to media (newspapers, magazines, radio) within the top five provinces of hunters' origin. Focusing marketing efforts on high spenders will also reduce impact on the environment by reducing the human footprint, because a high-paying hunter has less of an impact than five hunters generating the same income.

Chapter 4:

The relationship between popular species and spending

4.1. Introduction

South Africa has the largest hunting industry in sub-Saharan Africa (Lindsey *et al.*, 2007:457) and hunting contributes significantly to the economy of South Africa (Van der Merwe & Saayman, 2008:37; Damm, 2005:1). Biltong hunting, a subset of the hunting industry in South Africa, has undergone dramatic shifts since the mid-19th century and has gone from being an essential survival activity in the harsh, African wilderness to a recreational activity which still exhibits strong cultural affinity (Carruthers, 1994:266). According to Van der Merwe *et al.* (2007:184) biltong hunting contributes significantly to the general income of game farms in South Africa.

Game farming in South Africa has many income generating facets such as accommodation, butchery facilities, food and beverage, daily fees and game hunted, of which game generates the most income (Van der Merwe *et al.,* 2007:189). Game sales have two possibilities, via game auctions and/or, game that is hunted by hunters (ABSA, 2003:5; Carruthers, 2008:175; Cloete *et al.*, 2007:72; Van der Merwe *et al.*, 2004:112; Van Niekerk, 2006:52; ABSA, 2003:28). Previous research revealed that hunters' single biggest expenditure at the hunting destination is the game hunted (Van der Merwe *et al.,* 2007:185,187; Scholtz *et al.*, 2010:20). A hunting package offered to hunters has to be market related (reasonable) as biltong hunting has such strong economic links and any marketing must be highly sensitive to price (Dekker, 1999:37). Because biltong hunting has a direct link to a product that can be bought elsewhere (biltong is freely available in every supermarket or butcher in South Africa) the plentiful supply of beef biltong will exert an economic influence on the price game farmers can ask hunters to pay. This is supported by the fact that common species such as springbok, impala and kudu are the most often hunted for biltong (Scholtz *et al.*, 2010: 17,18). If there wasn't this large supply of a competing product, and if biltong hunting wasn't concerned with a tangible consumable product, then almost any species could be hunted for biltong for example buffalo.

The importance of game as the biggest income generator of most game farms makes further investigation into the major species inevitable. Therefore the aim of this chapter is to determine the profile of hunters of the most popular game species regarding income generating species and most preferred biltong hunting species.

The remainder of this chapter is structured as follows; in Section A, a literature review is presented. Section B covers the method of research. Section C presents results indicating the major outcomes of the research. Section D presents the findings and implications. Section E contains the conclusions and recommendations.

4.2. Literature Review

Most revenue on game farms is earned through hunting (Van der Merwe *et al.,* 2007:185,187; Scholtz *et al.*, 2010:20) and the expenditure of hunters is influenced by their socio-demographic characteristics and travel behaviour (Cannon & Ford, 2002:264; Jang *et al.,* 2004a:333,339; Kastenholz, 2005:563; Beerli & Martin, 2004:626; Alegre & Pou, 2006:1352). The most popular game species hunted regarding income and biltong hunting are springbok, impala, blesbok, kudu, blue wildebeest, eland and gemsbok (oryx) (Scholtz *et al.,* 2010:17,18). Game farm owners need to determine the profile of hunters of these popular species. Once this is determined, game farm owners can decide on a marketing approach for this specific target market which will also increase profitability (Molera & Albaladejo, 2007:758-759; Perez & Sampol, 2000:625).

To quantify the economic impact of hunting, the economic impact of hunting activities at a specific destination needs to be estimated (Frechtling, 2006:26). Forecasting hunting demand at a specific destination has become one of the most critical elements for hunting industry marketers and planners (Song, Wong & Chon*,* 2003:436). Increasing hunter numbers will result in a greater income for the game farm (Sheldon, 1993:13; Perez & Sampol, 2000:625). This can be obtained by meeting the expectations of hunters. Hunters are being forced into making travel decisions by factors such as variety of species and cost of visit (Eloff, 1999:22; Radder, 2005:1143; Radder *et al.,* 2000:27; Radder, 2000:130; Radder, 2001:176; ABSA, 2003:17; Boddington, 2010:203; Reilly *et al.,* 2003:144).

In order for game farm owners to expand their market share in the emerging hunting industry, it is necessary to identify the special characteristics of this market in order to have maximum market penetration (Van Eyk, 2003:6).

Market segmentation forms an integral part of the marketing process (Jang *et al.*, 2004b:19). Normal segmentation of tourists is conducted on the basis of socio-demographic information (age, language, gender) and travel behaviour (length of stay, group size, number of trips) and is useful in selecting a destination region's travel market (Gonzáles & Bello, 2002:51; Horneman *et al.*, 2002:23). However, in the event of hunting as illustrated in Figure 4.1 there is a third variable that makes it different to other tourism products and this variable needs to be included in the market segmentation process. This variable is the game species available for hunting. This plays an important part in the decision-making process of hunters and contributes significantly to hunters' satisfaction and to the income of game farms (Eloff, 1999:22; Botha, 2011:6). Figure 4.1 is used as framework for the discussion of the literature.

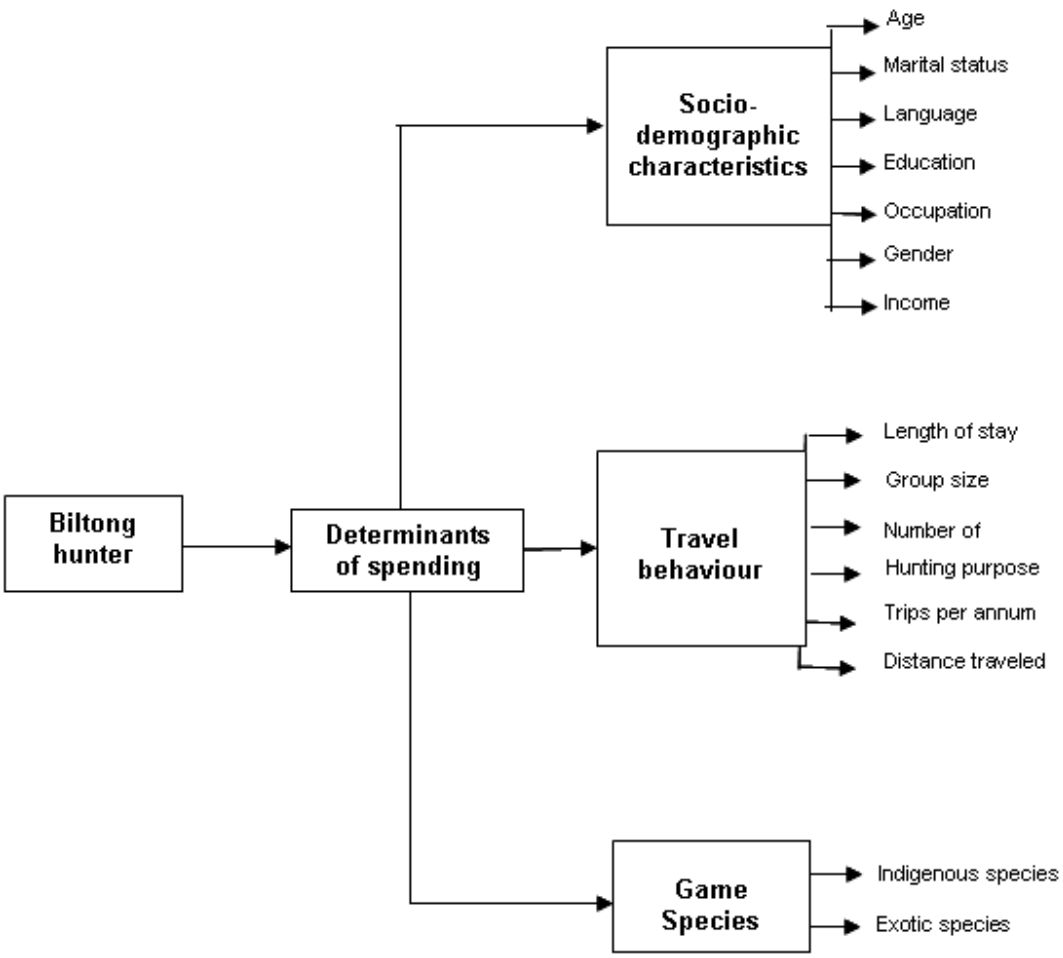


Figure 4.1: Determinants of spending for biltong hunters (Sources: Van der Merwe *et al.,* 2007:192; Van der Merwe *et al.,* 2004:112; Eloff, 2002: 19,21).

Game species

Jang *et al.* (2004a:337,340) Saayman, Saayman and Naudé (2000:376) and Van Niekerk (2006:53) found that product offering at a destination, in this case game, has a positive impact on tourist expenditure.

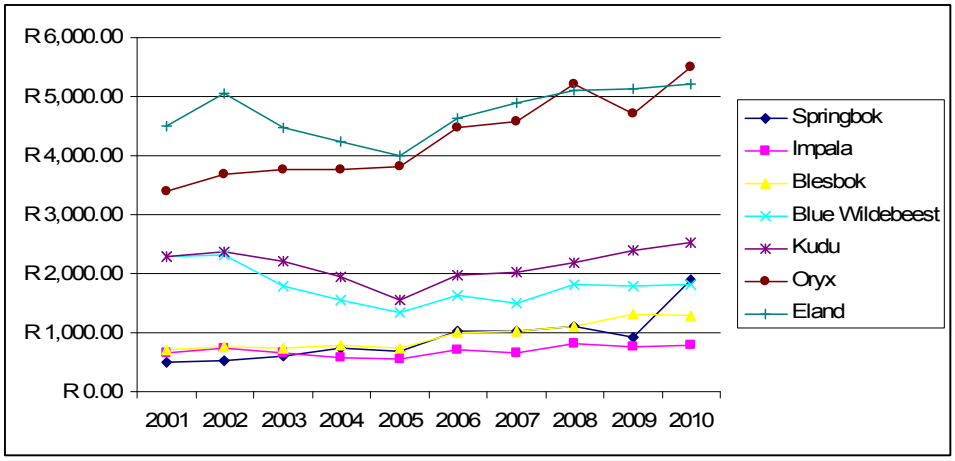


Figure 4.2: Average game auction prices of popular species hunted

Figure 4.2 shows the annual prices at game auctions over the past ten years and indicates a steady price increase in some of the popular game species hunted in South Africa by biltong hunters since 2001 (Vleissentraal, 2011; Anon, 2004; Erasmus, 2011). The prices of the smaller and more affordable species that are sought after by biltong hunters has risen faster than for larger species which can be directly linked to the demand in species from hunters. Only two species, springbok and blesbok have risen by more than 7% per year (Vleissentraal, 2011). High value species such as sable, roan antelope, black rhino and cape buffalo are mostly used for trophy hunting (Eloff, 1999:22; Lindsey *et al.*, 2007:458; Cloete *et al., 2*007:74; ABSA, 2003:27,34) and the more commonly hunted species such as eland, red hartebeest, kudu, blue wildebeest, impala, gemsbok, springbok and warthog, for biltong hunting (Van der Merwe & Saayman, 2008:18; Van der Waal & Dekker, 2000:155). It can be accepted that live game prices are driven by demand for trophy hunting and meat hunting, as well new game farm developments (ABSA, 2003:i,4; Eloff, 1999:23; Eloff, 2002:19). This increase can be attributed to a number of factors, such as growth in the wildlife tourism industry (Briel, 2006:2; Reilly *et al.,* 2003:141), the increase in the number of game farms (Bothma, 2002,ii; Boddington, 2010:200) and increasing awareness of the health advantages of game meat for consumers (Hoffman, Crafford, Muller & Schutte, 2003:129).

Game has an economic value and worth conserving on a game farm. The economic value also means that farmers now restock their land with game. Game farm owners need to determine the most profitable game species and market segments of biltong hunters to increase their income (Van der Merwe *et al.,* 2007:192; ABSA, 2003:i; Van Niekerk, 2006:53; Eloff, 1999:22,

Radder, 2001:176). As stated, expenditure on game accounts for by far the largest portion of expenditure by hunters on a game farm (Van der Merwe & Saayman, 2008:37). Understanding which species generate the greatest income and those that are more popular than others for hunters will enable game farmers to host these species and, as a result, meet the needs and expectations of hunters, which can result in generating more revenue for the game farm owners (Eloff, 1999:22, Radder, 2001:176; ABSA, 2003:17).

The contribution made by hunters to the economy of South Africa (R5 billion per season) and the increasing popularity of biltong hunting since the 1960s (Carruthers, 2008:169; Scholtz *et al.*, 2010:15; Van der Merwe *et al.,* 2004:105) make further investigation into the key factors that influence spending crucial.

Price is very important to hunters. A huge push factor for hunters is the price of a cherished commodity, biltong, and the relative value for money that one gets from hunting (Beinart,1990:168). Therefore it is important for game farm owners to determine the variables that influence the spending of biltong hunters such as socio-demographic characteristics and travel behaviour (Cannon & Ford, 2002:264; Jang *et al.,* 2004a:333; Kastenholz, 2005:563; Beerli & Martin, 2004:626; Jang e*t al.,* 2004a:339; Alegre & Pou, 2006:1352). Once this is determined, they can provide a more viable marketing strategy and style which will ensure a more profitable product.

Socio demographic characteristics

Tourist expenditure can be explained by two types of variables: socio-demographic characteristics of the tourist (age, gender, occupation, family status, number of children and level of education) (Alegre & Pou, 2006:1352; Letho *et al.*, 2004:813; Kastenholz, 2005:563; Cannon & Ford, 2002:264; Jang *et al.*, 2004a:338) and economic variables (disposable income, price of holiday) (Jang *et al.*, 2004a:336; Cannon & Ford, 2002:264; Durbarry & Sinclair, 2003:938). Biltong hunting expenditure results from a clustering of various factors. These factors include the socio-demographic characteristics of the hunter such as disposable income and distance to hunting destination (Van der Merwe *et al.,* 2007:192).

Various authors have studied the relationship between socio-demographic characteristics and tourism expenditure. From research conducted by Lee (2001:660) on the marketing of the boating business, it is evident that an understanding of the nature of visitors is important. Socio-

demographic factors play an important role in the expenditure levels of visitors. This research indicates that income and education are the most significant role players. The findings of Jang *et al.* (2004a:333) on expenditure levels of Japanese tourists to the United States is that income, education, occupation and age are the socio-demographic characteristics that play an important role in tourist expenditure. According to Cannon and Ford (2002:264) the socio-demographic variables that influence visitor spending are age, marital/family status, income, origin, group size activities and duration of trip. A study conducted by these authors on spending patterns of sport visitors to Alamo Bowl College football games indicated that income was the most significant socio-demographic variable in visitor spending (Cannon & Ford, 2002:270). Kastenholz (2005:563) examined visitor spending in rural areas in Northern Portugal. The author's finding was that age is a significant variable in tourism expenditure. From the research conducted by Mok and Iverson (2000:303) on Taiwanese spending in Guam, tourists were divided into three groups; light spenders, medium spenders and heavy spenders. The three groups were very similar with respect to socio-demographic variables. In all three groups, females formed the majority of the sample. The median income level for all three groups was over $17 527 per annum. All three groups work for salary (executive, professional, self-employed). Light and heavy spenders were aged 30-49 and married whereas medium spenders were aged between 18-29 and single. Research done by Hanly and Wade (2007:319) on North American tourists to Ireland indicates that the age of tourists and the exchange rate in the country of origin were found to be important variables in tourism expenditure. Davies and Mangan (1992:698) developed a model to investigate the effect of income on holiday expenditure, and found that income has a positive effect on tourism expenditure and the number of children has a negative effect.

Socio-demographic variables can be used to explain travel behaviour and there is a significant relationship between variables (Horneman *et al.*, 2002:22; Frew & Shaw, 1999:200).

Travel Behaviour

Travel behaviour can be defined in terms of the collective characteristics that define the nature and extent of a trip. Travel behaviour consists of variables such as: the distance travelled (Nicolau & Más, 2006:993; Witlox, 2007:183), number of previous visits (Wang, 2004:114), activity participation (Kim *et al.*, 2007:1370), value for money (Hutchinson *et al.,* 2009:306) mode of transport (Plog, 2002:246; Martin, 2007:745; Alegre & Pou, 2006:1343), purpose of visit (Awaritefe, 2004:324) family life cycle (Bronner & de Hoog, 2008:978) length of stay

(Alegre & Pou, 2006:1343; González & Bello, 2002:60; Liu, 1999:14) and trip information selection (Martin, 2007:743).

Tourists' expenditure at a destination is a combination of products (game hunted) and services purchased at the destination (taxidermy, hunting permits). The purchase of one item causes another to be purchased and these include booking accommodation, mode of transport, organising visits to main attractions (Kozak *et al.,* 1998:143-144; Fesenmaier & Jeng, 2000:22; Lim, 1997:842; Leeworthy *et al*., 2001:86; Mok & Iverson, 2000:301; Jang *et al.,* 2004a:334; Perez & Sampol, 2000:630) and purchasing of goods such as game hunted and souvenirs (Mok & Iverson*,* 2000:301; Spotts & Mahoney, 1991:25).

Segmenting hunters into different target markets can be done according to their spending levels at the hunting destination. A number of authors have classified the determinants of spending as: spending per person (Leeworthy *et al.*, 2001:86; Mok & Iverson, 2000:304; Mules, 1998;268; Agarwal & Yochum, 1999:175), daily spending per person (Perez & Sampol, 2000:628,635; Kastenholz, 2005:258; Mules, 1998:268; Pol *et al.*, 2006:43; Agarwal & Yochum, 1999:175) and total gross spending (Jang *et al.,* 2004a:338; Kastenholz, 2005:563; Spotts & Mahoney, 1991:31).

The amount of money that tourists are willing to spend when on holiday (hunting) is influenced by supply (amount of game available) and demand factors (what species the hunters want to hunt) (Kozak *et al.*, 1998:144; Perez & Sampol, 2000:635) and is interrelated with the length of stay (Alegre & Pou, 2006:1353; Jang *et al.*, 2004a:338; Kastenholz, 2005:563), group size and accommodation package (Kozak *et al.*, 1998 :144).

Individuals will have different behavioural patterns representative of their lifestyles. Categorisation of consumers is based on these differences between individuals (Pike, 2004:4). A variety of influences affect their travel behaviour (Lu & Pas, 1999:16). Behavioural indicators are also significant determinants in tourist spending. Behavioural patterns of hunters that will be significant to game farms owners include: number of hunters per group, number of hunting trips per annum, number of days spent hunting, members of a hunting association, dedicated hunter status, reason for hunting (biltong) and preferred province to hunt (Scholtz *et al.,* 2010:33; Van der Merwe *et al.,* 2007:188).

Further investigation reveals that other travel behaviour characteristics that also relate to tourism expenditure are: country of origin and favourable exchange rates (Lim, 1997:845; Kastenholz, 2005:559; Perez & Sampol, 2000:630; Beerli & Martin, 2004:635; Richards, 2002:1062) reason for travelling (Mok & Iverson, 2000:302; Jang *et al.,* 2004a:334), destination attributes and characteristics (Doniclair & Huybers, 2007:44; Murphy *et al.*, 2007:420; Campo & Garau, 2008:89; Nicolau & Más, 2006:984; Richards, 2002:1048) location of destination (Song *et al.*, 2000:613), mode of transport (Flogenfeldt, 1999:121; Richards, 2002:1062) relative prices, tourism prices and transport costs (Lim, 1997:845).

Many factors lead tourists to choose a destination and understanding these factors is fundamental in marketing a tourist destination (Lam & Hsu, 2006:589; Seddighi & Theocharous, 2002:475; Reynolds & Braithwaite, 2001:33). Today's consumers are becoming more and more sophisticated and knowledgeable due to technological advancement and global media that has changed the communication process radically. Game farm owners must be constantly aware of changes that will occur and should develop appropriate strategies that will respond to these changes.

The global tourism industry has become increasingly competitive and service delivery in the tourism industry has become a key role player in the success of any tourism related establishment. To have a competitive edge, the tourism industry should focus on the needs of travellers and the products they prefer (game they want to hunt) (Hui *et al.*, 2007:965). It is imperative for marketers to constantly change so as to enhance their competitiveness (Jonker *et al.*, 2004:1; Pike, 2004:73).

Marketing a tourist destination is a complex process which involves not only the attractions promoted, but the whole experience offered to the tourist (game that can be hunted). The tourism experience comprises several service providers (accommodation establishments, transport companies, product offering (different species and number of species available) food and beverage services, entertainment) working together to offer the tourist a memorable experience (Buhalis, 2000:113; Divisekera, 2003:36). Therefore the problem that arises is to determine the profile of hunters of the most popular hunting game species regarding income generating and biltong hunting.

4.3. Method of research

The data used for the analysis were gathered over a five-month period between October 2007 and February 2008. The methodology used will now be discussed under the following headings: (i) the questionnaire, (ii) the method and (iii) the statistical analysis.

4.3.1. 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.

4.3.2. Method

Quantitative research was conducted and a probability sampling method was used. The research population and the sample consisted of all the members of the three largest hunting associations in South Africa, the South African Hunters and Game Conservation Association (SAHGCA) (*N*=21 000), the Professional Hunters Association of South Africa (PHASA) (*N*=1 039) and the national Confederation of Hunting Associations of South Africa (CHASA) (*N*=18 000) (N = 40 000) a sample size of 676 was received back. The questionnaires were distributed as follows:

- Firstly, questionnaires were mailed to the members of the SA Hunters and Game Conservation Association along with their monthly magazine (*SA Hunters/SA Jagters*).
- Secondly, an interactive questionnaire was loaded onto the websites of SAHGCA, PHASA and CHASA during the months of September and October 2007.

In total, 676 (n) questionnaires were returned via email, fax and overland mail. Maree and Pietersen (2007:179) 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, 2007:179).

4.3.3. Statistical analysis

A statistical analysis was conducted using SAS System for windows (SAS Institute Inc., 2002-2005). Descriptive statistics were used to indicate the profile of hunters hunting the five most popular game species hunted and the five highest income generating species. The five most popular species hunted during 2009 was springbok, impala, blesbok, blue wildebeest and kudu. The top five species regarding income generated during 2009 are kudu, blue wildebeest, eland, impala and gemsbok (Scholtz *et al.,* 2010:17,18).

The results indicated that there is, for practical purposes, no difference in the socio-demographic profile of these hunters. The descriptive statistics provides simple summaries of the sample and the measures (Zikmund, 2003:402). Frequency distribution was used for categories such as marital status, education, occupation and income. Frequency distribution shows the number of times that a variable's different values (or categories) occur in a sample (Pietersen & Maree, 2007:184). The median was used to describe numerical data (e.g. age, number of times hunting and average length of stay). The median is the middle value in a data set and is a more accurate assessment of the locality of the data where outliers exert a strong influence on a measure like the mean (Pietersen & Maree, 2007:187).

4.3.4. Results

The results of the survey are discussed as follows; first a profile of hunters will be given regarding the five most preferred species hunted (Table 4.1) and, second to this, a profile of hunters pertaining to the top five income generating species. It is important to note that there are differences pertaining the top five preferred biltong hunting species and the top five species that generate the biggest income.

Table 4.1: Top income and most preferred biltong species

Top five income generating species	**Springbok** R358.97	**Blesbok** R798.09	**Impala** R609.92	**Kudu** R2235.02	**Blue wildebeest** R1840.32
Most preferred species for biltong hunting	**Gemsbok** R2335.76	**Blue Wildebeest** R1840.32	**Eland** R3339.77	**Kudu** R2235.02	**Impala** R798.09

Table 4.2: Demographics of hunters pertaining to the five most popular species hunted

Categories	Springbok	Blesbok	Impala	Kudu	Blue Wildebeest
Language	Afrikaans (82.48%)	Afrikaans (81.98%)	Afrikaans (79.25%)	Afrikaans (82.09%)	Afrikaans (79.92%)
Marital status	Married (88.18%)	Married (87.95%)	Married (88.22%)	Married (90.08%)	Married (87.01%)
Occupation	Self-employed (24.70%)	Self-employed (24.62%)	Self-employed (23.32%)	Self-employed (27.84%)	Self-employed (29.44%)
Average Age	48 years	49 years	49 years	49 years	49 years
Education	Diploma/ Degree (33.43%)	Diploma/ Degree (36.75%)	Diploma/ Degree (37.59%)	Diploma/ Degree (38%)	Diploma/ Degree (36.36%)
Province of origin	Gauteng (34.65%)	Gauteng (35.05%)	Gauteng (40.81%)	Gauteng (32.71%)	Gauteng (47.27%)
Annual income	R400 000	R400 000	R400 000	R400 000	R450 000
People in group	4 people	4 people	4 people	4 people	4 people
Length of stay	4 days	4 days	4 days	4 days	4 days
Times hunt	3 times	4 times	3 times	4 times	4 times
Preferred Province	Northern Cape (23.12%) Limpopo (21.02%)	Limpopo (20.36%) Northern Cape (16.17%)	Limpopo (40.05%) KwaZulu-Natal (16.71%)	Limpopo (33.87%) Eastern Cape (16.53%)	Limpopo (38.82%) North-West/KwaZulu-Natal (14.12%)

Hunters' demographics pertaining to the five most popular species hunted

The top five game species hunted by South African biltong hunters are springbok, blesbok, impala, kudu and blue wildebeest. For these five species, the profiles of hunters who hunt them were alike – Afrikaans-speaking, married, males average age 49 with diploma and self-employed with an average annual income of R400 000.00, hunt in groups of four people, stay for an average of four days and hunt three to four times a year. From a location point of view, the results of this research revealed that for the top five species, hunters in all cases originate from Gauteng. This correlates with research by Van der Merwe and Saayman, (2008:8) and Scholtz *et al.* (2010:7) which showed that the majority of hunters in South Africa are from Gauteng, which is also the economic hub of South Africa.

The preferred species are mainly hunted in two provinces, Limpopo (blesbok, impala, kudu & blue wildebeest) and the Northern Cape Province (springbok). Looking at Limpopo province, the following reasons can apply. Firstly, three of the five species, kudu, impala and blue

wildebeest are mainly found in this area due to the habitat (bushveld) of which impala as well as kudu are predominantly browsers. Second to this, 50% of all game farms are found in this province (Van Niekerk, 2006:51; Bothma, 2002:480; Van der Merwe & Saayman, 2003:104; Steenkamp *et al.*, 2005:27). Limpopo is the third largest province with an area of 125 755 km² and is a province of striking contrasts: heavily used land in the former homelands of Lebowa, Gazankulu and Venda are a sharp contrast to lightly-populated districts where almost all farm land is devoted to game farming or ecotourism (Brett, 2010:182). The biodiversity of this province also contributes to the ability to host a variety of species and therefore more species are more frequently available in the Limpopo province. It is, however, important to note that blesbok is also among the species hunted in Limpopo, although it is originally a species that is commonly found in the Free State due to its grasslands (blesbok are grazers) (Marchant, 2011; Estes, 1992:147).

The only exception for the most preferred species was for springbok which is predominantly hunted and found in the Northern Cape Province, Kalahari and Karoo regions. The arid Northern Cape occupies 30% of South Africa but supports less than 3% of the country's human population (Brett, 2010:62). The vegetation of approximately half of the province is defined as Nama Karoo, a vast, scrubland plateau fringed by mountain ranges. The internationally recognised biodiversity 'hotspot', the Succulent Karoo, extends in a broad corridor down the west coast (Mucina & Rutherford, 2006:32). Game farms in the Northern Cape extend over an estimated 4 852 053 hectares, covering a larger surface area than game farms in the rest of South Africa (Van der Merwe & Saayman, 2003:104).

Spending of hunters hunting the most popular game species

The key features of spending amongst respondents were identified as: accommodation, fuel, food, beverages, toiletries, ammunition, clothes, gear, butchery, meat processing and daily fees. The level of economic impact of hunters at a specific destination is related to the number of visitors and their level of expenditure. Hunters at a specific hunting destination originate from different provinces.

Table 4.3: Average expenditure (in Rands) per hunter pertaining to the most preferred game species hunted

	Springbok	Blesbok	Impala	Kudu	Blue Wildebeest
Average price per species	R300.00	R650.00	R650.00	R2 500.00	R2 200.00
Accommodation	R1 500.00	R1 200.00	R1 600.00	R1 500.00	R2 000.00
Fuel	R1 800.00	R1 500.00	R1 300.00	R1 500.00	R1 500.00
Food	R800.00	R600.00	R900.00	R900.00	R1 000.00
Beverages	R400.00	R300.00	R400.00	R400.00	R500.00
Toiletries	R50.00	R50.00	R50.00	R50.00	R100.00
Ammunition	R500.00	R445.00	R500.00	R400.00	R500.00
Clothes	R200.00	R150.00	R200.00	R200.00	R200.00
Gear	R200.00	R100.00	R200.00	R200.00	R200.00
Butchery	R50.00	R0.00	R0.00	R0.00	R100.00
Meat Process	R500.00	R400.00	R500.00	R500.00	R500.00
Daily Fees	R120.00	R90.00	R50.00	R50.00	R0.00
Total expenses	R8 687.50	R7 225.00	R8 500.00	R8 547.50	R10 000.00

Total estimated expenditure of these hunters is detailed in Table 4.3. Average expenditure consists of money spent on accommodation, fuel, alcohol and beverages, tobacco products, medicine, toiletries, ammunition, clothing, hunting gear excluding ammunition, butchery facilities, meat processing, daily fees and other expenditure. There is no statistical difference in the table above. This research is looking at “opportunistic hunters” who would hunt even more expensive species such as tsessebe and sable for biltong (as people did in the past) if they were common enough. From the results it is clear that most money is spent on accommodation and fuel. Blue Wildebeest hunters account for the highest average expenditure therefore making blue wildebeest a profitable species to have on game farms.

Table 4.4: Demographics of hunters pertaining highest income generating species

	Gemsbok	Blue Wildebeest	Eland	Kudu	Impala
Language	Afrikaans (86.15%)	Afrikaans (79.92%)	Afrikaans (81.91%)	Afrikaans (82.09%)	Afrikaans (79.25%)
Marital	Married (89.74%)	Married (87.01%)	Married (93.62%)	Married (90.08%)	Married (88.22%)

status					
Occupation	Self-employed (29.47%)	Self-employed (29.44%)	Self-employed (24.70%)	Self-employed (27.84%)	Self-employed (23.32%)
Average Age	48 years	49 years	46.50 years	49 years	49 years
Education	Diploma/Degree (36.41%)	Diploma/Degree (36.36%)	Diploma/Degree (31.52%)	Diploma/Degree (38%)	Diploma/Degree (37.59%)
Province of origin	Gauteng (35.75%)	Gauteng (47.27%)	Gauteng (37.63%)	Gauteng (32.71%)	Gauteng (40.81%)
Annual income	R445 000.00	R450 00.00	R400 000.00	R400 000.00	R400 000.00
People in group	4 people	4 people	4 people	4 people	4 people
Length of stay	4 days	4 days	4 days	4 days	4 days
Times hunt	4 times	4 times	4 times	4 times	3 times
Preferred province	Limpopo (35.75%) North-West (23.35%)	Limpopo (38.82%) North-West/KwaZulu-Natal (14.12%)	Limpopo (39.36%) KwaZulu-Natal/North Cape (14.89%)	Limpopo (33.87) Eastern Cape (16.53%)	Limpopo (40.05%) KwaZulu-Natal (16.71%)

***Hunters profile* pertaining to the five highest income generating species**

The top five income generating species for biltong hunting in South Africa are gemsbok (oryx), blue wildebeest, eland, kudu and impala. For all five species the profile of hunters remains similar. Afrikaans-speaking married males, average age between 46 - 49, well educated with either a diploma or degree and are self-employed. Hunters hunting gemsbok and blue wildebeest had a slightly higher income than eland, kudu and impala hunters. Hunters hunt in groups of four people, stay for an average of four days and hunt three to four times a year. From a location point of view it is important to identify the origin of these hunters. The results of this research revealed that most hunters originate from Gauteng and the preferred province for hunting is Limpopo province, which was also the case with preferred species. It is interesting to note that gemsbok, which is traditionally found in the Kalahari region of the Northern Cape, also sorted under the Limpopo Province (Skinner & Chimimba, 2005:667; Anderson, Carr, Hall-Martin, Joubert, Keep, Lloyd & Vrahimis, 1989:58).

Table 4.5: Total average expenditure (in Rands) per hunter according to highest income generating species

	Gemsbok	Blue Wildebeest	Eland	Kudu	Impala
Average price per species	R2 250.00	R2 200.00	R4 500.00	R2 500.00	R650.00
Accommodation	R1 500.00	R2 000.00	R1 500.00	R1 500.00	R1 600.00
Fuel	R2 000.00	R1 500.00	R2 000.00	R1 500.00	R1 300.00
Food	R1 000.00	R1 000.00	R1 000.00	R900.00	R900.00
Beverages	R500.00	R500.00	R500.00	R400.00	R400.00
Toiletries	R50.00	R100.00	R100.00	R50.00	R50.00
Ammunition	R500.00	R500.00	R500.00	R400.00	R500.00
Clothes	R250.00	R200.00	R300.00	R200.00	R200.00
Gear	R200.00	R200.00	R300.00	R200.00	R200.00
Butchery	R100.00	R100.00	R75.00	R0.00	R0.00
Meat Process	R500.00	R500.00	R400.00	R500.00	R500.00
Daily Fees	R10.00	R0.00	R0.00	R50.00	R50.00
Total expenses	R9 300.00	R10 000.00	R9 200.00	R8 547.50	R8 500.00

The level of economic impact of tourists at a specific destination is related to the number of visitors and their level of expenditure. Hunters at a specific hunting destination originate from different provinces. Total estimated expenditure of these hunters is detailed in Table 4.5. Average expenditure consists of money spent on accommodation, fuel, alcohol and beverages, tobacco products, medicine, toiletries, ammunition, clothing, hunting gear excluding ammunition, butchery facilities, meat processing, daily fees and other expenditure. From the results it is clear that most money is spent on accommodation and fuel. Blue Wildebeest hunters account for the highest average expenditure.

4.4. Findings and implications

Firstly, it is found by the research that gemsbok (oryx), blue wildebeest and eland are the species that generate the most income, because these species are larger (Brett, 2005:32; Walker, 1996:178,172,200) cost more and favoured by biltong hunters (Scholtz *et al.,* 2010:18; Radder *et al.,* 2000:25; Eloff, 2002:19,21; Flack, 2010:191). The implication for game farm

owners is that these species need to be part of their species on offer, which will assist game farm owners to generate more income where applicable.

Secondly, statistically there is little difference between the profile of hunters of preferred *species* and of *highest income generating species*. The profile of both categories is as follows: Afrikaans-speaking married males, with an average age of 49 years. These hunters have a diploma or degree and are self-employed. They reside in Gauteng and hunt in Limpopo province. Hunting is a social and cultural activity with most hunters hunting in groups of three or four people (Van der Merwe *et al.,* 2007:189; Van der Merwe & Saayman, 2003:110; Eloff, 1999:23; Radder *et al.,* 2000:27; Radder & Bech-Larsen, 2008:260). The implications of the finding are therefore that game farm owners and potential owners can use this profile to develop better hunting products to suit the profile of hunters.

Thirdly, results of this research revealed that, in both situations, most hunters originate from Gauteng (Van der Merwe, & Saayman, 2008:8; Scholz *et al.,* 2010:7). This may be attributed to Gauteng being the province with the highest income levels in South Africa (Saayman & Saayman, 2006b:578). Therefore the implication is that marketers should focus their attention on attracting more hunters by directing advertising material to the Gauteng region.

Fourthly the preferred province of hunting for the most preferred species for biltong hunters and income generating species is the Limpopo province (Van der Merwe *et al.*, 2007:188; Van der Merwe & Saayman, 2008:15; Scholtz *et al.,* 2010:13). The implication from a development point of view is that this is the ideal province for establishing a game farm. From an economic point of view, the Limpopo province is also the most lucrative area to develop a game farm as it is closely situated to Gauteng province which hosts the most hunters (Van der Merwe & Saayman, 2008:8; Scholz *et al.,* 2010:7).

Fifthly, the expenditure of blesbok hunters is lower than the rest (Table 4.2). This might be because blesbok are found in Gauteng and almost everywhere except for the Western Cape (Stuart & Stuart, 2007:230). Blesbok are used as common species on all the private game reserves in the Eastern Cape to protect the more expensive antelope from lion predation (Hayward, O'Brien & Kerley, 2007:227). Therefore the implication is that game farm owners should put the emphasis on species other than blesbok when advertising their product so as to gain higher revenue from species hunted.

Lastly the only species that is not hunted within the Limpopo province but in the Northern Cape is springbok. The implication therefore is that game farms in the Northern Cape can market it is a species that is preferentially hunted in this province. From an economic point of view, it would make little sense to host this species in the Limpopo province as hunters will prefer to hunt it in the Northern Cape.

4.5. Conclusion

The aim of this chapter was to determine the popular game species hunted for biltong purposes in South Africa. Descriptive statistics were used to indicate the profile of hunters hunting the five most popular game species and the five highest income generating species. The main findings of this research indicated that common game species such as springbok, blesbok, impala and kudu are the most hunted for biltong.

Gemsbok (oryx) and blue wildebeest appeal to biltong hunters with a higher income. This would be expected because these species are larger and cost more than species such as impala and springbok (Vleissentraal, 2011). With the growth in the game industry, gemsbok that was traditionally hunted in the Northern Cape have been extensively reintroduced to game farms in the more arid savannas of Limpopo, and protected areas such as Pilanesberg, and surplus animals have been obtained from the Northern Cape and Namibia (Skinner & Chimimba, 2005:667; Anderson *et al.*, 1989:58).

Game has an economic value and is therefore worth conserving on a game farm. The economic value also means that farmers now restock their land with game. Biltong hunters are not just following a hobby but are making economic decisions. This can partly be seen in the distances travelled. Biltong hunters are weighing up the costs of the experience against the benefits. Price is very important to these hunters. This can be seen in the fact that common species are mostly hunted in each province and this varies from province to province. In Limpopo and KwaZulu-Natal impala are the most common species while in the Northern Cape, springbok is the most common. It can be argued that biltong hunters definitely enjoy the overall experience but that many would simply buy biltong at the local butchery if the cost benefit equation was drastically altered (Eloff, 2002:19).

This research contributes to the game farm industry in that it determines which species generate the greatest income for game farms. Understanding which species generate the greatest income and are more popular than others for hunters will enable game farmers to host these species and, as a result meet the needs and expectations of hunters, thereby generating more revenue (Eloff, 1999:22, Radder, 2001:176; ABSA, 2003:17).

Chapter 5

Conclusions and recommendations

5.1. Introduction

The aim of this chapter is to draw conclusions and make recommendations based on the study. The primary objective of this study was to develop a spending model for biltong hunters for game farm owners to gain maximum economic benefit from hunters. To achieve the primary objective of the study the following secondary objectives were set for the research:

Objective 1: To conduct a literature analysis of the relationship between socio-demographics, tourist behaviour and tourist spending

This objective was achieved in Chapter 2, Article 1: *Socio-demographic aspects and travel behaviour*. This objective was achieved by discussing the wildlife tourism industry in South Africa and the role of game farms and biltong hunting with regards to this industry (c.f. 2.2). The relationship between tourist socio-demographic characteristics and travel behaviour were discussed and the role played by these variables in tourism expenditure and market segmentation. A comparison of literature on tourism studies pertaining to socio-demographic and travel behaviour variables were made (c.f. 2.2). A regression analysis was conducted to estimate the determinants of the spending of biltong hunters (c.f. 2.4.2). Thereafter a profile of a biltong hunter was presented (c.f. 2.4.1).

Objective 2: To conduct a literature analysis of game farms, geographic locations and spending

This objective was achieved in Chapter 3, Article 2: *Geographical analysis and spending of hunters on game farms.* It was done by examining literature on tourism geography and the influence that location and destination attributes have on tourist destination choice (c.f. 3.2). A comparison was drawn on literature regarding destination attributes that influence tourist decision to visit wildlife tourism areas (c.f. 3.2). A review of current literature on determinants that influence hunters' visits to game farms was undertaken. Descriptive statistics were used to indicate the five most popular provinces to hunt as well as the five provinces of hunters' origin (c.f. 3.3.3). Secondly a linear regression analysis was undertaken using the five provinces of

hunters' origin to identify the variables that influence biltong hunter's expenditure. A regression analysis was carried out to determine the variables that influence biltong hunters' expenditure (c.f. 3.3.3).

Objective 3: To determine the relationship between species hunted for biltong and spending

This objective was achieved in Chapter 4, Article 3: *The relationship between popular species and spending.* This was done by examining the determinants of spending by biltong hunters (c.f. 4.2). These determinants were identified as: socio-demographic variables, travel behaviour and game species (c.f. 4.2). The literature also reflects on annual game auction prices over the past ten years (c.f. 4.2). Descriptive statistics were used to indicate the profile of hunters hunting the five most popular game species hunted and the five highest income generating species (c.f. 4.4.2).

Objective 4: To draw conclusions and make recommendations regarding the research results

The final objective is achieved in Chapter 5. In this chapter the main conclusions from the literature (c.f. 5.2.1) and conclusions from the empirical results (c.f. 5.2.2) are drawn. A spending model for biltong hunters is also developed in this chapter (c.f. 5.2.2). Recommendations from this study (c.f. 5.3.1) and recommendations for further research (c.f. 5.3.2) are made.

5.2. Contribution of the research

The study made the following contribution to the field of hunting research:

- This study is the first to suggest a spending model for biltong hunters in South Africa.
- It increases the understanding of the socio-demographic and travel behaviour attributes of biltong hunters.
- It determines which species generate the greatest income for game farms. Understanding which species generate the greatest income and are more popular than others for hunters will enable game farmers to host these species and, as a result meet the needs and expectations of hunters, thereby generating more revenue

- As proof of the above a first article was published in Acta Academica, 42(3):61-85 under the following title: Socio-demographic profile and travel behaviour of biltong hunters in South Africa.
- Different methodology used on the same data set, impacts on the outcome of results.

5.3. Conclusions

The problem that was addressed in this study is to develop a spending model for biltong hunters since no spending model exists regarding biltong hunters.

In general one can conclude that, from the early 1990s the game farm industry experienced an enormous growth as a result of hunting. Hunting contributes to local economies in South Africa as well as to the national economy and has led to the creation of opportunities for rural development and growth. Hunting can be used as a tool to stimulate economic growth and improve the standard of living of local communities in rural areas. One of the added values from hunting is the conservation of South Africa's wildlife as hunting has led to an increase in the number of endangered and other game species, the number of game farms/private reserves and the sustainable development of consumptive usage of wildlife.

The following stakeholders in the South African hunting industry have been identified: hunters (biltong and trophy), game farmers, land owners, ecotourism enterprises and conservation agencies (Damm, 2005:19). These stakeholders play an important role regarding the well being of the local community, and sustainable development of wildlife activity. They are also responsible for analysing hunting expenditure and finding ways to increase hunting profitability. Collaboration between government, the private sector, visitors and local people must be encouraged.

The conclusions of this study will be structured as follows:

Firstly conclusions will be drawn from the literature study, and secondly, conclusions will be presented concerning the methodology and results.

5.3.1. Conclusions from the literature studied

- Wildlife tourism or nature-based extractive tourism (hunting) is a significant market segment in the rapidly growing tourism industry of South Africa (c.f. 1.2, 2.2).
- Hunting can be seen a cultural and economic activity (c.f. 2.2).
- Hunting is identified as one of the major income streams within the wildlife industry (c.f. 4.2).
- High spenders need to be identified by game farm owners to increase the economic impact on game farms (c.f. 2.2).
- Tourism can stimulate economic growth and improve the standard of living in local economies (c.f. 2.2).
- Satisfaction of hunters' needs is necessary for the continuous growth and financial viability of game farms (c.f. 2.2).
- Game farm owners need to investigate the key factors influencing hunters' destination choice to develop more lucrative hunting destinations (c.f. 3.2).
- The choice of a hunting destination is affected by different variables such as: distance travelled, infrastructure, cost of travel, quality and variety of game species, scenic beauty and being close to nature (c.f. 3.2; 4.2).
- The size and variety of a tourism event matter (c.f. 3.5).

Marketing

- Market segmentation of tourists is conducted on the basis of socio-demographic information (age, language, gender) and travel behaviour (length of stay, group size, number of trips) (c.f. 4.2).
- In market segmentation for hunters there is a third variable that makes it different to other tourism products - game species available for hunting (c.f. 4.2).
- 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 (c.f. 2.2, c.f. 4.2).
- Marketers must seek to understand visiting patterns of tourists as this will provide insight into travel behaviour (c.f. 2.2).
- Forecasting hunting demand at a specific destination has become one of the most critical elements for hunting industry marketers and planners (c.f. 4.2).

- Segmenting hunters into different target markets can be done according to their spending levels at the hunting destination (c.f. 4.2).
- To have a competitive edge the tourism industry should focus on the needs of travellers and the products they prefer (game they want to hunt) (c.f. 4.2).
- The tourism experience comprises several service providers (accommodation establishments, transport companies, product offering (different species and number of species available) food and beverage services, entertainment) working together to offer the tourist a memorable experience (c.f. 4.2).
- Satisfaction of hunters' needs is important for continuous growth and financial viability (c.f. 2.2).

Travel behaviour

- Hunters' behaviour is influenced by various aspects such as: cultural differences, personal factors, psychological factors and previous experience (c.f. 2.2).
- Travel behaviour consists of inclusive variables such as: the distance travelled, number of previous visits, activity participation, value for money, mode of transport, purpose of visit, family life cycle, length of stay and trip information selection (c.f. 4.2).
- Behavioural patterns of hunters that will be significant to game farm owners includes: number of hunters per group, number of hunting trips per annum, number of days spend on hunting, members of a hunting association, dedicated hunter status, reason for hunting (biltong) and preferred province to hunt (c.f. 4.2).
- Travel behaviour characteristics that also relate to tourism expenditure are: Country of origin and favourable exchange rates, reason for travelling, destination attributes and characteristics, location of destination, mode of transport, relative prices, tourism prices and transportation costs (c.f. 4.2).

Socio-demographic characteristics

- An understanding of the socio-demographic characteristics of the target market (hunters) will provide marketers (game farm owners; hunting outfitters) insight to tourist (hunters) motivations and travel behaviour which can assist in marketing the product (c.f. 2.2, c.f. 4.2).
- Socio-demographics exert a definite impact on travel behaviour and also influence tourist's expenditure level (c.f. 2.2).

- Expenditure of biltong hunters is influenced by variables such as socio-demographic characteristics and travel behaviour (c.f. 4.2).
- Previous research indicates income, education, occupation, age, marital status, group size, activities and duration of trip as significant role players in tourist expenditure (c.f. 4.2).
- The socio-demographic and travel behaviour variables that feature most strongly in this literature review are: age, education, gender, income, occupation, travel motivation, length of stay, number of previous visits and place of residence of tourists (c.f. 2.2).

Travel Motivation

- Understanding why people travel and what influences their choice of a specific destination can lead to higher level of customer satisfaction (c.f. 1.2).
- Product owners should focus on the travel motivations of tourists and their association with trip expenditure to maximise economic benefit (c.f. 1.2).
- Product owners need to determine which travel motivation characteristics have an influence on tourism expenditure (c.f. 1.2).
- Previous research found that travel motivations positively linked to expenditure are: history and culture, a variety of recreational activities at destination, seasonality, size of island destination, business travel, travel mainly for shopping purposes (c.f. 1.2).

Economic impact of hunting

- Hunters make a significant contribution to the economy of South Africa and it is therefore important to investigate the key factors influencing hunters' choice of a destination. This will assist product owners in developing even more lucrative hunting destinations (c.f. 3.2).
- The numbers of tourist arrivals in an area, and the level of spending at a destination, are closely related to the prosperity of a specific tourism sector (c.f. 3.2).
- Increasing hunter numbers will result in a higher income for the game farms (c.f. 4.2).
- Tourists expenditure at a destination is a combination of products (game hunted) and services (taxidermy, hunting permits) purchased at the destination (c.f. 4.2).
- The determinants of spending can be classified as: spending per person, daily spending per person and total gross spending (c.f. 4.2).

- The amount of money that tourists are willing to spend when on holiday (hunting) is influenced by supply (number of game available) and demand factors (what species hunters want to hunt) (c.f. 4.2).

Geographic variables

- Destination attributes that influence hunter's destination choice are: distance travelled, infrastructure, cost of travel, quality and variety of game species, scenic beauty, and being close to nature (c.f. 3.2).
- Geography of hunting tourism is particularly sensitive to the social, mental and psychological perceptions of hunters and hunters encounter and experience hunting destinations in different ways (c.f. 3.2).
- Geographic research helps to enhance knowledge about destination attributes and what influences tourists' (or hunters') preferences for certain destinations (c.f. 3.2).
- Geographic locality is a powerful segmentation variable utilised by marketers (c.f. 3.2).
- It is important for game farm owners to understand what influences hunters' decisions in selecting a hunting destination/product so that they may attract more hunters (c.f. 3.2).
- The physical location of a game farm plays an important role in determining the value of the product on offer and also determines the amount that hunters are willing to pay (c.f. 3.2).
- The distance of game farms to major population centres, such as Gauteng makes it possible for the industry to sustain itself because of access and the high disposable income of tourists from these areas (c.f. 3.2).
- Distance from home has a definite effect on destination choice and depends on the travel motivations of tourists (c.f. 3.2).
- Hunters in general are prepared to travel a maximum of four hours to their hunting destination (c.f. 3.2). The hunting industry results from a clustering of various factors within a specific geographic area and hunters may desire particular experiences from the destination area (c.f. 3.2).

Game Species

- Hunters are being pushed into making travel decisions by internal factors such as variety of species and cost of visit (c.f. 4.2).
- Product offering at a destination, in this case game, has a positive impact on tourist expenditure (c.f. 4.2).

- The single biggest income generators on game farms are the game hunted and sold at auctions (c.f. 4.2).
- Species such as eland, red hartebeest, kudu, blue wildebeest, impala, gemsbok, springbok and warthog, are popular for biltong hunting (c.f. 4.2).
- Game farm owners need to determine the most profitable game species and market segments of biltong hunters in order to increase their income (c.f. 4.2).
- The distinctive characteristics of the specific area contribute to the hunting experience. These are characteristics such as natural vegetation, climate and game species (c.f. 3.2).
- The availability of a variety of game species is of economic advantage to game farm owners (c.f. 3.2).
- Popular hunting provinces such as Northern Cape, Limpopo, North-West and KwaZulu-Natal differ in terms of natural habitats and species available to hunters (c.f. 3.2).

5.3.2. Conclusions regarding methodology and results

The following conclusions can be made regarding the empirical results:

It is important to note that the use of different aspects of data as well as different statistical analyses led to different outcomes in the study. For example: Article 1, a regression analysis was conducted using SPSS 16 (using the whole sample pertaining the nine provinces in South Africa); Article 2, firstly, a statistical analysis was conducted using SAS System for windows (SAS) and secondly, a linear regression analysis using the five most important provinces from where hunters' originate (Gauteng, KwaZulu-Natal, Free State, North-West and Western Cape); Article 3, descriptive statistics were used to indicate the profile of hunters hunting the five most popular game species hunted (springbok, impala, blesbok, blue wildebeest & kudu) and the five highest income generating species (kudu, blue wildebeest, eland, impala and gemsbok).

From the statistical analysis and sections of data used in this thesis different outcomes were obtained. With regards to this study the following discrepancies in results were detected:

- Article 1: Professional and occasional hunters spend more than dedicated hunters
- Article 2: Dedicated hunters spend more

- Article 1: Married hunters spend more
- Article 2: Unmarried hunters spend more

- Article 1: There is a positive correlation with spending and hunters residing in Gauteng, Free State, North-West and Western Cape.
- Article 2: Hunters residing in Gauteng, North-West, Northern Cape spend less.

From a methodological point of view using only a selected number of variables or selected sections of the data could have contradicting conclusions. Therefore caution should be used when statistical analyses are conducted.

5.3.2.1. Article 1: Socio-demographic aspects and travel behaviour

- Socio-demographic variables and travel behaviour have an influence on tourist spending (c.f. 1.2, 2.5).
- This research reveals that biltong hunting appeals primarily to a niche market, namely Afrikaans, married males (c.f. 2.5; 3.4.1).
- The profile of the typical biltong hunter in South Africa is given as married (89.8%) male (98.8%), Afrikaans speaking (78.4%), and between the ages of 40-65 (64%). In total, 37.1% have a diploma or degree, 23.3% and self-employed (c.f. 2.4.1).
- On average hunters earn R514 929.42 per annum, their total spending per hunting season, excluding game is R9081.45; total spending during hunting season on game is R10385.74 and total spending during the hunting season R19467.18 (c.f. 2.4.1).
- The provinces that produced the greatest number of hunters were Gauteng (33.7%), KwaZulu-Natal (13.9%) and the Free State (12.2%) (c.f. 2.4.1).
- Hunters residing in Gauteng, North-West and Northern Cape spend less than hunters residing in Eastern Cape, Free State, Mpumalanga, KwaZulu-Natal and Limpopo (c.f. 2.4.2).
- The behavioural indicators that significantly influence spending of hunters are: the number of times hunting per year as well as the average days spent hunting (c.f. 2.4.2, 2.5).
- Language has an influence on tourist expenditure (c.f. 2.5).
- Married hunters on average spend more than unmarried hunters (c.f. 2.5).
- Hunters with post- matric qualifications (degree and post-graduate) spend less than hunters with only matric (c.f. 2.5).

- Hunters residing further from the hunting destination spend less at the hunting destination (c.f. 2.5).
- The occupation of hunters plays an underlying role in total expenditure of hunters (c.f. 2.5).
- The results specify that income is a significant socio-demographic indicator in distinguishing low spenders from high spenders (c.f. 2.5).
- Professional and occasional hunters spend more than dedicated hunters (c.f. 2.5).

5.3.2.2. Article 2: Geographic analysis and spending of hunters on game farms

- From the results it is clear that location of game farms does matter (c.f. 3.5).
- Limpopo, Northern Cape, Eastern Cape, North-West and KwaZulu-Natal are the most preferred hunting provinces in South Africa (c.f. 3.3.3).
- Five provinces of origin of hunters were determined as: Gauteng, KwaZulu-Natal, Free State, North-West and Western Cape (c.f. 3.4).
- It is necessary for game farm owners to identify the origin of hunters as well as preferred hunting destinations to assist them in identifying the correct market as well as where to do possible game farm developments (c.f. 3.4).
- It will also assist them in targeting the most lucrative hunting markets. (c.f. 3.4).
- Hunters prefer to hunt in groups and by means of walk and stalk (c.f. 3.4.1).
- Hunters prefer to hunt in their province of residence and in neighbouring provinces within a travel distance of four hours (c.f. 3.4.2, 3.5).
- The research revealed that variables that are positively linked to spending are: age, number of times hunting, length of stay, marital status of hunter, hunters residing in KwaZulu-Natal, income of hunter and dedicated hunter status (c.f. 3.4.3, 3.5).
- The variety of species (which is influenced by the biome) and number of game farms play a major role in contributing to the hunting experience (c.f. 3.5).
- The majority of hunters from this sample originate from Gauteng. Gauteng is also the province with the highest per capita income in South Africa (c.f. 3.5).
- Hunters from Gauteng and KwaZulu-Natal record a higher hunting frequency per hunting season than the remaining three provinces (four times during a hunting season versus three times for the other provinces) (c.f. 3.5).
- Limpopo is the most popular province in which to hunt. Approximately half (46.8%) of the game farms in South Africa are located in Limpopo (c.f. 3.5).

- The determinant with the strongest correlation is the income of the hunter (c.f.3.5.).

5.3.2.3. Article 3: The relationship between popular species and spending

- Gemsbok (oryx), blue wildebeest and eland are the species that generate the most income (c.f. 4.4).
- Statistically there is little difference between the profile of hunters of preferred species and highest income generating species (c.f. 4.4).
- The profile of both categories is as follows: Afrikaans speaking married males, with an average age of 49 years, diploma or degree and self-employed. They reside in Gauteng and hunt in Limpopo province. They hunt in groups of three or four people (c.f. 4.4).
- The results of this research revealed that in both situations, most hunters originate from Gauteng (c.f. 4.4).

  The preferred province of hunting regarding the most preferred species for biltong hunters and income generating species, is the Limpopo province (c.f. 4.4).
- The expenditure of blesbok hunters is lower than the rest.
- The only specie that is not hunted within the Limpopo, but is hunted in the Northern Cape is springbok (c.f. 4.4).

5.4. Recommendations

Recommendations are divided into three sections which will be discussed below.

5.4.1. Spending model for biltong hunters

Based on the stated objective the following spending model for biltong hunters was developed.

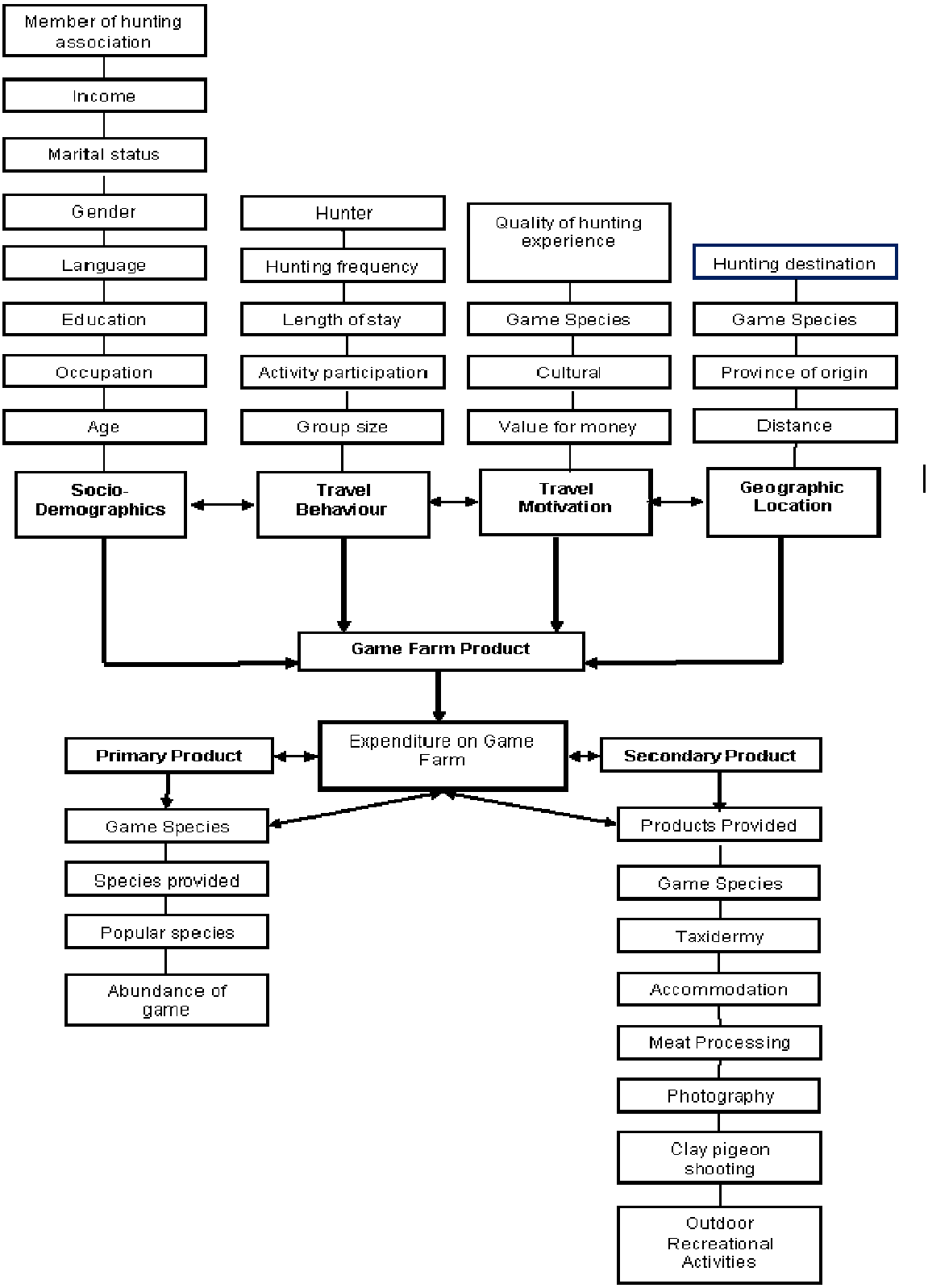


Figure 5.1: Spending model for biltong hunters

From Figure 5.1, spending model for biltong hunters, the variables that influence hunters' visits as well as expenditure on a game farm are clearly identified: socio-demographic variables, travel behaviour, travel motivation and geographic location. The expenditure on a game farm can be further increased by increasing the length of stay, increasing the number of hunting trips per year, encouraging hunters to hunt in groups, offering of a variety of game species as well as an abundance of game. Game farm owners can also offer additional products/activities such as clay pigeon shooting, taxidermy services, meat processing services, 4x4 trails and photography services. The geographic location of a game farm influences hunters' expenditure; most hunters prefer to travel no more than four hours to their hunting destination. Game species are also an important determinant in hunters' destination choice. Hunters might select a specific region due to the specie found in that specific area. Game farms located in different provinces might stock different species due to the type of biodiversity in which the farm is situated and the game species that are commonly found in that area. Understanding this travel market and the variables that generate the highest income is important for present and future game farm owners. This will enable game farmers to meet the needs and expectations of hunters and can therefore generate more revenue for game farms

5.4.2. Recommendations from this study

- Game farm and hunting operators marketing efforts should be focused on advertising mediums popular to the English-speaking market (Higher spenders) (c.f. 2.5).
- Game farm owners must adjust their marketing strategies to target the family market (married couples) as a niche market since the majority of hunters are married (c.f. 2.5).
- Game farm owners need to develop their products to suit the family market as well as making necessary changes to facilities to accommodate families (c.f. 2.5).
- Game farm owners must advertise hunting packages in close proximity of their product (c.f. 2.5).
- Marketing strategies must focus on high income groups (c.f. 2.5).
- Game farm owners must develop hunting packages that motivate hunters to stay longer at the hunting destination (c.f. 2.5).
- Hunting packages should make provision for hunters to engage in other activities such as 4x4 routes, hiking trails, women's adventure activities and hunting packages that include a number of species over a time span of seven to ten days. Through product diversification game farm owners could succeed in retaining hunters for additional days (c.f. 2.5, 3.5).

- Game farm owners must also market hunting packages where hunters are rewarded if they come and hunt for a second time in the same year (c.f. 2.5, 3.5).
- Game farm owners need to market their product in adjacent provinces to increase spending (c.f.3.5).
- Marketing material should emphasise species that are mainly found in a specific region (c.f. 3.5).
- Game farm owners should focus their marketing efforts on attracting hunters from Gauteng (c.f. 3.5).
- Hunters residing in Gauteng and KwaZulu-Natal had a higher hunting frequency per season, game farm owners should therefore invest in attracting these hunters (c.f. 3.5).
- Monthly newsletters with regular updates on species on offer as well as promotions can be distributed to regular hunters (c.f. 3.5).
- Limpopo province is also the most lucrative area to develop a game farm as it is situated close to Gauteng province which hosts the most hunters (c.f. 3.5, 4.4).
- A factor that can contribute to increased income for the game farm owner is the availability to hunters of more expensive and rare antelope species (c.f.3.5).
- The market segment that accounts for the highest expenditure is defined as young, unmarried, high income men. This segment should be specifically targeted by game farm owners by advertising in niche publications such as Men's Health and Sports Illustrated (c.f. 3.5).
- Hunting packages and special offers could be mailed to the members of the SA Hunters and Game Conservation Association together with their monthly magazine (*SA Hunters/SA Jagters*) (c.f. 3.5).
- Advertisements can also be loaded on to the websites of SAHGCA, PHASA and CHASA (c.f. 3.5).
- Game species such as gemsbok (oryx), blue wildebeest and eland need to be part of the species on offer on a game farm to generate more income (c.f. 4.4).
- The majority of biltong hunters can be classified as: Afrikaans speaking married males, with an average age of 49 years, with a diploma or degree and are self-employed. They reside in Gauteng and hunt in Limpopo province. They hunt in groups of three or four people. Game farm owners and potential owners can use this profile to develop better hunting products to suit the profile of hunters (c.f. 4.4).

- Marketers should focus their attention on attracting more hunters by directing advertising material to Gauteng region (c.f. 4.4).
- Game farm owners should put the emphasis on species other than blesbok when advertising their product in order to gain higher revenue from species hunted (c.f. 4.4).
- Springbok is the only specie hunted not within the Limpopo province but in the Northern Cape. Game farms in the Northern Cape can market it is a specie that is preferably hunted in this province (c.f. 4.4).

5.4.3. Recommendations for further studies

The following recommendations are made regarding further research:

- Future research needs to determine the travel motives of biltong hunters. By determining the travel motives game farm owners will be able to satisfy hunters' needs at hunting destinations. It will also assist people in the hunting fraternity to develop better marketing material and products, which can lead to an increase of spending of hunters at hunting destinations.
- The continued conversion of cattle farms to game farms, and robust demand from biltong hunters, has continued to drive the supply of live game. As biltong hunting by definition involves the production of a consumable product, and as the industry has a prolific and relatively cheap competitor in the form of beef biltong, further research is needed into the price relationship between cattle and live game. Has the price of live game tracked the price of cattle? What is the price relationship between beef biltong and game biltong?
- Research could also examine the extent to which the demand for biltong hunting is the primary economic driver behind game auction prices. Further study of regional variations in prices asked by game farmers for game hunted on their properties would also cast further light on the relative importance or unimportance of distance from home, and the market's resilience to travel costs.

Appendices

Appendix 1:

Questionnaire

NASIONALE PROFIEL VAN BILTONGJAGTERS 2007
NATIONAL PROFILE OF BILTONG HUNTERS 2007

Navorsing onderneem deur die instituut vir Wildlewe-Ekonomie, Toerisme en Vryetydstudies in samewerking met belanghebendes in die jag- en wildbedryf / Research conducted by the Institute for Wildlife Economics, Tourism and Leisure Studies in co-operation with interested parties in the hunting and game industry.
Vraelys kan aangevra en terugbesorg word met behulp van e-pos, faks of pos. / Questionnaires can be requested and returned by means of e-mail, fax or mail.

E-pos / E-mail: mariza.richards@nwu.ac.za
Faks / Fax: 018 299 4140
Pos / Mail: Institute for Wildlife-Economics, Toursim and Leisure Studies
Private Bag X6001
North-West University
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AFDELING A : SOSIO-DEMOGRAFIESE GEGEWENS / SECTION A : SOCIO-DEMOGRAPHIC DETAILS				
1. Geslag / Gender?	Manlik / Male : 1 Vroulik / Female : 2			
2. Huistaal / Home Language?	Afrikaans			1
	English			2
	Ander / Other			3
3. Ouderdom / Age?				
4. Huwelikstatus / Marital Status	Getroud / Married			1
	Ongetroud / Unmarried			2
	Geskei / Divorced			3
	Weduwee/naar / Widow/er			4
	Woon saam / Living together			5
5. Dui u hoogste kwalifikasie aan /	Geen skool opleiding / No School			1

Please indicate your highest level of education	Matriek / Matric			2
	Diploma, Graad / Diploma, Degree			3
	Nagraads / Post-Graduate			4
	Professioneel / Professional			5
	Ander / Other			6
	(Spesifiseer / Specify)			
6. Watter tydskrifte lees u gereeld? /				
Which magazines do you read regularly?				
7. Provinsie woonagtig / Province of residence	Gauteng			1
	Noordwes/North-West			2
	KwaZulu-Natal			3
	Wes-Kaap/Western Cape			4
	Oos-Kaap/Eastern Cape			5
	Noord-Kaap/Northern Cape			6
	Vrystaat/Free State			7
	Mpumalanga			8
	Limpopo			9
8. Beroep / Occupation?	Professioneel / Professional			1
	Bestuurder / Manager			2
	Administratief / Administrative			3
	Tegnies / Technical			4
	Verkoopspersoneel / Sales Personnel			5
	Boer / Farmer			6
	Mynbou / Mining			7
	Opleiding / Education			8
	Nie-winsgeoriënteerde werker / Non-profit worker			9
	Eie werkgewer / Self employed			10
	Ander / Other			11
	(Spesifiseer / Specify			
AFDELING B : EKONOMIESE IMPAK	**SECTION B : ECONOMIC IMPACT**			
1. Wat is u huidige jaarlikse bruto inkomste? /				
What is your present annual gross income?				

2. Verkies jy om alleen te jag of as deel van 'n groep?		Alleen / Alone		1
Do you prefer to hunt alone or as part of a group?		Groep / Group		2
3. Indien deel van 'n groep, hoeveel persone is in u jaggroep?				
If a group, how many people are in your hunting group?				
4.a) Watter tipe vervoer gebruik u om u bestemming te bereik (meer as 1 kan gemerk word)? /				
Which mode of transport do you use to reach your destination (more than 1 can be marked)?				
	Vliegtuig / Aeroplane			1
	4x4			2
	Kombi/Bussie/Combi			3
	Bakkie / Pick-up			4
	Sedan			5
	Ander / Other			6
	Spesifiseer / Specify			
4.b) Voertuigfabrikaat / Make of vehicle:				
4.c) Dra u kamoefleerdrag tydens die jag? /			Ja	Nee
Do you wear camouflage clothing during the hunt?			Yes	No
			1	2
5. Hoeveel keer het u die afgelope jaar gejag?				
How many times have you gone hunting in the past year?				
6. Waar jag u? / Where do you hunt?	Suid-Afrika / South Africa			1
	Namibië / Namibia			2
	Botswana			3
	Ander / Other (Spesifiseer / Specify)			4
7. Indien in Suid-Afrika, watter provinsie verkies u om te jag?				
If in South Africa, in which province do you prefer to hunt?				
8. Motiveer asb. u antwoord in vraag 7. / Please justify your answer in question 7.				

9. Wat is die gemiddelde duur van u verblyf by 'n wildplaas?/					
What is the average length of your stay at a game farm?		days			
10. Hoeveel bestee u gewoonlik op die volgende, gedurende die JAGSEISOEN, **uitgesluit die prys van die wild?**					
How much do you usually spend on the following during the HUNTING SEASON, **excluding the price of game?**					
Akkommodasie / Accommodation		R			
Brandstof / Fuel		R			
Voedsel / Food		R			
Alkohol & Drinkgoed / Alcohol & Beverages		R			
Tabakprodukte / Tobacco products		R			
Medisyne / Medicine		R			
Toiletware / Toiletries		R			
Ammunisie / Ammunition		R			
Klerasie / Clothing		R			
Jagtoerusting uitgesluit ammunisie / Hunting gear excluding ammunition		R			
Slaggeriewe / Butchery facilities		R			
Vleisbewerking / Meat processing		R			
Dagfooie/ Daily Fees					
Ander uitgawes nie hierbo vervat (Spesifiseer) / Other expenditure not listed above (Specify)					
*		R			
*		R			
*		R			
11. Toon u besteding en hoeveelheid wild u gedurende die seisoen jag. / Indicate the amount spend and number					
of game hunted during this season.					
Wildspesies / Game species	**Hoeveelheid / Quantity**	**@ R / item**			
Blesbok/ Blesbuck					
Blouwildebees / Blue Wildebeest					
Bontebok					
Bosbok / Bushbuck					
Bosvark / Bushpig					
Duiker					
Eland					
Gemsbok / Oryx					
Grysbok					
Kameelperd / Giraffe					
Klipspringer					
Koedoe / Kudu					
Njala / Nyala					
Oorbietjie / Oribi					
Rietbok / Reedbuck					

Rooibok / Impala					
Rooihartebees / Red Hartebeest					
Rooiribbok / Mountain Reebuck					
Springbok					
Steenbok					
Swartwildebees / Black Wildebeest					
Vaalribbok / Grey Rhebuck					
Vlakvark / Warthog					
Volstruis / Ostrich					
Waterbok / Waterbuck					
Zebra					
Ander (Spesifiseer) / Other (Specify)					
AFDELING C : JAGBESONDERHEDE	**SECTION C : HUNTING DETAILS**				
1. Wat is die hoofrede waarom u jag (meer as	Vleis (Biltongjag) / Meat (Biltong-Hunting)			1	
een kan gekies word)? / What is your main	Trofee / Trophy			2	
reason for hunting (can indicate more than	Sosialiseer / Socialising			3	
one) ?	Ontspanning / Leisure			4	
	Voëljag / Wing shooting			5	
	Ander / Other (Spesifiseer / Specify)			6	
2. (a). Met watter tipe wapen jag u? /	Boogjag / Bow hunting			1	
Which type of weapon do you use?	Geweer / Rifle			2	
	Voorlaaier / Muzzle Loader			3	
	Handwapen / Hand weapon			4	
	Ander / Other				
	(Spesifiseer / Specify)			5	
(b). Indien u met 'n geweer of handwapen jag,	Tipe Wapen / Type of Weapon	Kaliber / Calibre			
met watter tipe kaliber(s)? / If you hunt	**(eg. Musgrave / Sako)**	**(eg .30 06 /**			
with either a rifle or handweapon, please		**7x57mm**			
indicate type of calibre(s)?					

(c) Waar verkies u om te jag? Where do you	Bosveld / Bushveld			1	
prefer to hunt?	Vlakte / Open area			2	
	Gevaarlike wild / Dangerous game			3	
	Ander / Other				
	(Spesifiseer / Specify)			4	
(d) Watter jagmetode verkies u	Hoofsaaklik van voertuig / Mostly from			1	
(Meer as een kan gekies word)? / Which	vehicle				
hunting method do you use (you	Stap en bekruip / Stalking			2	
can indicate more than one)?	Voortsit / Lie in wait			3	
	Jagskuilings / Hides			4	
	Ander / Other				
	(Spesifiseer / Specify)			5	
3. Hoeveel wapens gebruik u vir jag?/ How many weapons do you use for hunting?					
4. Lys die jagtersverenigings waaraan u behoort? / List the hunting associations that you belong to?					
5. Wat verwag u van 'n jagtersvereniging? /	Hou my op hoogte van sake / Keep me informed			1	
What do you expect from a hunting association	Moet namens my onderhandel / Negotiate on my behalf			2	
	Help met wapen-aansoeke /				
	Help with firearm application and renewals			3	
	Bied werkswinkels en spesialis praatjies aan /				
	Host workshops and specialist talks			4	
	Ander / Other				
	(Spesifiseer / Specify)			5	

6. Watter tipe jag opleiding het u ontvang?	Jagbekwaamdheid / Hunting competancy			1	
What type of hunting training have you	Wapenveiligheid / Weapon Safety			2	
completed?	Vleisverwerking / Meat Processing			3	
	Spoorsny / Tracking			4	
	Professionele Jagter (PJ) / Professional Hunter (PH)			5	
	Ander / Other				
	(Spesifiseer / Specify)			6	
7. Watter persentasie van u bok word vir die volgende doeleindes verwerk? (bv. Biltong 70%) /					
Which percentage of the meat is processed for the following purposes? (eg. Biltong 70%)				%	
	Biltong				
	Droëwors				
	Braaivleis/BBQ				
	Maalvleis / Mince				
	Steak				
	Kookvleis / Meat for stew				
	Ander / Other				
	(Spesifiseer/ Specify)				
			100	%	
8. Wie bewerk u vleis? / Who processes the meat?					
	Self			1	
	Slaghuis / Butchery			2	
	Ander / Other			3	
	(Spesifiseer / Specify)				
AFDELING D : VUURWAPEN WETGEWING	**SECTION D : FIRE ARMS LEGISLATION**				
1. Watter van die volgende is u (Kan meer as een kies)?					
Which of the following are you (Can select more than one)?					
	Toegewydejagter / Dedicated hunter			1	
	Professionele jagter / Professional hunter			2	
	Geleentheids-jagter / Occasional hunter			3	
			Ja	Nee	

			Yes	No	
2. Het u u toegewydejagters eksamen afgelê? / Did you complete the dedicated hunters exam?			1	2	
3. Het u 'n vaardigheidseksamen afgelê? / Did you complete the proficiency exam?			1	2	
4. Is u al bevoeg verklaar deur die SA Polisiediens? / Have you been declared competent by the SAPS?			1	2	
5. Het u al met die herlisensiëringsproses begin? /			1	2	
Have you started the process of re-issuing of licences?					
6. Watter probleme ervaar u met die SAPS in verband met vuurwapens? /					
Which problems do you experience with the SAPS in terms of firearms?					
6.1 Geen probleme / No problems				1	
6.2 Weet nie wat van my verwag word nie / Do not know what is expected of me				1	
6.3 Die SAPD is onbehulpsaam / The SAPS is uncooperative				1	
6.4 My vuurwapenlisensie aansoeke is afgekeur / My firearm license has been rejected				1	
6.5 My appelaansoek word nie aangehoor nie / My appeal application is not dealt with				1	
6.6 My plaaslike vuurwapen offisier is baie behulpsaam / My local firearm official is very cooperative				1	
6.7 My plaaslike vuurwapen offisier is baie onbehulpsaam / My local firearm official is very uncooperative				1	
7. Watter impak het die wapenwet op u as jagter (Motiveer asb.)? / Has the firearms act had any impact on you as					
hunter (Justify please)?					
8. Dra u kennis van die jagregulasies in die provinsie(s) waar u jag? / Are you aware of			Ja	Nee	
the hunting regulations in the province(s) where you hunt?			Yes	No	
			1	2	
9. Het u enige ander voorstelle of aanbevelings? / Do you have any recommendations or suggestions?					

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List of references

AARTS, J. & PEEL, V. 1999. Using a descriptive model of change when implementing large scale clinical information systems to identify priorities for further research. *International journal of medical informatics,* 56(1-3):43-50.

ABSA. 2003. Report: Game ranch profitability in South Africa. Johannesburg: SA Financial Sector Forum. 41 p.

ADAMOWICZ, W., BOCAL, P., WILLIAMS, M. & LOUVIERE, J. 1998. Stated preference approaches for measuring passive use values: choice experiments and contingent valuation. *American journal of agricultural economics,* 80(1):64-75.

ADAMOWICZ, W., LOUVIERE, J. & WILLIAMS, M. 1994. Combining revealed and stated preference methods for valuing environmental amenities. *Journal of environmental economics and management, 2*6(3):271-292.

AGARWAL, V.B. & YOCHUM, G.R. 1999. Tourist spending and race of visitors. *Journal of travel research,* 38(2):173-176.

AITCHISON, C. 1999. New cultural geographies: the spatiality of leisure, gender and sexuality. *Leisure studies,* 18(1):19-39.

ALEGRE, J. & POU, L. 2006. The length of stay in the demand for tourism. *Tourism management,* 27(6):1343-1355.

ANDERSON, J.L., CARR, R.D., HALL-MARTIN, A.J., JOUBERT, S.C.J., KEEP, M.E., LLOYD, P.H. & VRAHIMIS, S. 1989. South Africa. (*In* East, R., *ed.* Antelopes global survey and regional action plans. Part 2: Southern and South-Central Africa. Gland: International Union for Conservation of Esour. p. 57-69.)

ANDRIOTIS, K., AGIOMIRGIANAKIS, G. & MIHIOTIS, A. 2007. Tourist vacation preferences: the case of mass tourists to Crete. *Tourism analysis,* 12(1/2):51-63.

ANON. 2004. Game sale statistics South Africa. *African Indaba E-newsletter*. http://www.africanindaba.co.za/Archive03/Game-Sales-Statistics-South.pdf Date of access: 31 March 2011.

AWARITEFE, O.D. 2004. Motivation and other considerations in tourist destination choice: a case study of Nigeria. *Tourism geographies*, 6(3):303-330.

BAKER, D.A. & CROMPTON, J.L. 2000. Quality, satisfaction and behavioural intentions. *Annals of tourism research*, 27(3):785-804.

BALOGLU, S. & McCLEARY, K.W. 1999. A model of destination image formation. *Annals of tourism research*, 26(4):868-897.

BANSAL, H. & EISELT, H.A. 2004. Exploratory research of tourist motivations and planning. *Tourism management,* 25(3):387-396.

BARNES, J.I., SCHIER, C. & VAN ROOY, G. 1999. Tourists' willingness to pay for wildlife viewing and wildlife conservation in Namibia. *South African journal of wildlife research,* 29(4):101-111.

BEERLI, A. & MARTIN, J.D. 2004. Tourists' characteristics and the perceived image of tourist destinations: a quantitative analysis – a case study of Lanzarote, Spain. *Tourism management,* 25(5):623-636.

BEH, A. & BRUYERE, B.L. 2007. Segmentation by visitor motivation in three Kenyan national reserves. *Tourism management,* 28(6):1464-1471.

BEINART, W. 1990. Empire, hunting and ecological change in southern and central Africa. *Past & present,* 128(1):162-186.

BIGNÉ, J.E., SÁNCHEZ, M.I. & SÁNCHEZ, J. 2001. Tourism image, evaluation variables and after purchase behaviour: inter-relationship. *Tourism management,* 22(6):607-616.

BILGIC, A., FLORKOWSKI, J.W., YODER, J. & SCHREINER, D.F. 2008. Estimating fishing and hunting leisure spending shares in the United States. *Tourism management,* 29(4):771-782.

BLOOM, J. 2005. Market segmentation: a neutral network application. *Annals of tourism research,* 32(1):93-111.

BODDINGTON, C. 2010. What to expect when hunting in South Africa. (*In* Flack, P. & Neufeld, J., *eds.* Safari guide 2. Long Beach, Calif.: Safari Press. p. 200-208.)

BORGERS, A.W.J., VAN DER HEIJDEN, R.E.C.M. & TIMMERMANS, H.J.P. 1989. A variety seeking model of spatial choice-behaviour. *Environment and planning A,* 21(8):1037-1048.

BOSHOFF, A.F., LANDMAN, M., KERLEY, G.I.H. & BRADFIELD, M. 2007. Profiles, views and observations of visitors to the Addo Elephant National Park, Eastern Cape, South Africa. *South African journal of wildlife research,* 37(2):189-196.

BOTHA, T. 2011. Skaars wild verhoog plaasinkomste. *Landbouweekblad,* 1702:4-6.

BOTHMA, J. du P. 2002. Game ranch management. 4th ed. Pretoria: Van Schaik. 709 p.

BOTHMA, J. du P., VAN ROOYEN, N. & VAN ROOYEN, M.W. 2004. Using diet and plant resources to set wildlife stocking densities in African savannas. *Wildlife society bulletin,* 32(3):840-851.

BOWDEN, J. 2003. A cross-national analysis of international tourist flows to China. *Tourism geographies,* 5(3):257-279.

BOWDEN, J. 2006. A logistic regression analysis of the cross-cultural differences of the main destination choices of international tourists in China's main gateway cities. *Tourism geographies,* 8(4):403-428.

BREEN, H., BULL, A. & WALO, M. 2001. A comparison of survey methods to estimate visitor expenditure at a local event. *Tourism management,* 22(5):473-479.

BRETT, M.R. 2005. Game-viewing atlas of the Kruger Park. East London: Michael Brett Productions. 33 p.

BRETT, M.R. 2010. Reis deur Suid-Afrika se Nasionale Parke. Kaapstad: Struik Travel & Heritage. 62 p.

BRIEL, S. 2006. The South African wildlife industry: an economic perspective. *Agriprobe,* 3(2):2-3.

BRONNER, F. & DE HOOG, R. 2008. Agreement and disagreement in family vacation decision-making. *Tourism management*, 29(5):967-979.

BROOKS, S. 2005. Images of 'Wild Africa': nature tourism and the (re)creation of Hluhluwe game reserve, 1930-1945. *Journal of historical geography,* 31(2):212-226.

BRUWER, B. 2003. South African wine routes: some perspectives on the wine tourism industry's structural dimensions and wine tourism product. *Tourism management,* 24(4):423-435.

BUHALIS, D. 2000. Marketing the competitive destination of the future. *Tourism management*, 21(1):97-116.

CAI, L.A. 1998. Analyzing household food expenditure patterns on trips and vacations: a Tobit model. *Journal of hospitality & tourism research,* 22(4):338-358.

CAMPBELL, T. & MITCHELL, T.K. 2007. Research note: Determinants of outbound holiday travel for Barbados. *Tourism analysis,* 12(1/2):77-81.

CAMPO, S. & GARAU, J. 2008. The influence of nationality on the generation of tourist satisfaction with a destination. *Tourism analysis,* 13(1):81-92.

CANNON, T.F. & FORD, J. 2002. Relationship of demographic and trip characteristics to visitor spending: an analysis of sport travel visitors across time. *Tourism economics*, 8(3):263-271.

CAPE NATURE CONSERVATION. 2003. Guide for hunters in the Western Cape, 6:1-17. http://www.wcsu.co.za/msapics/tips.pdf Date of access: 6 March 2011.

CARRUTHERS, J. 1994. Dissecting the myth: Paul Kruger and the Kruger National Park. *Journal of Southern African studies,* 20(2):263-283.

CARRUTHERS, J. 1995. The Kruger national park: a social and political history. Pietermaritzburg: University of Natal press. 170 p.

CARRUTHERS, J. 2005. Changing perspectives on wildlife in Southern Africa, c. 1840 to c. 1914. *Society & animals*, 13(3):183-199.

CARRUTHERS, J. 2008. "Wilding the farm or farming the wild"? The evolution of scientific game ranching in South Africa from the 1960s to the present. *Transactions of the royal society of South Africa,* 63(2):160-181.

CASTLEY, J.G., BOSHOFF, A.F. & KERLEY, G.I.H. 2001. Compromising South Africa's natural biodiversity – inappropriate herbivore introductions. *South African journal of science,* 97(9/10):344-348.

CHANG, J. 2006. Segmenting tourists to aboriginal cultural festivals: an example in the Rukai tribal area, Taiwan. *Tourism management,* 27(6):1224-1234.

CHAUDHARY, M. 2000. India's image as a tourist destination – a perspective of foreign tourists. *Tourism management,* 21(3):293-297.

CHENEY, C. 2006. Hunting in protected areas. *African indaba,* 4(3):1-22.

CHEUNG, C. & LAW, R. 2001. Determinants of tourism hotel expenditure in Hong Kong. *International journal of contemporary hotel management,* 13(3):151-158.

CHI, Y.N. & CHANG, G.H.A. 2006. Determinants of US wildlife-watching consumption: a Tobit analysis. *Tourism analysis,* 11(1):25-32.

CLOETE, P.C., TALJAARD, P.R. & GROVÉ, B. 2007. A comparative economic case study of switching from cattle farming to game ranching in the Northern Cape Province. *South African journal of wildlife research,* 37(1):71-78.

CORDELL, H.K., BETZ, C.J. & GREEN, G.T. 2002. Recreation and the environment as dimensions in contemporary American society. *Leisure sciences,* 24(1):13-41.

COSHALL, J. 2000. Spectral analysis of international tourism flows. *Annals of tourism research,* 27(3):577-589.

CROMPTON, J.L. 1985. Needs assessment: taking the pulse of the public recreation client. Texas: College Station. 17 p.

CROTTS, J.C. & McKERCHER, B. 2005. The adaptation to cultural distance and its influence on visitor satisfaction: the case of first time visitors to Hong Kong. *Tourism analysis,* 10(4):385-391.

CROUCH, D. 2000. Places around us: embodied lay geographies in leisure and tourism. *Leisure studies,* 19(2):63-76.

DAMM, G.R. 2005. Hunting in South Africa: facts, risks, opportunities. *African indaba,* 3(4):1-20.

DAVIES, B. & MANGAN, J. 1992. Family expenditure on hotels and holidays. *Annals of tourism research,* 19(4):691-699.

DECROP, A. 2006. Vacation decision making. London: CABI Publishing. 266 p.

DEKKER, B. 1999. Game ranching in the Northern Cape. *Game & hunt,* 5(1):1-47.

DEL BOSQUE, I.R. & SAN MARTIN, H. 2008. Tourist satisfaction: cognitive-affective model. *Annals of tourism research,* 35(2):551-573.

DIAMANTIS, D. 2004. Ecotourism: management and assessment. London: Thompson Learning. 359 p.

DÍAZ-PÉREZ, F.M., BETHENCOURT-CEJAS, M. & ÁLVAREZ-GONZÁLEZ, J.A. 2005. The segmentation of Canary Island tourism markets by expenditure: implications for tourism policy. *Tourism management,* 26(6):961-964.

DIVISEKERA, S. 2003. A model of demand for international tourism. *Annals of tourism research,* 30(1):31-49.

DOLNICAR, S., CROUCH, G.I., DEVINNEY, T., HUYBERS, T., LOUVIERE, J.J. & OPPERWAL, H. 2008. Tourism and discretionary income allocation: heterogeneity among households. *Tourism management,* 29(1):44-52.

DOLNICAR, S. & HUYBERS, T. 2007. Different tourists – different perceptions of different places: accounting for tourists' perceptual heterogeneity in destination image measurement. *Tourism analysis,* 12(5/6):447-461.

DORRINGTON, S. 2005. The professional hunting industry in South Africa: history and future. *African indaba*, 3(4):12-13.

DORRINGTON, S. 2007. Hunting in South Africa: the new regulations. *African indaba*, 5(2):3-15.

DOWNWARD, P. & LUMSDON, L. 2000. The demand for day visits: an analysis for visitor spending. *Tourism economics*, 6(3):251-261.

DUBIN, J.A. 1998. The demand for recreation fishing in Montana. (*In* Dubin, J.A., *ed*. Studies in consumer demand-econometric methods applied to market data. Boston: Kluwer. p. 100-101.)

DURBARRY, R. & SINCLAIR, M.T. 2003. Market shares analysis: The case of French tourism demand. *Annals of tourism research,* 30(4):927-941.

DWYER, L., FORSYTH, P. & RAO, P. 2000. The price competitiveness of travel and tourism: a comparison of 19 destinations. *Tourism management,* 21(1):9-22.

ELOFF, T. 1999. Wins uit wildboerdery. *SA wild & jag*, 5(2):22-25.

ELOFF, T. 2002. Boerdery met skaars groter spesies, *SA wild & jag*, 8(2):19-22.

ERASMUS, P. 2011. Game prices. http://www.gamefarmnet.co.za/veiling.htm Date of access: 31 March 2011.

ESTES, R.D. 1992. The behavior guide to African mammals: including hoofed mammals, carnivores, primates. Los Angeles: University of California Press. 611 p.

FESENMAIER, D.R. 1988. Integrating activity patterns into destination choice models. *Journal of leisure research,* 20(3):175-191.

FESENMAIER, D. & JENG, J. 2000. Assessing structure in the pleasure trip planning process. *Tourism analysis,* 5(1):13-27.

FLACK, P.H. 2002. The conservation revolution. *Game & hunt*, 8(10):29-33.

FLACK, P. 2010. Areas and animals to hunt. (*In* Flack, P. & Neufeld, J., *eds.* Safari guide 2. Long Beach, Calif.: Safari Press. p. 188-189.)

FLACK, P. & NEUFELD, J.K., *eds*. 2010. Safari guide 2. Long Beach, Calif.: Safari Press. 360 p.

FLOGENFELDT, T. 1999. Traveler geographic origin and market segmentation: the multi trip destination choice. *Journal of travel and tourism marketing*, 8(1):111-124.

FRECHTLING, D.C. 2006. An assessment of visitor expenditure methods and models. *Journal of travel research*, 45(1):26-35.

FREW, E.A. & SHAW, R.N. 1999. The relationship between personality, gender and tourism behaviour. *Tourism management*, 20(2):193-202.

GAINES, T.E. 1998. The geography of tourism. Los Angeles: UMI. (Dissertation - MA.) 105 p.

GÓMEZ MARTíN, M.B. 2005. Weather, climate and tourism: a geographical perspective. *Annals of tourism research,* 32(3):571-591.

GONZÁLEZ, A.M. & BELLO, L. 2002. The “construct” lifestyle in market segmentation: the behaviour of tourist consumers. *European journal of marketing,* 36(1/2):51-85.

GOOSSENS, C. 2000. Tourism information and pleasure motivation. *Annals of tourism research,* 27(2):301-321.

GORDON, I. & GOODALL, B. 2000. Localities and tourism. *Tourism geographies*, 2(3):290-311.

GREEN, S. & BOSHOFF, C. 2002. An empirical assessment of the relationships between service quality satisfaction and value: a tourism study. *Management dynamics,* 11(3):2-16.

GROVÉ, B., TALJAARD, P.R. & CLOETE, P.C. 2007. A stochastic budgeting analysis of three alternative scenarios to convert from beef-cattle farming to game ranching. *Agrekon*, 46(4):514-531.

HALL, C.M. & PAGE, S.J. 2006. Progress in Tourism Management: from the geography of tourism to the geographies of tourism: a review. *Tourism management,* 30(1):3-16.

HANLY, P. & WADE, G. 2007. Research note: Modelling tourism demand – an econometric analysis of North American tourist expenditure in Ireland, 1985-2004. *Tourism economics,* 13(2):319-327.

HAYWARD, M.W., O’BRIEN, J.O. & KERLEY, G.I.H. 2007. Carrying capacity of large African predators: predictions and tests. *Biological conservation,* 139(1/2):219-229.

HIGGINBOTTOM, K. 2004. Wildlife tourism: impacts, management and planning. Altona: Common Ground Publishing. 277 p.

HOFFMANN, L.C., CRAFFORD, K., MULLER, N. & SCHUTTE, D. 2003. Perceptions and consumption of game meat by a group of tourists visiting South Africa. *South African journal of wildlife research,* 33(2):125-130.

HOLT-BIDDLE, D. 2002. A new era for Southern Africa. (*In* Holt-Biddle, D., *ed.* A vision: Endangered Wildlife Trust tenth annual report. Johannesburg: Future Publishing. p. 156-157.)

HONEY, M. 1999. Ecotourism and sustainable development: who owns paradise? Washington: Island Press. 405 p.

HONG, G.S., KIM, S.Y. & LEE, J. 1999. Travel expenditure patterns of elderly households in the US. *Tourism recreation research,* 24(1):43-52.

HORNEMAN, L., CARTER, R.W., WEI, S. & RUYS, H. 2002. Profiling the senior traveller: an Australian perspective. *Journal of travel research,* 41(1):22-37.

HOWELL, D.C. 1995. Fundamental statistics for the behavioural sciences. Belmont: Duxbury Press. 457 p.

HUI, T.K., WAN, D.W. & HO, A. 2007. Tourists' satisfaction, recommendation and revisiting Singapore. *Tourism management,* 28(4):965-975.

HUTCHINSON, J., FUJUN, L. & YOUCHENG, W. 2009. Understanding the relationships of quality, value, equity, satisfaction and behavioural intentions among golf travellers. *Tourism management*, 30(2):298-308.

JANG, S., BAI, B., HONG, G.S. & O'LEARY, J.T. 2004a. Understanding travel expenditure patterns: a study of Japanese pleasure travellers to the United States by income level. *Tourism management*, 25(3):331-341.

JANG, S., HU, C., MORRISON, A.M. & O'LEARY, J.T. 2007. Demonstrating and exploratory-confirmatory factor approach to travel activity patterns: a study of French pleasure travellers to North America. *Tourism analysis*, 12(3):149-164.

JANG, S., MORRISON, A.M. & O'LEARY, J.T. 2004b. A procedure of target market selection in tourism. *Journal of travel and tourism marketing,* 16(1):19-33.

JANG, S. & WU, C-M.E. 2006. Seniors' travel motivation and the influential factors: an examination of Taiwanese seniors. *Tourism management,* 27(2):306-316.

JONKER, H. 2003. Noord-Wes: onderskatte paradys. *Game & hunt,* 9(7):64-65.

JONKER, J.A., HEATH, E.T. & DU TOIT, C.M. 2004. The identification of management-process critical success factors that will achieve competitiveness and sustainable growth for South Africa as a tourism destination. *Southern African business review,* 8(2):1-15.

JOPPE, M., MARTIN, D.W. & WAALEN, J. 2001. Toronto's image as a destination: a comparative, importance satisfaction analysis by origin of visitor. *Journal of travel research,* 39(3):252-260.

JUROWSKI, C. & GURSOY, D. 2004. Distance effect on residents' attitudes toward tourism. *Annals of tourism research,* 31(2):296-312.

KASTENHOLZ, E. 2005. Analysing determinants of visitor spending for the rural tourist market in North Portugal. *Tourism economics*, 11(4):555-569.

KERSTETTER, D.L., HOU, J. & LIN, C. 2004. Profiling Taiwanese ecotourists using a behavioural approach. *Tourism management,* 25(4):491-498.

KEYSER, H. 2009. Developing tourism in South Africa: towards competitive destinations. Cape Town: Oxford University Press. 419 p.

KIM, H., CHENG, C. & O'LEARY, J.T. 2007. Understanding participation patterns and trends in tourism cultural attractions. *Tourism management,* 28(5):1366-1371.

KLENOSKY, D.B. & GITELSON, R.E. 1998. Travel agents' destination recommendations. *Annals of tourism research,* 25(3):661-674.

KOZAK, M. 2002. Comparative analysis of tourist motivations by nationality and destinations. *Tourism management*, 23(3):221-232.

KOZAK, M., GOKOVALI, U. & BAHAR, O. 1998. Estimating the determinants of tourist spending: a comparison of four models. *Tourism analysis,* 13(2):143-155.

KREISEL, W. 2004. Geography of leisure and tourism in the German-speaking world: three pillars to progress. *Tourism geographies*, 6(2):163-185.

KRUGER, M. & SAAYMAN, M. 2010. Travel motives to Kruger and Tsitsikamma National Parks: a comparative study. *South African journal of wildlife research,* 40(1):93-102.

LAM, C. & HSU, C.J.C. 2006. Predicting behavioural intention of choosing a travel destination. *Tourism management,* 27(4):589-599.

LEE, H-C. 2001. Determinants of recreational boater expenditures on trips. *Tourism management,* 22(6):659-667.

LEEWORTHY, V.R., WILEY, P.C., ENGLISH, D.B.K. & KRIESE, W. 2001. Correcting response bias in tourist spending surveys. *Annals of tourism research*, 28(1):83-97.

LETHO, X.Y., O'LEARY, J.T. & MORRISON, A.M. 2004. The effect of prior experience on vacation behaviour. *Annals of tourism research,* 31(4):801-818.

LEW, A.A. 2001. Literature review: defining geography of tourism. *Tourism geographies*, 3(1):105-114.

LEW, A. & McKERCHER, B. 2006. Modeling tourist movements: a local destination analysis. *Annals of tourism research,* 33(2):403-423.

LI, Y. 2000. Geographical consciousness and tourism experience. *Annals of tourism research,* 27(4):863-883.

LI, M., WU, B. & CAI, L. 2008. Tourism development of world heritage sites in China: a geographic perspective. *Tourism management,* 29(2):308-319.

LIM, C. 1997. Review of international tourism demand models. *Annals of tourism research,* 24(4):835-849.

LIM, C. & McALEER, M. 2005. Ecologically sustainable Tourism Management. *Environmental modelling & software*, 20(11):1431-1438.

LINDSEY, P.A. 2008. Trophy hunting in sub Saharan Africa: economic scale and conservation significance. (*In* Baldus, R.D., Damm, G.R. & Wollscheid, K., *eds*. Best practices in sustainable hunting – a guide to best practices from around the world. Budakeszki: International Council for Game and Wildlife Conservation. p. 41-47.)

LINDSEY, P.A., ALEXANDER, R., FRANK, L.G., MATHIESON, A. & ROMAÑACH, S.S. 2006. Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable. *Animal conservation,* 9(3):283-291.

LINDSEY, P.A., ROULET, P.A. & ROMAÑACH, S.S. 2007. Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa. *Biological conservation,* 134(4):455-469.

LIU, C-M. 1999. Tourist behaviour and the determinants of secondary destination. *Asia pacific journal of marketing logistics,* 11(4):3-22.

LOON, M.L. & POLAKOW, D. 2001. Ecotourism ventures rags of riches. *Annals of tourism research*, 28(4):892-907.

LU, X. & PAS, E.I. 1999. Socio-demographics, activity participation and travel behaviour. *Transportation research, part A*, 33(1):1-18.

MABUNDA, D. 2008. SANParks and the future of national parks. *Africa geographic,* 16(7):82-83.

MACKENZIE, J. 1990. Conjoint analysis of deer hunting. *Northeastern journal of agricultural and re-source economics,* 19(2):109-117.

MANFREDO, M.J., FIX, P.J., TEEL, T.L., SMELTZER, J. & KAHN, R. 2004. Assessing demand for big-game hunting opportunities: applying the multiple-satisfaction concept. *Wildlife society bulletin*, 32(4):1147-1155.

MARCHANT, A.N. 2011. Wildlife management – Blesbok: management of blesbok on farmland in KwaZulu-Natal. http://www.kznwildlife.com/index.php?/pdf/Blesbok-Management.pdf Date of access: 14 April 2011.

MAREE, K. & PIETERSEN, J. 2007. Surveys and the use of questionnaires. (*In* Maree, K., *ed*. First steps in research. Pretoria: Van Schaik Publishers. p. 172-181.)

MARTIN, D. 2007. Management learning exercise and trainer's note for building grounded theory in tourism behaviour. *Journal of business research*, 60(7):742-748.

McHONE, W.W. & RUNGELING, B. 1999. Special cultural events: do they attract leisure tourists? *International journal of hospitality management,* 18(2):215-219.

McKERCHER, B. 2008. Segment transformation in urban tourism. *Tourism management,* 29(6):1215-1225.

McKERCHER, B. & LAU, G. 2008. Movement patterns of tourists within a destination. *Tourism geographies,* 10(2):355-374.

McKERCHER, B., WONG, C. & LAU, G. 2006. How tourists consume a destination. *Journal of business research,* 59(5):647-652.

MEHMOOD, S., ZHANG, D. & ARMSTRONG, J. 2003. Factors associated with declining hunting licence sales in Alabama. *Human dimensions of wildlife,* 8(4):246-262.

MENTIS, M. 2009. Mixed domestic and wild ungulate systems in South Africa, in range and animals (*In* Squires, V.E., *ed*. Range and animal sciences and resources management, in Encyclopedia of Life Support Systems (EOLSS). Oxford: Eolss Publishers, Oxford. p. 1-31. http://greenplanet.eolss.net/olssLogn/mss/C10/E5-35-22/E5-35-22-TXT.aspx Date of access. 2 June 2011.

MOK, C. & IVERSON, T.J. 2000. Expenditure-based segmentation: Taiwanese tourists to Guam. *Tourism management,* 21(3):299-305.

MOLERA, L. & ALBALADEJO, I.P. 2007. Profiling segments of tourists in rural areas of South-Eastern Spain. *Tourism management*, 28(3):757-767.

MOREY, E.R., SHAW, W.D. & ROWE, R.D. 1991. A discrete choice model of recreation participation site choice, and activity evaluation when complete trip data are not available. *Journal of environmental economics and management,* 20:181-201, Mar.

MUCINA, L. & RUTHERFORD, M.C. 2006. The vegetation of South Africa, Lesotho and Swaziland. Pretoria: South African National Biodiversity Institute. 807 p.

MULES, T. 1998. Decomposition of Australian tourism expenditure. *Tourism management,* 19(3):267-272.

MUNDET, L. & RIBERA, L. 2001. Characteristics of divers at a Spanish resort. *Tourism management,* 22(5):501-510.

MURPHY, L., BENCKENDORFF, P. & MOSCARDO, G. 2007. Destination brand personality: visitor perceptions of a regional tourism destination. *Tourism analysis,* 12(5-6):419-432.

MURPHY, P., PRITCHARD, M.P. & SMITH, B. 2000. The destination product and its impact on traveller perceptions. *Tourism management,* 21(1):43-52.

MYKLETUN, R.J., CROTTS, J.C. & MYKLETUN, A. 2001. Positioning an island destination in the peripheral area of the Baltics: a flexible approach to market segmentation. *Tourism management*, 22(5):493-500.

NADEAU, J., HESLOP, L., O'REILLY, N. & LUK, P. 2008. Destination in a country image context. *Annals of tourism research*, 35(1):84-106.

NELL, D. 2003. The development of wildlife utilisation in South Africa and Kenya, c 1950-1990. Oxford: Oxford University. (Thesis - DPhil.) 234 p.

NEWSOME, D., DOWLING, R. & MOORE, S. 2005. Aspects of tourism: wildlife tourism. Clevedon: Channel View Publications. 299 p.

NICOLAU, J.L. & MÁS, F.J. 2006. The influence of distance and prices on the choice of tourist destinations: the moderating role of motivations. *Tourism management,* 27(5):982-996.

NYAUPANE, G.P. & GRAEFE, A.R. 2008. Travel distance: a tool for nature based tourism market segmentation. *Journal of travel and tourism marketing,* 25(3-4):355-366.

OIGENBLICK, L. & KIRSCHENBAUM, A. 2002. Tourism and immigration: comparing alternative approaches. *Annals of tourism research,* 29(4):1086-1100.

PARK, D. & YOON, Y. 2009. Segmentation by motivation in rural tourism: a Korean case study. *Tourism management,* 30(1):99-108.

PEARCE, D.G. 2008. A needs-functions model of tourism distribution. *Annals of tourism research,* 35(1):148-168.

PEARCE, P., MORRISON, A.M. & RUTLEDGE, J.L. 1998. Tourism bridges across continents. Sydney: McGraww-Hill. 449. p.

PEREZ, E.A. & SAMPOL, C.J. 2000. Tourist expenditure for mass tourism markets. *Annals of tourism research*, 27(3):623-637.

PIETERSEN, J. & MAREE, K. 2007. Surveys and the use of questionnaires. (*In* Maree, K., *ed*. First steps in research. Pretoria: Van Schaik Publishers. p. 183-196.)

PIKE, S. 2002. Destination image analysis – a review of 142 papers from 1973 to 2000. *Tourism management*, 23(5):541-549.

PIKE, S. 2004. Destination marketing organisations. Amsterdam: Elsevier. 219 p.

PIKE, S. & RYAN, C. 2004. Destination positioning analysis through a comparison of cognitive, affective and conative perceptions. *Journal of travel research,* 42(4):333-342.

PISSOORT, V. & SAAYMAN, M. 2007. Market segmentation of visitors at three selected arts festivals in South Africa. *Acta comercii,* 255-268.

PLOG, S.C. 2002. The power of psychographics and the concept of venturesomeness. *Journal of travel research,* 40(3):244-251.

POL, A.P., PASCUAL, M.B. & VAZQUEZ, P.C. 2006. Robust estimates and bootstrap confidence intervals applied to tourism spending. *Tourism management*, 27(1):42-50.

PRIDEAUX, B. 2000. The role of transport systems in destination development. *Tourism management,* 21(1):53-63.

RADDER, L. 2000. Expectations of kudu hunters in the Eastern Cape: a value chain constellation. *South African journal of wildlife research,* 30(3):129-133.

RADDER, L. 2001. The nature, antecedents and role of South African kudu hunters' expectations in sustaining a competitive advantage. *South African journal of wildlife research*, 31(3/4):173-178.

RADDER, L. 2005. Motives of international trophy hunters. *Annals of tourism research,* 32(4):1141-1144.

RADDER, L. & BECH-LARSEN, T. 2008. Hunters' motivations and values: a South African perspective. *Human dimensions of wildlife,* 13(4):252-262.

RADDER, L., VAN NIEKERK, P. & NAGEL, A. 2000. Staging experiences to satisfy needs: a game hunting experience. *Academy of marketing studies journal,* 4(1):23-30.

REGAN, T.H. & DAMONTE, T. 1999. A geoeconomic approach to South Carolina's NASCAR markets. *Public administration quarterly,* 23(3):276-312.

REILLY, B.K., SUTHERLAND, E.A. & HARLEY, V. 2003. The nature and extent of wildlife ranching in Gauteng province, South Africa. *South African journal of wildlife research*, 33(2):141-144.

RENSSEN, M. 2006. Atlas of national parks and reserves of South Africa. Cape Town: Map Studio. 191 p.

REYNOLDS, P.C. & BRAITHWAITE, D. 2001. Towards a conceptual framework for wildlife tourism. *Tourism management,* 22(1):31-42.

RICHARDS, G. 2002. Tourism attraction systems: exploring cultural behaviour. *Annals of tourism research*, 29(4):1048-1064.

RITTICHAINUWAT, B.N. QU, H. & MONGKHONVANIT, C. 2008. Understanding the motivation of travellers repeat visits to Thailand, *Journal of vacation marketing,* 14(1):5-21.

SAAYMAN, M. 2001. A marketing analysis of tourists visiting selected national parks in South Africa. Potchefstroom: Institute for Tourism and Leisure Studies. 107 p.

SAAYMAN, A. & SAAYMAN, M. 2006a. Sociodemographics and visiting patterns of arts festivals in South Africa. *Event management,* 9(4):211-222.

SAAYMAN, A. & SAAYMAN, M. 2006b. Does the location of arts festivals matter for the economic impact? *Papers in regional science,* 85(4):569-584.

SAAYMAN, A., SAAYMAN, M. & NAUDÉ, W.A. 2000. The impact of tourism spending in South Africa: spatial implications. *South African journal of economic and management sciences*, 3(3):369-386.

SAAYMAN, M. & DU PLESSIS, E. 2003. Competitiveness of South Africa as a tourist destination. *South African journal for research in sport, physical education and recreation*, 25(2):57-65.

SAAYMAN, M. & SAAYMAN, A. 2007. Socio-demographic and behavioural determinants of visitor spending at a national arts festival: a panel data analysis. *World journal of events,* 1(1):28-33.

SAS Institute Inc. 2003 The SAS System for Windows Release 9.1 TS Level 1M3 Copyright© by SAS Institute Inc., Cary, NC, USA.

SCHOLTZ, M., VAN DER MERWE, P. & SAAYMAN, M. 2010. National profile and economic impact of biltong hunters in South Africa. Potchefstroom: Institute for Tourism and Leisure Studies. 37 p. (Unpublished.)

SCHROEDER, H.W. & LOUVIERE, J. 1999. Stated choice models for predicting the impact of user fees at public recreation sites. *Journal of leisure research,* 31(3):300-324.

SCOTT, D., JONES, B. & KONOPEK, J. 2007. Implications of climate and environmental change for nature-based tourism in the Canadian Rocky Mountains: a case study of Waterton Lakes National Park. *Tourism management,* 28(2):570-579.

SEDDIGHI, H.R. & THEOCHAROUS, A.L. 2002. A model of tourism destination choice: a theoretical and empirical analysis. *Tourism management,* 23(5):475-487.

SEILER, V.L., HSIEH, S., SEILER, M.J. & HSIEH, C. 2002. Modeling travel expenditure for Taiwanese tourism. *Journal of travel and tourism marketing,* 13(4):47-60.

SHELDON, P.J. 1993. Forecasting tourism: expenditures versus arrivals. *Journal of travel research,* 32(1):13-20.

SIDERELIS, C. & MOORE, R.L. 1998. Recreation demand and the influence of site preference variables. *Journal of leisure research,* 30(3):301-318.

SINHA, C.C. 2001. Wildlife tourism: a geographical perspective. (Paper presented during the Geography Curriculum in Service Conference, Tourism Geography: Issues challenges and the changing nature of contemporary tourism, University of Western Sydney, Hawkesbury Campus, 27 July 2001. p. 1-23.)

SIRAKAYA, E. & WOODSIDE, A.G. 2005. Building and testing theories of decision making by travellers. *Tourism management,* 26(6):815-832.

SKINNER, .D. & CHIMIMBA, C.T. 2005. The mammals of the Southern African subregion. New York: Cambridge University Press. 814 p.

SONG, H., ROMILLY, P. & LIU, X. 2000. An empirical analysis of outbound tourism demand in the UK. *Applied economics,* 32(5):611-624.

SONG, H., WONG, K.K.F. & CHON, K.K.S. 2003. Modeling and forecasting the demand for Hong Kong tourism. *Hospitality management,* 22(4):435:451.

SPOTTS, D.M. & MAHONEY, E.M. 1991. Segmenting visitors to a destination region based on the volume of their expenditure. *Journal of travel research,* 29(4):24-31, Spring.

SPSS Inc. 2007. SPSS® 16.0 for Windows, Release 16.0.0, Copyright© by SPSS Inc., Chicargo, Illinois. www.spss.com.

STEENKAMP, C., MARNEWICK, D. & MARNEWICK, K. 2005. A status quo of the conservation impacts from the professional and recreational hunting industry. Third draft. Vuya Impact Assessments. p. 1-59.

STEYN, H.S. 2009. Handleiding vir bepaling van effekgrootte-indekse en praktiese betekenisvolheid. http://www.puk.ac.za/opencms/export/PUK/html/fakulteite/nauttr/skd/handleiding.html Date of access: 21 February 2011.

STUART, C. & STUART, T. 2007. Field guide to mammals of Southern Africa. Cape Town: Struik. 307 p.

SUH, Y.K. & GARTNER, W.C. 2004. Preferences and trip expenditures - a conjoint analysis of visitors to Seoul, Korea. *Tourism management,* 25(1):127-137.

TASSIOPOULOS, D. & HAYDAM, N. 2008. Golf tourists in South Africa: a demand-side study of a niche market in sports tourism. *Tourism management,* 29(5):870-882.

TIEFENBACHER, J.P., DAY, F.A. & WALTON, J.A. 2000. Attributes of repeat visitors to small tourist orientated communities. *Social science journal,* 37(2):299-308.

TRAIN, K.E. 1998. Recreation demand models with taste differences over people. *Land economics,* 74(2):230-239.

TSE, R.Y.C. 2001. Estimating the impact of economic factors on tourism: evidence from Hong Kong. *Tourism economics,* 7(3):277-293.

UYSAL, M., CHEN, J.S. & WILLIAMS, D.R. 2000. Increasing state market share through a regional positioning. *Tourism management,* 21(1):89-96.

VALENTINE, P. & BIRTLES, A. 2004. Wildlife watching. (*In* Higginbottom, K., *ed.* Wildlife tourism: impacts, management and planning. Altona, Vic.: Common Ground Publishing. p. 15-34.)

VAN DER MERWE, P. 2004. Game farms as sustainable ecotourism attractions. Potchefstroom: PU vir CHO. (Thesis - PhD.) 164 p.

VAN DER MERWE, P. & SAAYMAN, M. 2003. Determining the economic value of game farm tourism. *Koedoe*, 46(2):103-112.

VAN DER MERWE, P. & SAAYMAN, M. 2005. Game farms as sustainable ecotourism attractions. *Koedoe, 48*(2):1-10.

VAN DER MERWE, P. & SAAYMAN, M. 2008. National profile and economic impact of Biltong hunters in South Africa. Potchefstroom: Institute for Tourism and Leisure Studies. 39 p. (Unpublished.)

VAN DER MERWE, P., SAAYMAN, M. & KRUGELL, W. 2004. Factors that determine the price of game. *Koedoe,* 47(2):105-113.

VAN DER MERWE, P., SAAYMAN, M. & KRUGELL, W. 2007. The determinants of spending by biltong hunters. *South African journal of economic and management sciences,* 10(2):184-194.

VAN DER WAAL, C. & DEKKER, B. 2000. Game ranching in the Northern Province of South Africa. *South African journal of wildlife research,* 30(4):151-156.

VAN EYK, M. 2003. Building blocks of marketing strategy for targeting local biltong hunters: an evaluation. Port Elizabeth: Port Elizabeth Technikon. (Dissertation - MTech.) 148 p.

VAN NIEKERK, P. du P. 2006. Characteristics of the game industry in the Eastern Cape: a brief overview. (*In* Wilson, S.L., *ed*. Proceedings of the 2004 Thicket Forum Centre for African Conservation Ecology, Report no 54. Port Elizabeth: Nelson Mandela Metropolitan University. p. 51-56.)

VLEISSENTRAAL. 2011. http://vleissentraal.co.za/users/bosveld/web Date of access: 23 March 2011.

VON BRANDIS, R.G. & REILLY, B.K. 2007. A temporal analysis of trophy quality in South Africa: has trophy quality changed over time? *South African journal of wildlife research,* 37(2):153-158.

WALKER, C. 1996. Signs of the wild. Cape Town: Struik Nature. 215 p.

WANG, D. 2004. Tourist behaviour and repeat visitation to Hong Kong. *Tourism geographies,* 6(1):99-118.

WEAGLEY, R.O. & HUH, E. 2004. The impact of retirement on household leisure expenditures. *Journal of consumer affairs,* 38(2):262-281.

WITLOX, F. 2007. Evaluating the reliability of reported distance data in urban travel behaviour analysis. *Journal of transport geography*, 15(3):172-183.

WONG, J. & YEH, C. 2009. Tourist hesitation in destination decision making. *Annals of tourism research,* 36(1):6-23.

ZHANG, J. & JENSEN, C. 2007. Comparative advantage: explaining tourism flows. *Annals of tourism research*, 34(1):223-243.

ZIKMUND, W.G. 2003. Business research models. 7th ed. Forth Worth: Thompsons. 748 p.