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Adoption of Online Grocery Shopping in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2009

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ABSTRACT

Grocery shopping is an activity that every person will conduct at some or other time in his or her lifetime. Over the past few centuries, shopping has always been done in the traditional way, where customers go physically to stores to purchase the products that they require. With the advent and extensive adoption of the Internet, the face of grocery shopping has changed and a new animal in the form of Online Grocery Shopping has emerged as a potential service that offers significant benefits to both users and retailers.

The purpose of this research was to firstly indentify the typical demographical and behavioural profile of a South African that would use an Online Grocery Shopping Service (OGSS). The second aim was to review the factors identified from previous research that could potentially affect the adoption of such a service and to then test whether such factors were applicable to the South African market.

Data was collected via online and email questionnaires that were sent to potential respondents, as well as paper questionnaires that were physically administered at the entrances to certain grocery stores. A total of 175 surveys were collected, of which 132 responses were fully completed and were used for the analysis. The demographical and behavioural profiles were analysed and discussed using graphs. A confirmatory factor analysis was employed and applied to the data collected, to determine whether the factors identified were pertinent to the South African consumer.

It was found that the South African that is most likely to use an OGSS was between the ages of 30 to 49, would have a tertiary qualification and would earn at least a net household income of R10 000. The behavioural characteristics of the potential South African OGSS user was found to be that they would have larger families of at least 4 members, have one to two children, have access to the Internet, would be the major grocery shopper in the family and would normally spend a significant amount of time conducting the grocery shopping activity.

It was concluded from the confirmatory factor analysis that the five factors identified namely, perceived benefits, perceived ease of use, perceived risk, visibility and social influence, were indeed factors that would affect the adoption of an OGSS in South Africa.

From the perceived benefits aspect, users perceived the time saving, convenience and assisting the old and elderly elements to be the prime benefits offered by an OGSS. The perceived ease of use highlighted that the OGSS offered must be simple to understand and easy to follow for it to be initially adopted. The perceived risk factor was also found to be a critical element that influenced the adoption of an OGSS. Primary reasons of risk related to credit card fraud, potential robbery, incorrect products being delivered and poor quality of products. The visibility and social influence factors were found to be essential to the adoption of an OGSS, especially during the growth phase. The reason provided for this was that the visibility of the service being used and the social pressure by others contributed to new users adopting or rejecting such a service.

DECLARATION

I, Khalid Rashid Maal, declare that this research report is my own work. It is submitted in partial fulfillment of the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. It has not been submitted before, for any other degree or examination at any other university.

_____
Khalid Rashid Maal

Signed at _____

On the _____day of _____ 2009

DEDICATION

This research is dedicated to my wife Salma, my son Salman and my parents Rashid and Rashida. Thank you for making me the person that I am today and for all the love and support that you have given me.

ACKNOWLEDGEMENTS

I wish to thank and express my sincere gratitude and appreciation to the following people:

- My supervisor, Prof. Geoffrey Bick, for the support, guidance and assistance provided to me throughout by research,
- my wife Salma, who has been a source of inspiration and support for me through these trying times. Without her, I honestly believe that I would not have made it this far. Thank you for believing in me and my abilities.
- to my son Salman, who was born only two days before I started my MBA, who always was there to greet me with a warm smile and a hug (when he was awake) which instantly reduced by levels of stress and
- finally, to all the participants in my questionnaire, without them this research would not have been possible.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the Study

The purpose of this research is to determine the profile of the South African consumer that would potentially use an Online Grocery Shopping Service (OGSS) and to identify the factors that may foster or hinder its adoption in South Africa.

1.2 Context of the Study

Technology is changing the face of the retail-shopping environment, with many industries adopting online services to either replace or supplement their traditionally “brick and mortar” businesses. The advent of the Internet and the subsequent developments of various Internet services has significantly changed the manner in which business is conducted (Jun and Cai 2001).

The retail food industry is no exception towards the move in using technology to provide better services and products to its customers, thus ensuring sustainable future revenue streams (Kurnia 2003). Morganosky and Cude (2000), highlight the fact that OGSS applications have received much attention in the last decade. Within South Africa, the OGSS is still in its infancy and according to McClatchey et al. (2007), grocery companies are not really moving forward with this concept due to the lack of communication infrastructure. These authors suggest that with the steady improvement of the communication infrastructure and the reduction in data costs within South Africa, ordering over the Internet could become an attractive option. Within many countries, more notably Australia, Europe and the United States (US), OGSS’s is becoming an attractive channel offering extensive opportunities for grocery companies (Schuster and Sporn 1998). According to Kinsey (1998), by the year 2008, Internet food shopping in the US would account

for approximately 10 percent of food sales. South African grocery companies should therefore look to exploit this channel as an additional source of competitive advantage (Von Lieres 2003).

Even though this channel seems to have huge advantages for both retailers and consumers, its rate of adoption and success in South Africa has not been as good as predicted when it was launched in 2003 (Von Lieres 2003).

1.3 Problem Statement

1.3.1 *Main Problem*

The purpose of this research is to determine a profile of the South African consumer that would potentially use an OGSS and to identify the possible factors that could foster or hinder its adoption in South Africa.

1.3.2 *Sub-problems*

The first sub-problem is to develop a profile of the South African consumer that would potentially subscribe to using an OGSS.

The second sub-problem is to identify the possible factors that could foster or hinder the adoption of an OGSS in South Africa.

1.4 Significance of the Study

This study fills a gap in that it provides a profile of the South African consumer that might adopt such a service as well as identifies their reasons for using such a service. Limited research pertaining to the profiling of the potential users and their possible reasons for accepting or rejecting an OGSS has been conducted in South Africa. As stated by Von Lieres (2003), the company Pick n Pay trialed their OGSS

for only two months and then launched the service, without any sound information as to which segments to target. This study provides information to South African grocery companies such as Pick n Pay, Woolworths, Spar, Checkers and any other grocery retailers that are offering or looking to offer an OGSS, as it allows such companies to better understand the target market for this service. An online service of this nature could offer such companies a competitive advantage in that it would allow them to develop better offerings and provide for better marketing of their products, which could result in improved customer satisfaction. Kurnia and Johnston (1999), indicate that an OGSS could provide a grocery retailer with a multitude of benefits with the obvious ones being more efficient use of staff and reduced building or infrastructure cost. Zhu et al. (2002), state that technology based service systems are expected to help service providers improve service quality, financial performance, customer satisfaction and productivity. In addition, the findings of this study provides South African grocery retailers with information, which could be used to formulate effective strategies that would encourage consumers to utilise an OGSS.

This study not only adds to the OGSS knowledge base in the South African context, but such research findings could be applied to other developing countries.

1.5 Delimitations and Limitations

1.5.1 *Delimitations*

- Geographical: This research will be limited to users in the Gauteng province as it is assumed that this sample will be representative of the South African population.
- Time and Cost: As time and cost of conducting the research is limited, this study cannot be extended to include more respondents from different areas in South Africa.

1.6 Definition of Terms

Ecommerce: Refers to the buying, selling, marketing and servicing of products or services via the Internet (http://dictionary.reference.com/).

Internet: This is also referred to as the World Wide Web and is a network of computers that are connected via various communication technologies to facilitate communication, interaction and information sharing between people (http://dictionary.reference.com/).

OGSS – Online Grocery Shopping Services: This essentially means purchasing grocery items from normal retailers, but using the Internet to order the groceries, which are delivered to your home (Hiser et al. 1999).

1.7 Assumption

- It is assumed that respondents are competent to answer the questionnaires.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The purpose of this section of the document is to provide information on the literature that covers various aspects of an OGSS that has been reviewed, assimilated and summarised. The aim of the literature review is to find and analyse information that is relevant to the two sub problems that are described in section 1.3.2. The literature that was reviewed consisted mainly of peer-reviewed journals, a small number of theory based books and electronic articles.

An information flow map as illustrated in Figure 1 was developed to ensure that there was a logical flow of information in the literature review section. In addition, the information flow map was used to check for alignment and ensure integration between the various aspects of the literature review.

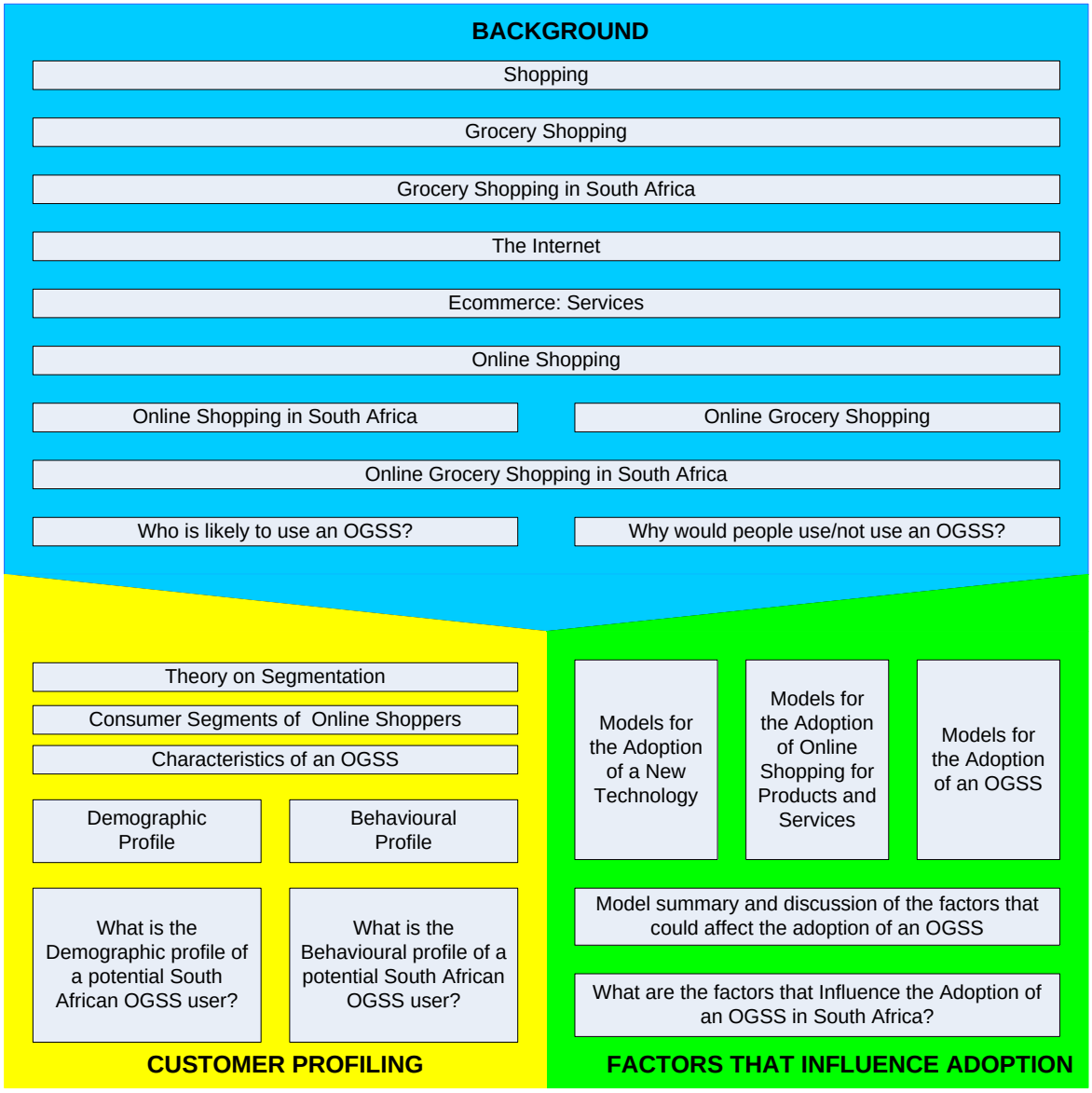

Figure 1: Literature Review Information Flow Map

The literature review is divided into three main areas namely:

1. *Background Information:* Within this section an overview of shopping and possible reasons as to why people shop are discussed. In addition, where people shop, the impact that technology has had on where people shop, ecommerce, online shopping and finally online grocery shopping are discussed.

2. *Customer Profiling:* This section discusses the characteristics of an online shopper as well as the most likely profile of an OGSS user.

3. *Factors that Influence the Adoption of an OGSS:* This section discusses the possible reasons that would cause a consumer to adopt or reject an OGSS.

2.2 Background Information

2.2.1 *Overview of Shopping*

Shopping is the process of physically going to locations to purchase goods or products and is an activity that was developed to ensure that mass produced goods that are manufactured by modern manufacturing companies are sold (Farrell 1998). Buttle (1992), suggest that shopping is a contextualised act with the most common reasons for people shopping is to:

- Purchase groceries and household items,
- clothing and
- gifts.

Many people think of shopping as a chore, however there are some, especially women who regard shopping to be a relaxing and therapeutic experience (Dholakia 1999). According to this author, shopping for grocery and household items is considered to be a pleasureless chore, which has become part of the normal mundane routine. In addition, this author indicates that clothing and gift shopping are considered to be a break away from this routine, being more recreational, expressive and possibly offers an opportunity for some self-indulgence as well as providing some level of enjoyment.

There are various reasons or motives for people to go shopping, with the more common ones being, interaction with family, utilitarian and shopping for pleasure (Dholakia 1999). According to Buttle (1992), peoples willingness and sense of enjoyment of the shopping experience is to a large extent dependent on the type of products that are being purchased, the time period of purchasing (vacation or at home) and the amount of time available for shopping.

Until the mid nineties, shopping activities were predominantly performed by females (Dholakia et al. 1995). As more and more women enter the working environment, there is likely to be a significant change in the allocation of the shopping activity and joint responsibility for grocery shopping is likely to become a reality (Dholakia 1999).

2.2.2 *Grocery Shopping*

Grocery shopping is a purposeful exercise of purchasing fast moving consumer goods (FMCG) by consumers, which is normally repeated at some defined interval. Raijes and Tuuainen (2001), state that grocery shopping is normally a buying behaviour with low involvement decisions, which are made frequently, at regular intervals with low information search and low attributed levels of risk. Everyone must eat, thus the demand for groceries is always present. How a company provides these products determines its success or failure in the future (Delaney-Klinger et al. 2003). In a study conducted in the UK by Aylott and Mitchell (1999), it was found that grocery shopping including household goods, accounted for the largest share of consumer shopping expenditure.

2.2.3 *The South African Grocery Shopping Industry*

The South African grocery shopping and household goods industry is dominated by a few major retailers, which together account for almost 95% of this market as

at the end of 2007 (Anon 2008c). These companies and their respective market share are shown in Figure 2.

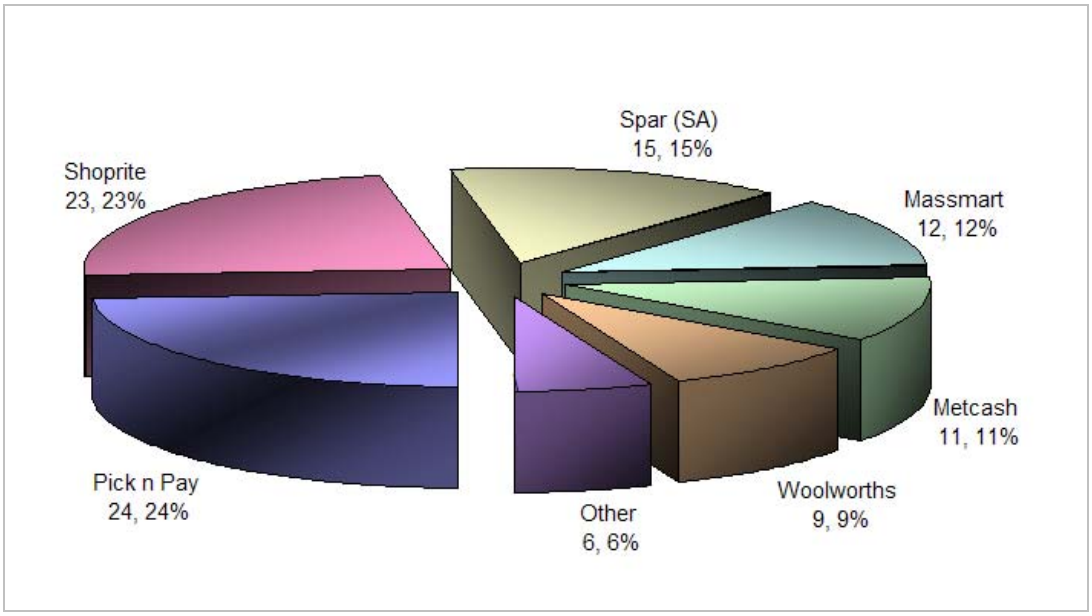

Figure 2: South African Grocery and Household Market

(Anon 2008c)

2.2.4 *The Internet and its Impact on Shopping*

The Internet is a name that was given to the collective electronic infrastructure that consisted of computers, which are interconnected via a multitude of communication networks and spans the entire world (Abbate 1994).

The Internet is undoubtedly one of the technologies that has been adopted the most rapidly in history and has seen phenomenal growth especially in the last two decades (Petrazzini and Kibati 1999).

According to Kurnia and Chien (2003), the Internet has been a key driver in facilitating online business transactions, not only between different commercial business entities, but also between such entities and the end consumer. Dutta and Roy (2003), state that the Internet has created new opportunities for communication and coordination between individuals, businesses, industries,

countries and the world at large. Narayanan (2006), indicate that for the ordinary consumer, the Internet has resulted in profound changes in which they conduct their daily lives. The Internet has been used for a variety of purposes, with the main uses being electronic mail (email), online chatting, entertainment, online banking, ecommerce, and electronic shopping (Narayanan 2006).

In spite of the Internet's huge growth and diffusion worldwide, the level of diffusion is unequally distributed across various countries in the world as shown in Figure 3. It is thus imperative for a company to anticipate the future growth of the Internet within the countries in which it operates (Petrazzini and Kibati 1999; Dutta and Roy 2003).

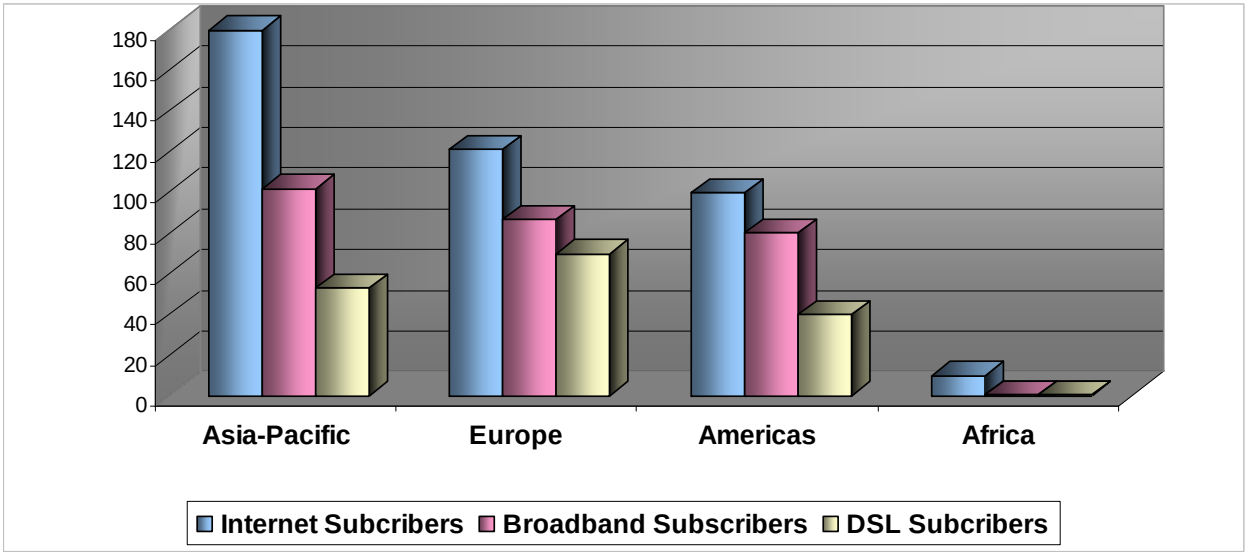

Figure 3: Internet Subscribers by Region and Access Type, 2006 (ITU 2007)

Within South Africa, the adoption of the Internet has increased significantly from the year 2000 as illustrated in Figure 4. It has achieved an average growth rate of just over 14% from 2000 to 2006 as shown in Table 1, with over 5.1 million users utilising this service in South Africa (Goldstuck 2004a, 2005; ITU 2007).

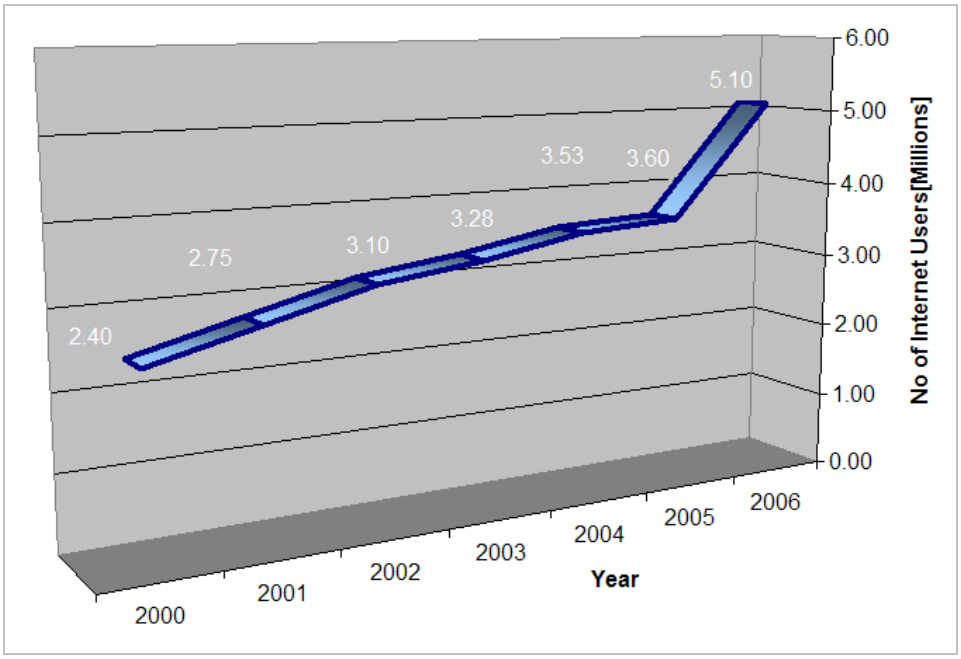

Figure 4: Growth of Internet Users in South Africa

(Goldstuck 2004a, 2005; ITU 2007)

Table 1: Internet Statistics for South Africa

(Goldstuck 2004a, 2005; ITU 2007)

Year	No of Internet Users	Growth Rate	Population	% of Population	Usage Source
2000	2,400,000	-	43690000	5.49%	ITU
2001	2,750,000	14.58%	44409700	6.19%	ITU
2002	3,100,000	12.73%	45129400	6.87%	Wide World worx
2003	3,283,000	5.90%	45919200	7.15%	Wide World worx
2004	3,523,000	7.31%	47556900	7.41%	Wide World worx
2005	3,600,000	2.19%	48861805	7.37%	Wide World worx
2006	5,100,000	41.67%	49660502	10.27%	ITU

Wolcott et al. (2001), state that the number of Internet users has grown from tens of thousands in the early 1990's to over 400 million worldwide by the end of 2000. Thus, the Internet has proven to be the technology that has diffused the fastest more than any other innovation to date.

Technology is seen to be one of the largest limitations to the rapid adoption of the Internet in South Africa (Goldstuck 2004a, 2005; ITU 2007). In these authors opinion, Internet users require a fast reliable connection as well as reduced data cost if they are to use the Internet to conduct their online transactions.

Wolcott et al. (2001), suggest that within various population groups, there exist users with different levels of sophistication in terms of Internet usage as shown in Table 2. It is further suggested by these authors that a company needs to identify and understand these levels of sophistication when developing products or services for such target markets as this would affect the adoption of these products or services.

Table 2: The Sophistication of Internet Users

(Wolcott et al. 2001)

Level	Description
0	None: The Internet is not used, except by a very small fraction of the population that logs into foreign services.
1	Minimal: The user community struggles to employ the Internet in conventional, mainstream applications.
2	Conventional: The user community changes established practices somewhat in response to or in order to accommodate the technology, but few established processes are changed dramatically. The Internet is used as a substitute or straightforward enhancement for an existing process (e.g., e-mail vs. post). This is the first level at which we can say that the Internet has "taken hold" in a country.
3	Transforming: The use of the Internet by certain segments of users results in new applications, or significant changes in existing processes and practices, although these innovations may not necessarily stretch the boundaries of the technology's capabilities.
4	Innovating: Segments of the user community are discriminating and highly demanding. These segments are regularly applying, or seeking to apply, the Internet in innovative ways that push the capabilities of the technology. They play a significant role in driving the state-of-the-art and have a mutually beneficial and synergistic relationship with developers.

The demographics of the South African Internet users are shown in the various graphs in Figure 5. As can be seen from these graphs, there is an almost equal split between male and female users. The majority of the users were found to be English speaking and were dispersed almost equally throughout the country. Surprisingly, income did not seem to be a factor that affected Internet usage. This was attributed to people not paying for Internet access and usage costs as they were utilising this service at their place of work. The majority of the users were between the ages of 18 to 50 years of age.

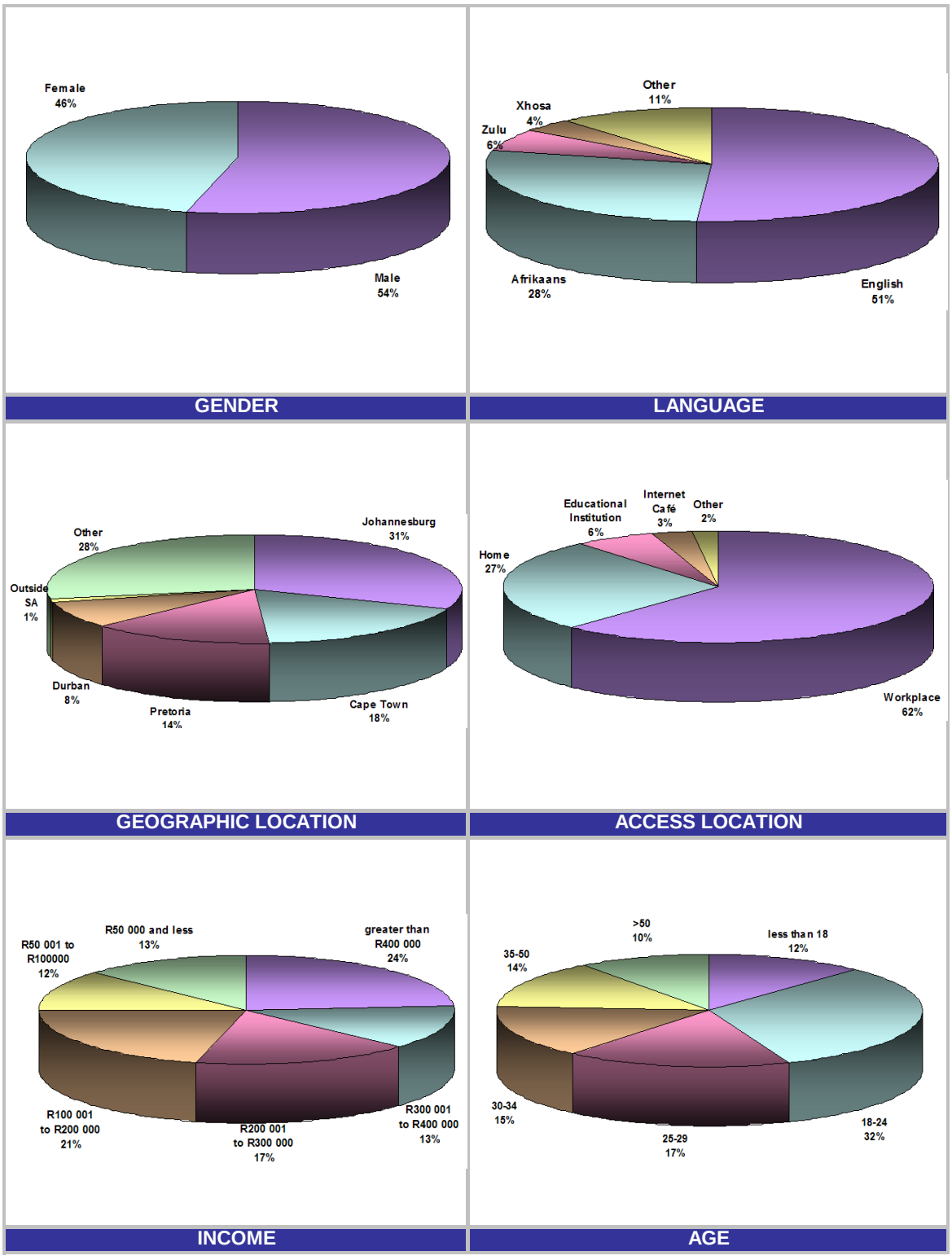

Figure 5: Demographics of the South African Internet User

(Goldstuck 2007b; ITU 2007; Anon 2008a)

2.2.5 *Ecommerce*

According to Modirghomi and Sarshar (2005), ecommerce is defined as the purchase of goods, services or other financial services, in which the channel or medium used is based on digital electronic technology located at different geographic areas.

Narayanan (2006), suggest that the Internet has brought information to homes with a few clicks and in addition, has changed the way in which consumers purchase goods and services. This author further highlights that buyers, when searching for goods, incur opportunity costs of time spent, cost of travel to a store and seller costs such as market research, advertising and sales. It is thus implied by this author that these costs could be significantly reduced by utilising ecommerce. In addition, the suppliers of these products and services could provide greater value to its end users.

2.2.6 *Online Shopping- from Bricks and Mortar to Clicks and Mortar*

According to a study conducted by Takacs and Freiden (1998), Internet usage has shown phenomenal growth and its use transcends into the purchase of products from different product categories. Modirghomi and Sarshar (2005), state that online shopping is a relatively new innovation, which is being rapidly accepted and it allows its consumers the opportunity to purchase products from the comfort of their homes. Takacs and Freiden (1998), suggest that the world is in the information age and that many industries have noticed the opportunity to gain competitive advantage through this marketing channel. Undoubtedly, the manner in which shopping is conducted is changing rapidly, with more consumers starting to use online services extensively, which has slowly started to delve into the regions of grocery shopping as well (Narayanan 2006). According to Cattell et al.(2004), consumers are becoming more accustomed to utilising the Internet as an alternate retail channel. In these authors opinion, the use of ecommerce is becoming a

major channel for shopping which is resulting in many retailers setting up web sites as a channel for transacting.

Bricks and mortar companies can achieve a competitive advantage in the industry in which it operates by utilising financial reserves to obtain the best resources in terms of location, staff and equipment. Thus, in such industries the barriers to entry are high which results in the industry being protected and dominated by a few large companies. With the so called clicks and mortar stores, the barriers to entry are reduced, with the playing fields becoming more even, which allows smaller companies the opportunity to compete (Barnard and Wesson 2003).

2.2.7 *Online Shopping in South Africa*

Barnard and Wesson (2003), indicate that ecommerce and online shopping have mushroomed over the last decade, not only in the US, but to a larger extent in South Africa as well.

In South Africa as at 2007, there are 3,745 126 online shoppers, which is approximately 11% of the South African consumer market (AMPS 2006). This implies that there are a large and continuously increasing number of online shoppers in South Africa, which are already or could be potential customers for an OGSS.

In a study conducted by Cattell et al. (2004), it was shown that the South African shopper generally used online services in the travel, banking and leisure industries as detailed in Table 3, with no respondents using an OGSS. In addition, these authors compared the South African consumer with the UK consumer and it was noticed that the UK consumer used a greater variety of online services, thus implying that this could be evidence of a more sophisticated society.

Table 3: Products/Services Purchased by South African Online Users

(Cattell et al. 2004)

Sector	SA Shopper	UK Shopper
Accomodation and travel services	57%	23%
Banking	68%	9%
Books	5%	37%
Groceries	0%	9%
Music	26%	37%
Entertainment Tickets	36%	0%

According to MWEB (2007), the number of transactions that occurred on their websites increased from 38 902 in 2004 to 241 438 in 2006, which represented a 521% increase. From these transactions airline tickets represented the majority of the transactions and online grocery shopping surprisingly showed a significant increase of 20% over this same period. According to this study, South Africans are becoming more comfortable with purchasing online and are seemingly less concerned with the privacy and security aspects of this service.

The online retail market in South Africa is dominated by the following 12 major players, who combined account for more than 75% of all online retail sales (Goldstuck 2007a):

- M-WEB ShopZone – major mall,
- The eBucks Shop – major mall,
- Digital Planet – electronics store,
- Pick ‘n’ Pay Home Shopping – online grocer,
- Woolworths Home Shopping – online grocer,
- Kalahari.net – online book retailer,
- Exclusive Books – online book retailer,
- Netflorist – online florist,

- Ascot Direct – health and beauty retailer,
- Bidorbuy.co.za – auction site,
- Cybercellar – wine retailer and
- Computicket – events retailer.

2.2.8 *Online Grocery Shopping*

OGSS's first appeared in the American market in the late 1980's and had subsequently spread to various European countries and Australia (Belsie 1998).

Shopping for groceries is perceived to be one of the most boring and least liked tasks. In a study conducted by Corral (1999), with regards to the tasks that people least liked doing, from the 22 household tasks, grocery shopping came in second, after cleaning. This indicates that such consumers would be interested in using a service that could possibly simplify this task. An OGSS refers to selecting and ordering of groceries using the Internet (Hiser et al. 1999). According to Raijas (2001), an OGSS offers an Internet ordering interface, whereby the consumer selects and pays for the products and the retailer is responsible for picking and delivering the product to the consumer. Kurnia (2003), defines an OGSS as the use of a retailers website to purchase groceries by means of a mouse click.

According to Huang and Oppewal (2006), OGSS websites have only managed to capture about one percent of the consumer monthly grocery shopping market in the US. Also in the UK, Tesco, one of the most successful grocery retailers have only managed to achieve less then two percent of its total group sales from the OGSS that it provides (Delaney-Klinger et al. 2003). Both of these studies suggest that although initial predictions indicated that there were huge potential opportunities in this market, up until 2006, such market growth was not realised.

2.2.9 *Online Grocery Shopping in South Africa*

In South Africa, OGSS's were first introduced in 2003 by Pick n Pay and to date there are only three major retailers namely Pick n Pay, Spar and Woolworths who offer an OGSS to selected areas (AMPS 2006).

In a market analysis conducted by Goldstuck (2002), the South African food and beverage market was estimated to be approximately R77.7 billion with the online shopping component being estimated at approximately R24.7 million (0.03%).

According to a further study conducted by Goldstuck (2004b), groceries including food and beverages is the third single fastest growing online retail category in the South African market. In a study conducted by Cattell et al. (2004), to identify the types of products that were being purchased online, approximately 9% of the South African respondents indicated that they purchased some of their groceries online. In South Africa the number of OGSS users are estimated at just over 80 000, which is about 0.2% of the South African population (AMPS 2006).

In a study conducted by AMPS (2006), it was found that a large number of traditional grocery shoppers did not have access to the Internet which is illustrated in Figure 6.

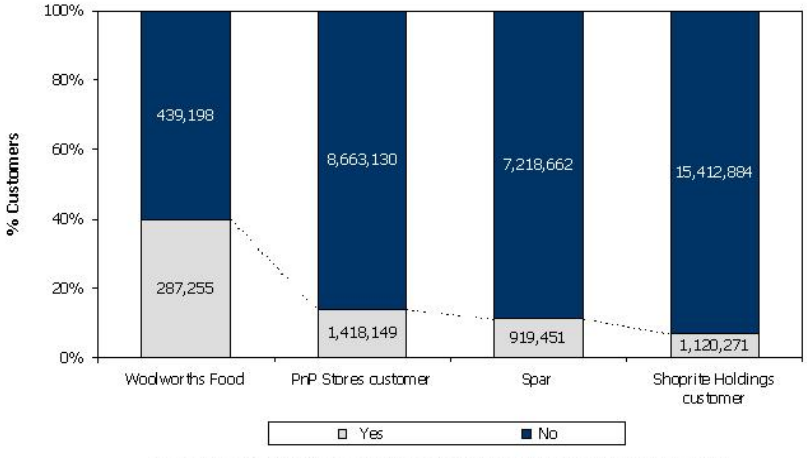

Figure 6: Grocery Shoppers in South Africa that have Internet Access (AMPS 2006)

Although there are currently a relatively small number of OGSS users in South Africa, which could be attributed to the low levels of Internet access amongst traditional shoppers, with the huge increase in Internet adoption it is quite likely that the OGSS market in this country would increase in the future (Goldstuck 2002; AMPS 2006).

2.3 Customer Profiling

Rao et al. (1998), suggest that every company should identify and understand its target market segments to ensure that it provides products and services that would result in sustainable generation of shareholder value.

Morganosky and Cude (2000), proposed that online grocery shoppers tend to be more upscale demographically than the average grocery shopper and tend to be younger with a higher level of education than the general population. The purpose of this part of the literature review is to identify and develop a profile of the potential or most likely consumer that would utilise an OGSS.

2.3.1 *Market Segmentation*

A market segment refers to a group of people that share a similar set of needs and wants with the groups occurring naturally (Kotler and Keller 2006). According to these authors, it is the prerogative of the business to identify the market which it thinks, would be willing to buy and use their products and/or services. In addition, these authors define market segmentation as the task of identifying these target groups of people. Bearden et al.(1995), defines market segmentation as dividing the market into groups of potential buyers who behave or react in a similar manner or have similar requirements. Mullins et al.(2005), further suggest that marketing effectiveness is enhanced by the firms ability to understand who their primary customers are, how they think, where and how they can be contacted and how they purchase good and services.

Lamb et al.(2004), indicate that market segmentation is important for the following three reasons:

- It enables marketers to identify groups of customers with similar needs and to analyse their characteristics and buying behaviour,
- it provides marketers with information to help them design an effective marketing mix that matches the characteristics and expectations from one or more of the segments and
- it is consistent with the marketing concept of satisfying customers needs while meeting the companies objectives.

Target marketing entails evaluating the relative attractiveness of the various segments in terms of market potential and growth in relation to the firm's capabilities to deliver products and services, thus allowing it to choose consumers that are more profitable.

According to Kotler and Keller (2006), there are two broad groups of variables that are used to segment consumer markets; namely:

- *Descriptive Characteristics:* Consumer segments are grouped in terms of geographic, demographic or psychographic characteristics and their responses to questions are analysed with the aim of identifying potential needs or feedback on products or services,
- *Behavioural Characteristics*: Consumer segments are grouped according to similar behaviours and preferences. Research is conducted on these groups to see what characteristics are associated with each of the identified segments.

Mullins et al. (2005), state that in addition to the two groups suggested by Kotler and Keller (2006), segmentation can also be done on the basis of:

- *Psychographic Characteristics:* This is where the population is categorised into certain segments based on their psychological characteristics, values, beliefs and lifestyles (motives, perceptions and attitudes).

2.3.1.1 *Demographic Segmentation*

Demographic segmentation involves separating the market into different clusters or segments using demographical variables such as (Bearden et al. 1995; Lamb et al. 2004; Mullins et al. 2005; Kotler and Keller 2006; Kurtz and Boone 2006) :

- Age,
- family size,
- gender,
- income,
- occupation,
- education,
- religion,
- race,
- nationality and
- social class.

Bearden et al.(1995), state that for consumer marketing, demographic segments and their associated trends and characteristics are particularly important to marketers as it provides valuable information that allows companies to focus on specific high potential target markets.

2.3.1.2 *Behavioural Segmentation*

Behavioural profiling involves dividing the potential consumer market into groups based on their knowledge of, attitudes towards, preferences and responses to a product or service (Lamb et al. 2004; Kotler and Keller 2006). Factors such as usage rate, occasions, time to conduct an activity, access to services, occasions and brand familiarity may exert an influence on the buying behaviour to such an extent that each segment justifies a different marketing approach (Kurtz and Boone 2006). Mullins et al. (2005), state that there is no limitation to the number of ways that marketers can and have segmented markets in terms of behavioural characteristics. In addition, these authors suggest that behavioural descriptors can take many forms, including those based on consumer requirements and expectations and general behavioural patterns, including lifestyle or social class.

2.3.1.3 *Segmentation Strategies*

Bearden et al.(1995), suggest a model that could be utilised for the development of a market segmentation strategy as depicted in Figure 7.

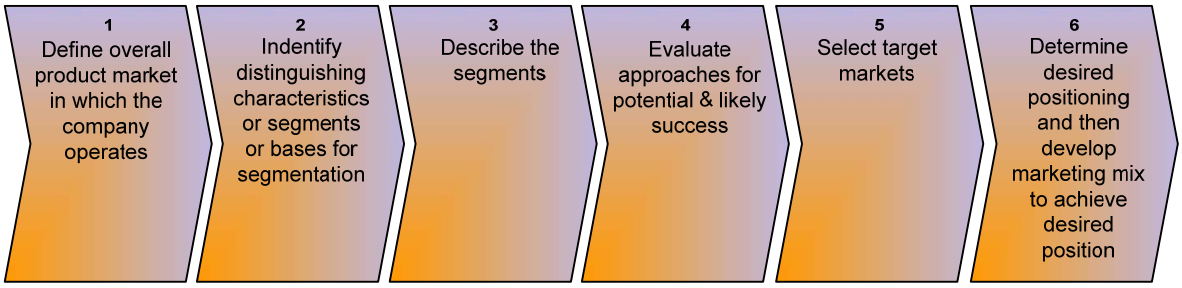

Figure 7: Stages in Developing a Market Segmentation Strategy

Bearden et al.(1995)

According to Mullins et al.(2005), a company cannot operate in and serve all market segments. In order to be successful it firstly needs to clearly define the products and services that it wishes to offer relative to its own internal competencies. This should be followed by a detailed survey, which should be aimed at identifying the consumer segments that has the most potential to be

profitable. Once this exercise is completed, suitable marketing strategies that employ different elements of the marketing mix should be developed to ensure that the desired position is achieved.

2.3.2 *Consumer Segments*

According to Kau et al. (2003), there are six major categories of online shoppers as shown in Table 4.

Table 4: Six Possible Users of an Online Shopping Service

(Kau et al. 2003)

NO	Category Name	Description
1	On-off shopper	People that surf the Internet for information but prefer to by goods in store
2	Comparison Shopper	Those people who contrast product features, prices and brands before making a purchase decision and often look out for promotional offers
3	Traditional Shoppers	This segment only purchase from physical stores. They do not surf the Internet for comparative information and are generally between the ages of 40 to 49
4	Dual Shopper	Such shoppers rely on the Internet to compare brands and product features; however they are not attracted by special prices and promotions. They are normally single males between the ages of 15 to 24.
5	E Laggard	This person has a low interest in seeking information on the Internet and would normally be a female aged 35 and older.
6	Information Surfer	An information surfer enjoys surfing the Internet, looking for promotions and good navigation and purchase experience.

Hiser et al. (1999), identified six potential customer segments for the online grocery market as shown in Table 5 . These authors further suggest that all the people that fall into these categories as shown in Table 5, are potential candidates for online grocery shopping.

Table 5: Six Potential Consumer Segments

(Hiser, Nayga and Capps Jr 1999)

NO	Segment Name	Description
1	Shopping Avoiders	People that generally dislike going to the grocery store and would avoid the experience at all costs.
2	Necessity users	Those people who will go to the store on when it is absolutely necessary (No bread and milk)
3	New Technologists	Young consumers very familiar with technology
4	Time Starved Consumers	Those people who are willing to pay for services so that they have more time for other activities
5	Responsible Consumers	Those who feel the need to do a good job in grocery shopping
6	Traditional Shoppers	Those people who enjoy grocery shopping and do not like using technology

In a study conducted by Rohm and Swaminathan (2004), a cluster analysis technique was employed to determine the potential segments of online grocery shoppers. These authors suggest that there are four characteristic profiles of an online shopper namely the convenience shopper, the variety shopper, the balanced buyer and the store-oriented shopper as described in more detail in Figure 8.

Two further segments that were identified by Morganosky and Cude (2000), were the physically challenged and the elderly groups, which indicated that their physical constraint in getting to the store was the primary reason for them shopping online. This group also indicated that they were even willing to pay for the high delivery charge for the convenience provided by an online service (Morganosky and Cude 2000).

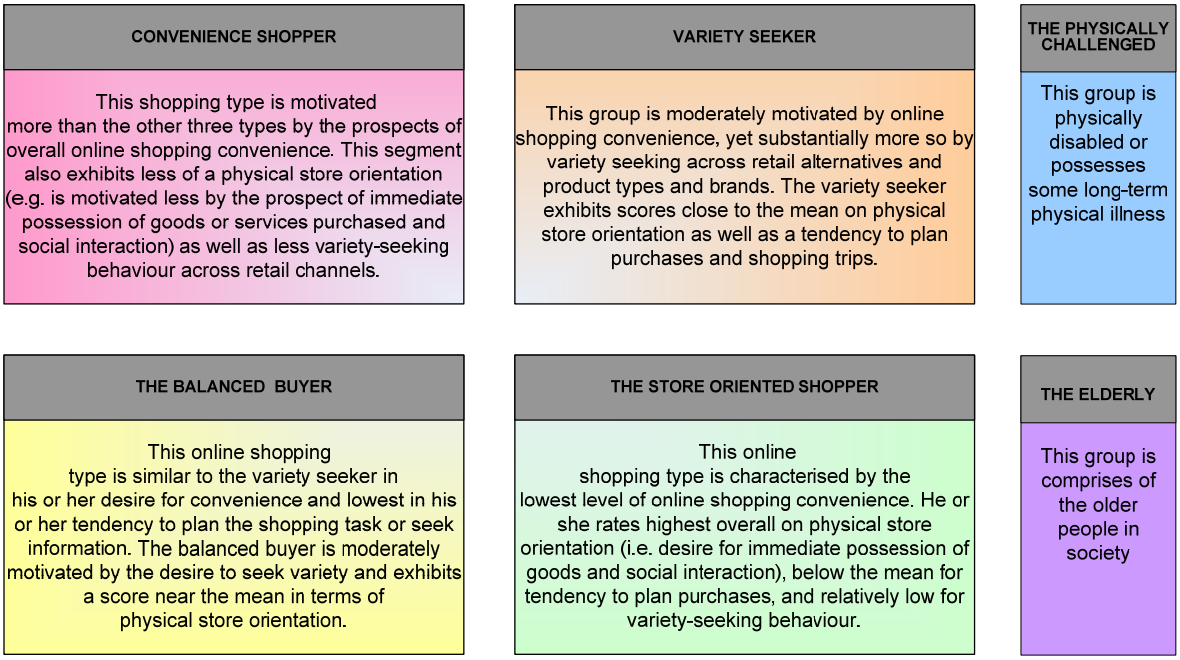

Figure 8: Online Grocery Shopping Types

(Morganosky and Cude 2000; Rohm and Swaminathan 2004)

2.3.3 *Demographic Characteristics of an OGSS User*

Literature on OGSS studies conducted in Australia, the US and other countries were analysed, and important demographic characteristics of a typical OGSS consumer were identified as being (Hiser et al. 1999; Morganosky and Cude 2000; Ferreira 2003; Joines et al. 2003; Berning et al. 2004):

- age,
- gender,
- level of education,
- income levels,
- family size and
- marital status.

a) Age

Morganosky and Cude (2000), categorised online shoppers into two major groups namely the “Hi tech Baby Boomers” referring to the younger generation and the “Older/Physically Challenged” consumers. They suggested that the high-tech baby boomers were interested in online grocery shopping because of the novelty and the older and physically challenged used this service because they had difficulty in getting to the store. In a similar study conducted by Joines et al. (2003), it was found that younger people were more likely to shop online as they were familiar with the technology and therefore would be potential candidates for using an OGSS. Hiser et al. (1999), in their study found a similar result in that the major characteristics of the Australian consumer that was likely to use an OGSS was the consumer’s age.

In a further study conducted by Morganosky and Cude (2002), it was found that the most likely age group for an OGSS was between the ages of 35 to 44 years, with the 34 years and younger group in close second. According to Berning et al. (2004), the ideal OGSS consumer is between the ages of 25 to 44 years. Kau (2003), found a similar result, however this author indicated that a broader age group between the ages of 25 and 44 years, were people that more were likely to utilise an OGSS. Another study conducted in the UK by Ferreira (2003), suggest that that a potential OGSS user is likely to be a younger adult between the ages of 26 to 44 years.

b) Gender

Joines et al. (2003), state that males are more likely to utilise an online shopping service, as they were generally more technologically inclined than females. Berning et al. (2004), estimated that “2 out of 3” online shoppers are more likely to be male. This seems to be problematic for OGSS providers as Dholakia et al. (1995), concluded in their study, that shopping, especially for groceries, was to a large extent still conducted by females. They further indicated that males who did the shopping activity were breaking the gender stereotype and thus, continued doing

this activity to gain recognition from family members. Berning et al. (2004), state that although males generally use the Internet more, the ideal OGSS consumer is still likely to be female. Ferreira (2003), concurs that females are more likely to use an OGSS as they are normally the ones that conduct the grocery shopping activity. This statement is also confirmed by Morganosky and Cude (2002), who found that over 82% of the OGSS users were females. Hiser et al. (1999), contradicts the previous authors, indicating that gender was not a significant factor when determining the level of consumer interest in using an OGSS.

c) Level of Education

Research conducted by Joines et al. (2003), found that in general, shopping online is directly related to the level of education of the consumer. These authors indicate that the higher level of education often results in the individuals obtaining a better job and thus they earn a higher income. In addition, with higher income comes greater responsibilities, longer working hours and thus time becomes a major constraint for such individuals (Kurnia 2003). Morganosky and Cude (2002) and Berning et al. (2004), suggest that the majority of online shoppers were college graduates and their main reason for using an OGSS was the time saving benefit. According to Kau (2003), one of the major characteristics of the group of people that are likely to use an OGSS is that they have some form of tertiary education.

d) Income Levels

In a study conducted by Joines et al. (2003), it was found that consumers in the higher income bracket were more likely to shop online more often, which is attributed to them working more and having less time for mundane activities. Such individuals were found to be more upscale demographically than the average grocery shopper (Kau et al. 2003).

Morganosky and Cude (2000), suggest that higher income consumers were more likely to use the OGSS primarily for time saving and convenience benefits. In addition, these authors indicate that an OGSS would be more expensive, in terms

of delivery and even product costs, however higher income individuals would still utilise such a service as their opportunity cost of shopping was still perceived to be higher. Hiser et al. (1999), in their research, concluded that income was a primary factor in determining the level of consumer interest in using an OGSS.

Morganosky and Cude (2002), found that more than half the OGSS customers in their study, had a household income of greater than $70 000 per annum. Berning et al. (2004), suggest that a consumer that has a combined household income of more than $50,000 per annum, is more likely to use an OGSS. In a further study conducted in the UK by Ferreira (2003), it was found that a typical OGSS user is in the medium to higher income bracket, earning in excess of a £100,000 per annum.

e) Family Size (Number of People and Children per Household)

Hiser et al.(1999), in their research indicate that the number of people living in the household and the presence of children, did not have a significant influence in determining the rate of adoption of an OGSS. However, Berning et al. (2004), suggest that the majority of OGSS users had children and more than 75% of these consumers had more than two adults in the household. Morganosky and Cude (2000), also found that the “mother with children” segment were particular supportive of the OGSS as they could acquire groceries without having to find someone to look after their kids.

According to Kau (2003), the “married with kids” group of people are likely to utilise an OGSS as they generally have less time and thus use this service for its convenience. Morganosky and Cude (2000), found that there was a group of people that indicated that their primary reason for using an OGSS service was due to the presence of children. Ferreira (2003), concluded that a household with more than four people and/or has more than two kids are more likely to utilise an OGSS.

f) Marital Status

In a study conducted by Jayawardhena et al. (2003), the majority of online grocery shoppers were found to be married and used this service for its time and convenience benefits. According to a study conducted by Dholakia et al. (1995), married people are more likely to use an OGSS. The main reason given by these authors is that married people generally have less time available due to family commitments and the presence of children. Thus, they would be looking to save time by using such a service. Kurnia (2003), in an OGSS study conducted in Australia, suggest that the majority (61%) of the respondents that indicated the willingness to use an OGSS were single people, with 35% being married. In a qualitative study conducted in Pretoria, Gauteng (South Africa), Van Staden and Maree (2005), found that 80% of the people that were willing to use an OGSS were married. These respondents indicated that their primary reasons for wanting to use an OGSS was that is would save them time and it allowed them to purchase groceries more easily.

2.3.4 *Behavioural Characteristics of an OGSS User*

Although the demographic profiling of an OGSS consumer is of vital importance, understanding the behavioural characteristics of such users are of equal importance as it provides useful insight that will enhance the demographic profile identified (Hiser et al. 1999). Various previous research in this regard was reviewed and the behavioural characteristic elements of a typical OGSS consumer were identified as being (Dholakia 1999; Hiser et al. 1999; Kau et al. 2003; Kurnia 2003; Berning et al. 2004):

- They have access to a computer with Internet,
- they visit the grocery store quite often,
- they shop at different stores,

- they are the major shopper in the family and
- they spend more time in the grocery store.

a) Access to a Computer with Internet and Frequency of Internet Usage

According to Kurnia (2003), a consumer that has a personal computer or access to a computer with Internet is more likely to use an OGSS, as this is a prerequisite to conducting the online shopping activity. A study conducted in Denmark and Sweden by Torben (2005), found that the person more likely to use an OGSS was one that had access to a computer with Internet and such people used the Internet quite frequently, using this technology daily or at least thrice a week. The reason suggested by this author was that such people were more familiar and comfortable with this technology, which resulted in them having a reduced perception of the associated security and risk aspects of online shopping. Thus, they tended to purchase more items using this medium.

In a study conducted by Cattell et al. (2004), a large number of middle to upper income South African consumers had access to a computer with Internet, and thus were more willing to utilise an OGSS.

b) Frequency of Grocery Shopping

According to Dholakia (1999), the frequency of shopping trips is likely to have an impact on whether a person would be willing to utilise an OGSS as this would potentially result in a time saving benefit. Research conducted by Kurnia (2003), showed that a large number of participants in that survey, purchased groceries more than once a week. The majority of these people indicated that they used the OGSS as it reduced their number of trips to the store, which resulted in them having more leisure time.

c) Shop at the Different Stores

According to Hiser et al. (1999), the extent to which a person purchases groceries at the different stores could potentially affect such a persons decision to use an OGSS. According to these authors, such users who shopped at a number of stores for their groceries would be more willing to use an OGSS as they seek lower prices, greater discounts and/or better value for money.

d) Major Shopper in the Family

Hiser et al. (1999), suggest that the person that is the major shopper in the family is likely to utilise an OGSS. According to these authors, the reason such users would be willing to use an OGSS is that they are the ones that are conducting the shopping activity and try to get this activity completed as quickly and efficiently as possible, so as to have more time available for other activities and relaxation.

e) Spend more Time in the Grocery Store

According to Hiser et al.(1999), there is no conclusive evidence to suggest that a consumer who spends long periods of time in a grocery store is more likely to use an OGSS. Morganosky and Cude (2000), disagree with this statement as their research showed that the perceived time saving benefit of an OGSS was one of the major reasons that a consumer would be willing to use an OGSS. In addition, these authors suggest, that especially with high-income earners, they tend to work longer hours and thus have limited time available. If these users spend a substantial amount of time in queues, they would be more likely to use an OGSS.

2.3.5 *Conclusion of Customer Profiling*

In summary, the literature review suggests that the typical demographical profile of consumers that are likely to use an OGSS are that they would:

- Be younger between the ages of 25 and 44,
- be likely to be female,
- have a higher level of education i.e. have obtained some tertiary education,
- be wealthier and would typically have a net income in access of $50 000 per annum which is approximately R500 000 per annum,
- have a larger family present in the household,
- have children and
- probably be married.

In addition, the literature on consumer profiling also highlights the behavioural characteristics of a typical consumer that is likely to use an OGSS as being:

- they would have access to a computer with Internet access,
- they would visit the grocery store often,
- they would shop at different stores,
- they would be the major grocery shopper in the household and
- they would spend a large amount of time at the grocery store.

2.3.6 *Propositions*

Proposition Number 1: The demographic profile of a South African person more likely to use an OGSS is that they would:

- Be between the ages of 25 and 44,

- be female,
- be more educated,
- earn a higher income,
- have a family in the household,
- have children and
- be married.

Proposition Number 2: The behavioural profile of a South African person more likely to use an OGSS is that they would:

- have access to a computer with Internet,
- visit the grocery store quite often,
- shop at different stores,
- be the major shopper in the family and
- spend more time in the grocery store.

2.4 Adoption of an OGSS

In order for a new product, service or technology to be adopted, one needs to understand the consumers thinking processes and behavioural actions that would contribute to the acceptance or rejection of the offering. With regards to an OGSS, Kurnia and Chien (2003), highlight that the factors that facilitated and prevented the adoption of an OGSS have not been fully explored and understood.

Although there are many benefits for using an OGSS, there is very little evidence to suggest that such a service has been extensively adopted as initially predicted

(Heikkilä et al. 1999). Kurnia and Chien (2003), state that there is no concrete evidence that OGSS's have been extensively adopted by any major country or community. The primary purpose of this part of the literature review is to identify the possible reasons why consumers would adopt or reject an OGSS.

Rogers (2003), proposed a model called the Diffusion of Innovation Model, that identified the factors that could possibly improve the probability of the adoption of a new technology. According to Kurnia and Chien (2003), there are a variety of models that have been developed to investigate, understand and identify the factors that influence technology acceptance and adoption, with the more popular ones being the Diffusions of Innovations Model and the Theory of Reasoned Action model.

Researchers such as Huang and Oppewal (2006), also developed an Online Shopping Preference Model, which identified the factors that could influence a consumers decision to use an OGSS. These authors believed that this model captured the primary reasons that would influence a consumer to adopt an OGSS.

In a further study conducted by Grunert and Ramus (2005), a conceptual Consumers Willingness Model to use an OGSS was developed. This model aimed at identifying the major factors that would convince or persuade a consumer to purchase food using the Internet.

These five models are discussed with the aim of identifying which aspects of each model could be utilised to fully understand and comprehend the reasons why a South African consumer would be willing to adopt an OGSS.

2.4.1 *Models for the Adoption of a New Technology*

a) Diffusions of Innovation Model (DIM)

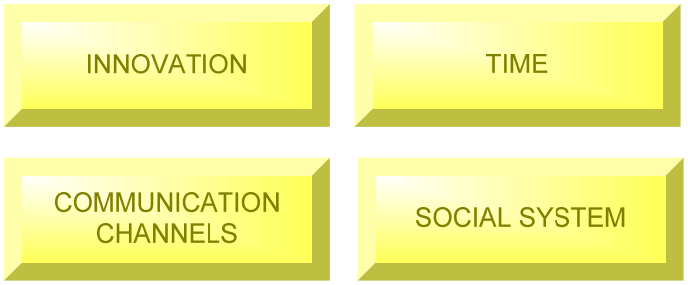

Figure 9: Diffusion of Innovation Model

(Rogers 2003)

Rogers (2003), proposed a model that attempted to understand the reasons for the adoption of new technologies and suggest that the following four elements were present in a diffusion strategy:

- *Innovation* - an idea, practice, or object that is perceived as new by an individual or other unit of adoption,
- *Communication channels* - the means by which messages get from one individual to another,
- *Time* - the three time factors are the innovation-decision process, the relative time with which an innovation is adopted by a group or individual and an innovation's rate of adoption,
- *Social system* - a set of interrelated units that are engaged in joint problem solving to accomplish a common goal.

According to this model, any new technological innovation including an OGSS has a rate of adoption, which is generally characterised by an S-curve as illustrated in Figure 10.

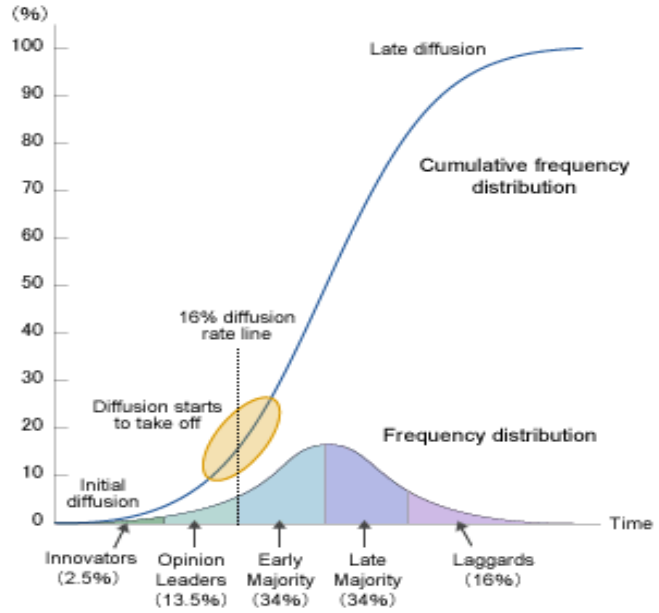

Figure 10: Technology S- Curve

(Tanahashi 2005)

This means that in its infant stage, the rate of adoption is low. However as the technology matures and more users adopt the technology, they start a domino effect by creating a comfort zone that attracts more people to adopt the technology. This results in a high level of adoption up to a point whereby the technology is replaced by a new innovative technology (Tanahashi 2005).

b) <u>The Technology Acceptance Model (TAM)</u>

According to Kurnia and Chien (2003), the TAM has been widely used to assess the adoption of various technologies. In addition, these authors suggest, that this model is critical to understanding the adoption of an OGSS and had modified this model to include three additional constructs namely, Perceived Risk, Visibility and Social Influence. The modified TAM model is illustrated in Figure 11.

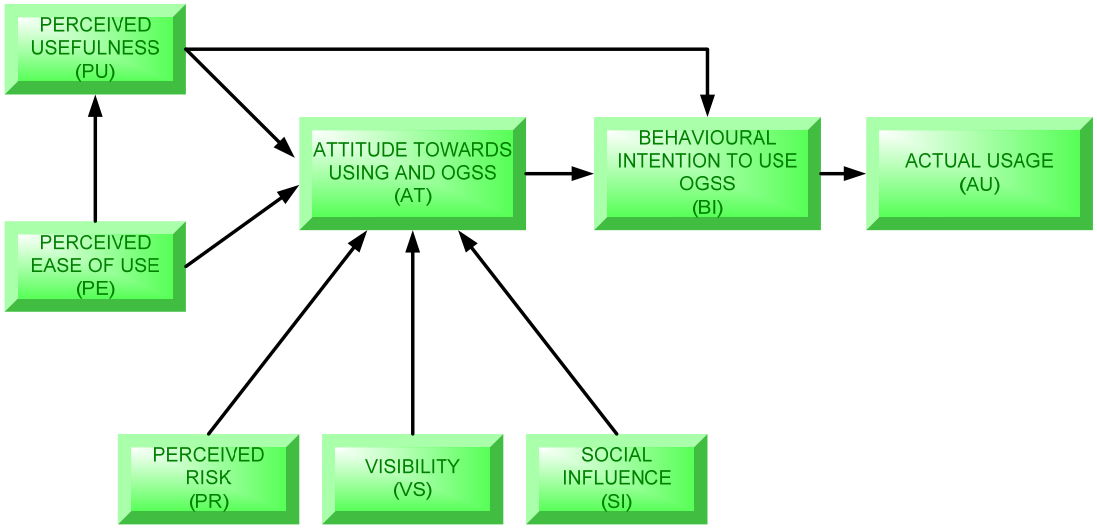

Figure 11: The Technology Acceptance Model of Online Grocery Shopping (Kurnia and Chien 2003)

Perceived ease of use is defined by Kurnia and Chien (2003), as the degree to which a person that is utilising a particular system would be free from effort with regards to:

- Shopping efficiently, that is many tasks can be accomplished by one trip,
- getting the shopping done and
- providing more time for doing other things.

Perceived usefulness is defined by Kurnia and Chien (2003), as the degree to which a person believes that using a particular system would enhance that persons shopping performance in terms of:

- ease of obtaining what you want from the system and
- items are easy to locate and easy to track.

According to Henderson and Divett (2003), as customers of an OGSS become use to the system , their levels of perceived ease of use and usefulness increases, which results in them purchasing more products.

Perceived risk is defined by Kurnia and Chien (2003), as the inherent risk associated with using the products or services and includes aspects such as quality, delivery and security.

These authors describe visibility as the extent to which a non-consumer would potentially adopt a product or service depending on how often they see such a product or service being used or adopted by others.

In addition, Kurnia and Chien (2003), define social influence as the pressure that is exerted by a non-consumers family, friends and colleagues, which results in such a person adopting a specific product or service.

c) Theory of Reasoned Action Model (TRA)

The TRA model is a social/psychology intention model that has been successfully used in predicting and explaining various types of behaviours with regards to the adoption or acceptance of a new technology, product or service (Davis et al. 1989). This model is shown in Figure 12.

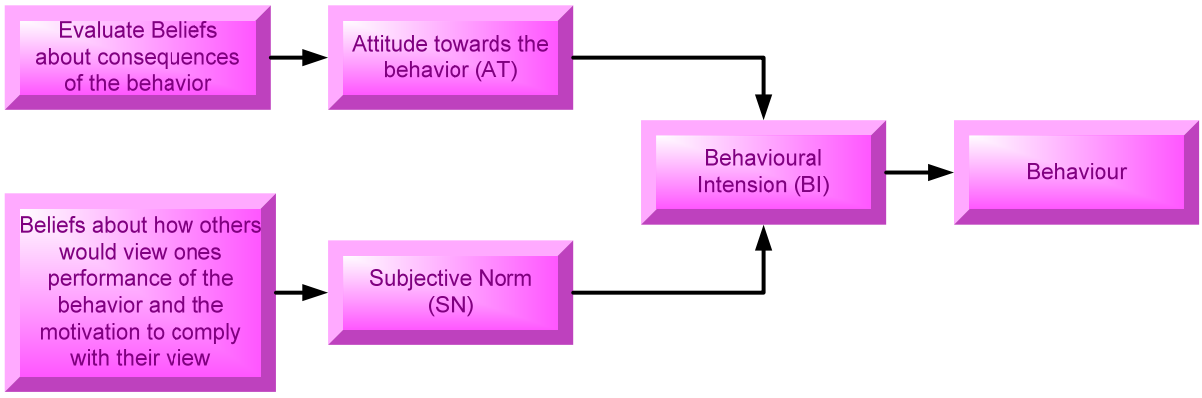

Figure 12: The Theory of Reasoned Action Model

(Davis et al. 1989)

The TRA model suggest that a persons behaviour can be determined by their intension to act in such a manner, which is subsequently determined by the individuals attitude and subjective norms concerning the behaviour (Davis et al. 1989). These authors define the various parameters of the model to be the following:

- *BI:* The degree of a person intensions to perform a specified act,
- *AT:* A person's positive or negative feeling about performing a certain behaviour and
- *SN:* The person's perceptions of what others might think of the behaviour in question.

2.4.2 ***OGSS Models***

a) <u>An Online Shopping Preference Model</u>

Huang and Oppewal (2006), developed a model to characterise the factors that could influence a consumer to use an OGSS. The model they developed identified four factors that they believed to be the most important factors in a consumers mind when conducting a shopping trip. This model is illustrated in Figure 13.

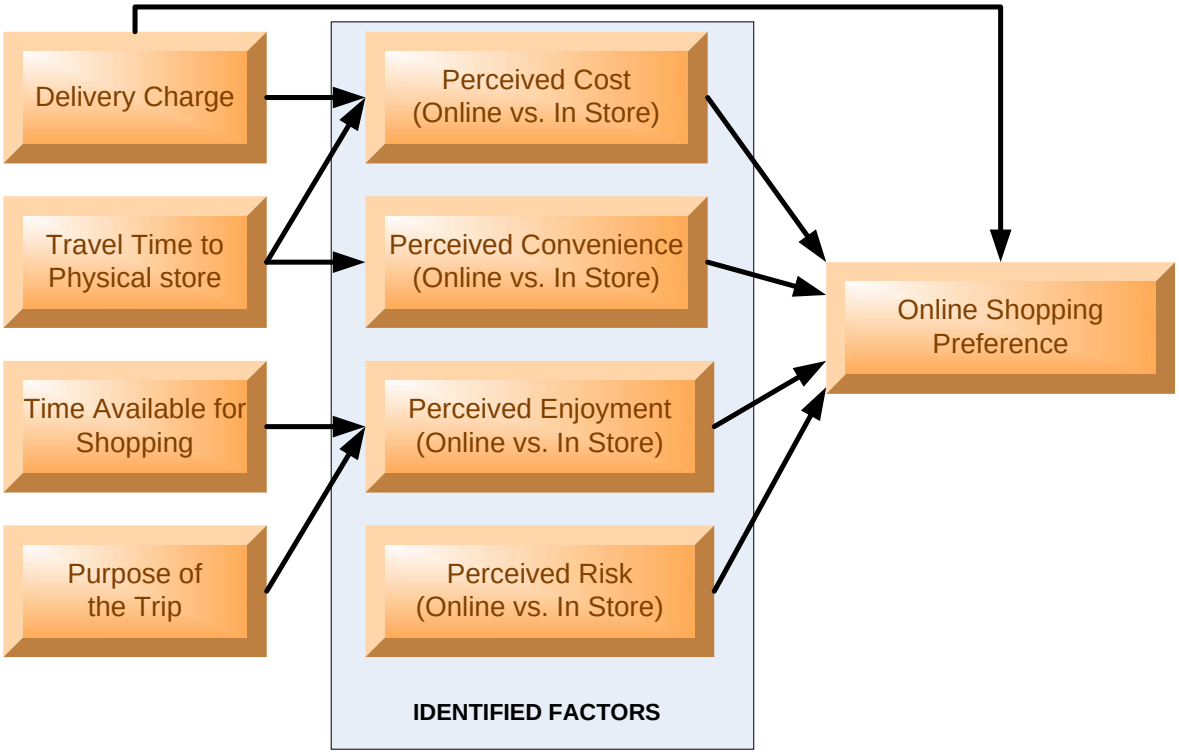

Figure 13: Online Shopping Preference Model

(Huang and Oppewal 2006)

The study by Huang and Oppewal (2006), provided the following conclusions:

- All of the four factors (Perceived Cost, Perceived Convenience, *Perceived Enjoyment, Perceived Risk)* influence the consumer's decision to utilise an OGSS,
- the delivery charge was identified to be a critical factor that directly influenced a consumer's decision to adopt an OGSS,
- the purpose of the trip did not influence the consumer's perceived risk of online shopping vs. in store shopping,
- perceived cost was seen as an order qualifier rather than an order winner,

- perceived risk was found to be an important factor and influenced the intention to shop online for groceries,
- travel time to the store was shown not to be an important factor, however time saving in terms of the actual shopping (selecting, buying and paying activities) was found to be a factor that significantly influenced a consumer to use an OGSS and
- perceived enjoyment was found to influence the perceived convenience factor and thus indirectly influenced the consumers attitude to using an OGSS.

b) A Model of Consumer's Willingness to Buy Food via the Internet

Grunert and Ramus (2005), proposed and tested a model to assess the consumers willingness to purchase food via the Internet, which is shown in Figure 14.

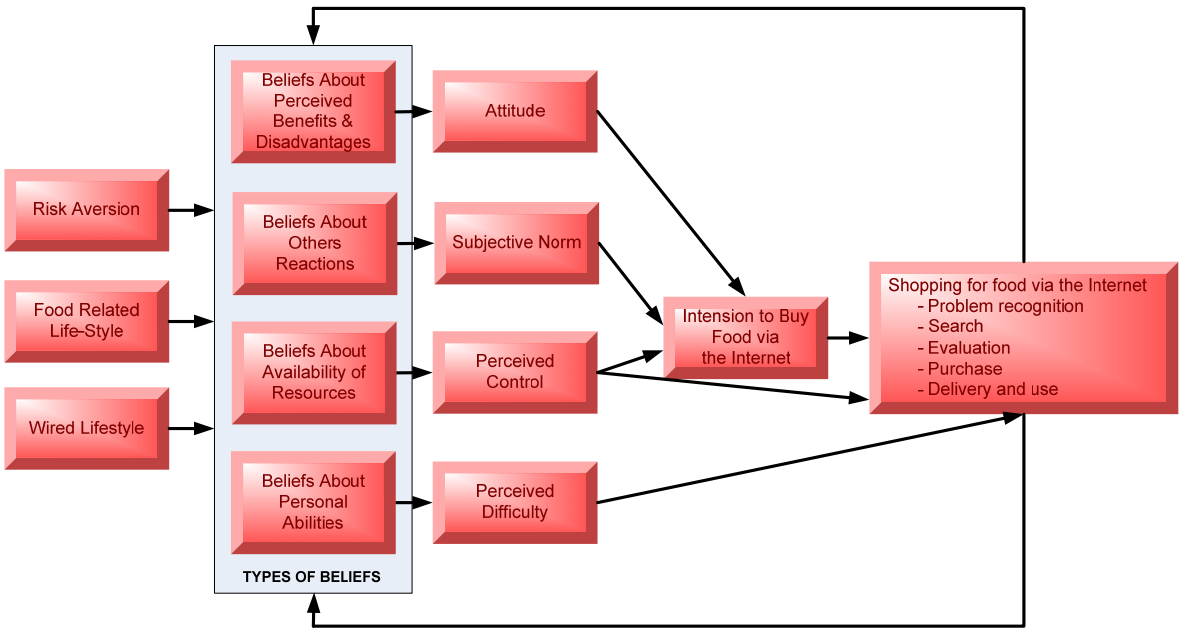

Figure 14: Consumer Willingness Model to Buy Food via the Internet

(Grunert and Ramus 2005)

This model attempted to explain the consumer's intentions to purchase food via the Internet by using four types of beliefs namely:

- Beliefs of perceived benefits and disadvantages,
- beliefs about others reactions,
- beliefs about availability of resources and
- beliefs about personal abilities.

Grunert and Ramus (2005), found that the belief surrounding the perceived benefits was a major factor in influencing a consumer to purchase groceries online. They indicated that there are an increasing number of products that have intangible qualities that could be health or process related. The Internet channel has the means of providing the consumer with significantly more information than normal retailing channels, which is considered to be a major advantage by consumers.

In this study, convenience was found to be a major driver in the adoption of an OGSS. Consumers regarded traditional shopping to be both mentally and physically draining. The combination of Internet purchasing and home delivery was seen to be a huge benefit.

It was found that people with a wired lifestyle (consumers where IT tools are integrated into their lives) have greater beliefs about electronic food shopping and thus are more likely to use an OGSS. However some consumers indicated that they preferred in store shopping as they found it satisfying, enjoyable, fun and rewarding as compared to online shopping (Dholakia et al. 1995).

2.4.3 *Summary of Models and Potential Factors that Affect the Adoption of an OGSS*

From the various models reviewed, it was found that there were certain key factors that influenced the decision of a user to adopt or reject using an OGSS. The summary of these models and the factors identified are depicted in Figure 15.

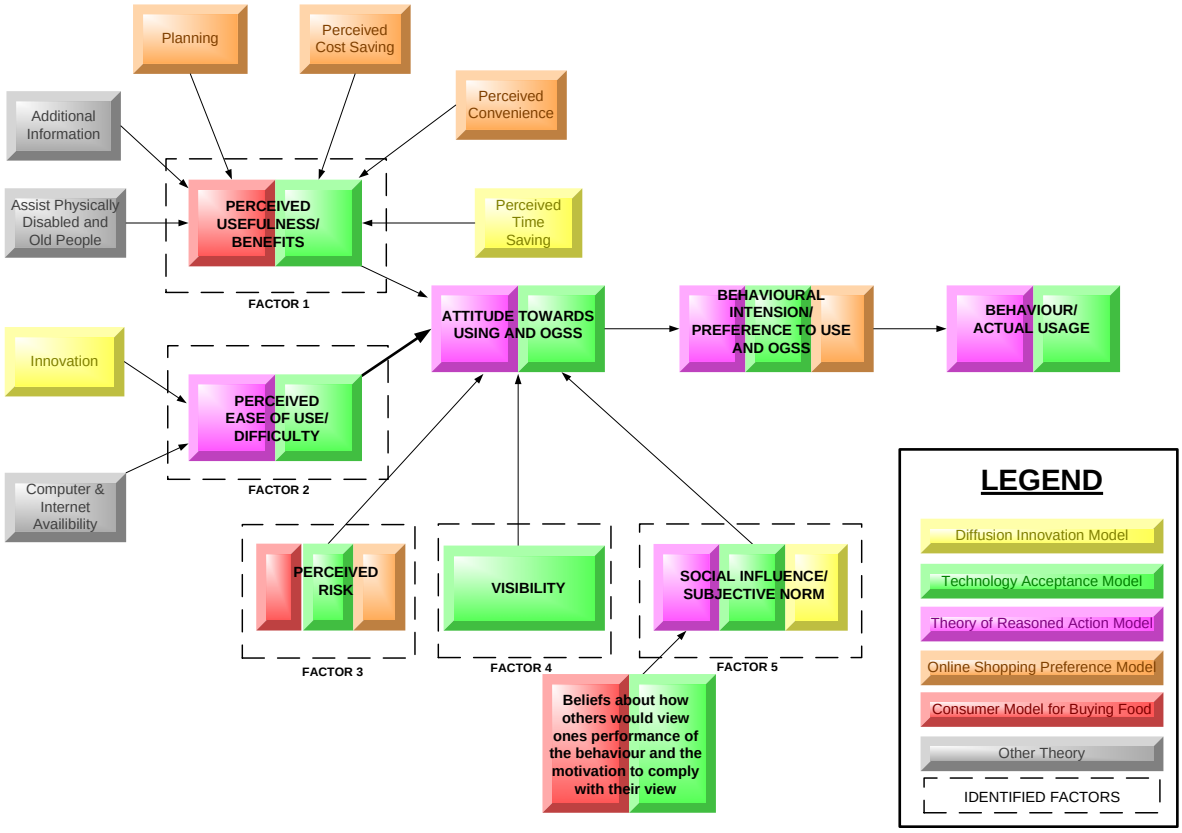

Figure 15: Summary Model of Factors that could Affect the Adoption of an OGSS

As shown in Figure 15, the key factors, which could affect the adoption of an OGSS were identified are as follows:

- perceived usefulness or benefits of the service,
- perceived ease of use,
- perceived risk,

- visibility and
- social influence.

Once the primary factors that influenced an OGSS were identified, a further literature review on these factors were conducted, so as to ensure that there was consensus amongst other authors that these factors were valid potential influencers of an OGSS.

2.4.3.1 *Perceived Usefulness or Benefits of an OGSS*

Morganosky and Cude (2000), concluded that consumers that use an online grocery service expect good personal service, at a reasonable cost with timely delivery, reduced stock out and minimal errors. In order for a company to ensure that they are successful in this market space, they need to ensure that they are perceived to be providing significant benefits (Delaney-Klinger et al. 2003). Hoyer (1984), suggest that the behaviour of a consumer is habitual, automatic and normally routine. This implies that consumers make such purchases based on earlier experiences, which is normally attributed to some or other benefit. OGSS research in other countries found that the primary benefits identified by users were the perceived time saving, convenience, cost saving, additional information and planning benefits (Morganosky and Cude 2000; Delaney-Klinger et al. 2003).

a) Perceived Time Saving

Joines et al. (2003), state that shopping online is directly related to the perceived benefits of saving time, as consumers believe that this channel offers a much faster and more effective method for purchasing goods and services. According to Kinsey and Senauer (1996), retailers can create value for their customers by providing a service that has a major time saving benefit.

Morganosky and Cude (2000), found that the majority of consumers surveyed indicated that an OGSS saved them a significant amount of time, however a large

percentage (21%) said that shopping online was no different from shopping in stores. These authors suggest that the real time savings came in the form of a decrease in shopping time rather than the time saved travelling to and from the store. Huang and Oppewal (2006), suggest that an OGSS provides consumers with a major opportunity to save time.

b) Perceived Convenience

Morganosky and Cude (2000), concluded in their research that convenience was the most important reason for using an OGSS. As compared to in store shopping, online shopping offers a greater deal of convenience (Huang and Oppewal 2006).

According to Kurnia (2003), the majority of respondents in their research indicated that they would use an OGSS to eliminate the following problems normally encountered with the traditional method of grocery shopping:

- Waiting in long queues to pay,
- narrow aisles and congestion,
- difficulty in finding items,
- slow service,
- empty shelves and
- difficulty in shopping with children.

Wilson and Reynolds (2006), state that the benefits offered by an OGSS can be eroded by a poor Internet interface, badly planned warehouse/store operations and poor physical product flow from warehouse/store to consumer. They indicate that this could leave the consumer with a sense of inconvenience, which would change a user's perception of the benefits of using an OGSS. Joines et al. (2003), concurs that shopping online is positively related to the perceived benefits of convenience. In another study conducted within South Africa by Cattell (2004), approximately

70% of the respondents indicated that the primary reason that they would purchase products online was because of the convenience benefit.

c) Perceived Cost Saving

Degeratu et al.(2000), suggest that price has a smaller impact on consumers choices of using an OGSS as compared to traditional “bricks and mortar stores”. Joines et al. (2003), indicate that consumers believed that an OGSS would save them cost, not necessarily from the direct cost associated with the product or travel, but rather the opportunity cost of time. Morganosky and Cude (2000), found that what they termed the high-tech baby boomers felt that the convenience of the service justified the delivery fee. However, the older group found it difficult to justify the high delivery fee (approximately $8 to $10 per delivery). This would be logical as generally older people have more free time and generally less funds available. Thus, they would not be willing to pay for what they perceived to be a high amount for such a service (Delaney-Klinger et al. 2003).

Consumers in South Africa indicated that after convenience, the cost saving of purchasing products online was the reason why they would use an OGSS (Cattell et al. 2004).

d) Planning

In a study conducted by Morganosky and Cude (2000), it was revealed that consumers that participated in that survey, indicated that they were able to better plan their grocery lists. These users indicated that an OGSS provided a means for checking recipes or cupboards for needed items while shopping and they were also able to keep track of the running total while they shopped. This allows the user to ensure that the shopping costs do not exceed the budgeted amount (Morganosky and Cude 2000). In addition, a consumer could be in front of their grocery cupboard or pantry while shopping online and thus would easily be able to recognise what products were required (Delaney-Klinger et al. 2003). Hiser et al.

(1999), state that if delivery of products could be done at regular intervals, it would provide some level of perceived benefit. The reason being that a normal working consumer would quickly and easily have the groceries ordered and delivered on the day, ready to be cooked for that evening's dinner.

Heikkilä et al.(1998), suggest that an OGSS can provide the consumer with more value added services particularly in planning related tasks. For the retailer, such a service provides the capability to collect information on consumer habits, purchasing history and frequency, which could promote closer customer relationships. In addition, retailers can reap significant benefits from an OGSS, as it should allow them to reduce operational costs by using personnel more efficiently and possibly simplify its building infrastructure (Palmer et al. 2000).

e) Additional Information and Other Benefits

Joines et al. (2003), state that shopping online is directly influenced by the amount of useful information that can be obtained. These authors further suggest, that if ingredient information in a product or alternative healthier products, which contains less fat or are organic, is made available to a consumer during an OGSS session, then this would increase such a user's level of perceived benefit.

Other benefits that were suggested by consumers were a more peaceful shopping experience, a much easier means for comparative shopping, improved ability to monitor total expenditure and it also provided a basis for better meal planning (Morganosky and Cude 2000).

f) Old and Disabled and People

In a study conducted in Finland by Heikkilä et al. (1999), it was found that grocery retailers had recognised that the elderly and disabled were potential users of the OGSS. The primary reason being that these groups of people have physical limitations to purchasing groceries via the traditional method, thus such a service would provide a convenient solution (Heikkilä et al. 1999). According to these

authors, one limitation to getting this group to use such a service is that such people, especially the elderly are not familiar with the Internet and thus would find difficulty in purchasing groceries using this channel. In a study conducted by Schuster and Sporn (1998), in the city of Vienna, Italy, the elderly and disabled people were to a large extent dependent on helpers to assist them with their daily activities, which included cooking, cleaning and grocery shopping. These authors suggest that an OGSS had the potential to not only save this group of people some cost but also allowed them to see other new products or items which they might have not known about. Raijas (2002), concurs with this sentiment stating that elderly or disabled people who depend on others to do their shopping, could realise the benefits of accessibility to shopping services, access to a broader selection of products and better financial control, which is offered by an OGSS.

2.4.3.2 *Perceived Ease of Use*

According to Hiser et al. (1999), the primary factor that will enable the success of an OGSS is the widespread perception of the ease of use of computers. In order for an OGSS to be successful, the service to be provided must be easily accessible as well as easy to use (Morgan 2000). Consumers who would normally shop in store indicated that if they chose to shop online for groceries, they would want the interface to be easy to use, with extensive use of pictures and graphics that would provide the same look and feel as a normal “bricks and mortar store” (Morganosky and Cude 2000). Consumers requested that items be organised in aisles and brands should be shown side by side in OGSS websites, so that users can check and compare brands or new possibly cheaper or better value offerings. Huang and Oppewal (2006), state that many users were apprehensive about using an OGSS as they perceived it to be difficult to use as compared to walking into a normal retail store and making a purchase. Morganosky and Cude (2002), found that a key reason for consumers discontinuing the use of the OGSS was due to slow performance from the OGSS system. These authors found that some consumers after having a bad experience with the OGSS, tended not to use it again.

2.4.3.3 *Perceived Risk*

Dowling and Staelin (1994), define risk as the uncertainty and adverse consequences of purchasing a product. According to Forsythe and Shi (2003), there are essentially four types of perceived risk that were most prevalent amongst online shoppers, namely:

- *Financial risk:* Consumers are concerned with the misuse of credit card information,
- *Product performance risk*: Consumers are concerned with the loss incurred when a brand or product does not perform as expected,
- *Psychological risk:* This refers to the negative feelings that could be experienced by a consumer if ones personal information was disclosed and
- *Time/Convenience risk*: This is the risk associated with the loss of time that could be incurred or the inconvenience that could be experienced due to difficulty in navigation, finding sites or delays in receiving goods.

Morganosky and Cude (2000), found that consumers were concerned with the security aspects of the service where credit cards were used online and a stranger delivered the goods to their home. However, consumers who generally shop online for groceries do have other online shopping experiences in terms of buying other products and thus are becoming more comfortable with using this channel (Huang and Oppewal 2006). Forsythe and Shi (2003), suggest that online shoppers are aware of the security issues with online shopping and thus online privacy and security is not seen to be a major issue. However, many consumers believe that shopping for groceries online increased their level of risk or exposure to unscrupulous criminals and this was found to be one of the major barriers to a rapid adoption of this service (Schuster and Sporn 1998). In support of this, Joines et al. (2003), state that shopping online is perceived to increase a persons

vulnerability and such a service like any other online service is negatively impacted by the high level of credit card fraud.

According to Barnard and Wesson (2003), a substantial number of Internet users have major concerns with regards to privacy on the Internet and thus would not be willing to use an OGSS. These authors further suggest that the primary obstacle to continued growth in the online shopping market is that of winning public trust.

Within the South African context, the primary reason that deterred South African consumers from using an online shopping service was the fear of fraud in that they did not believe that credit card transactions were secure (Cattell et al. 2004).

Cattell et al.(2004), indicate that a greater number of South African consumers would be willing to utilise an online shopping channel (see Table 6) if they were more confident of credit card security. From this table it is also evident that the greatest potential for growth in the online market lies in the grocery sector.

Table 6: Potential Growth for Online Shopping In South Africa

(Cattell et al. 2004)

Sector	No of Respondents Currently Buying Online	No of Respondents that are willing to Buy Online	Growth Potential
Accomodation and travel services	71	150	211%
Banking	84	103	123%
Books	6	38	633%
Groceries	1	37	3700%
Music	32	66	206%
Tickets (entertainment)	44	79	180%

Modirghomi and Sarshar (2005), suggest that some consumers prefer to visually inspect groceries before purchasing it so as to ensure that they are getting the correct quality, size and brand. In a study conducted by Kurnia and Chien (2003), consumers indicated that they were willing to purchase certain grocery items such as tin food, box food, household detergents and personal hygiene products.

However, for certain foods such as fresh produce, meat and poultry, they preferred to visually inspect the products before purchase.

Home deliveries may improve the convenience factor of OGSS, however there is a inherent perceived risk of criminals gaining access to the home (McKinnon and Tallam 2003). In addition, these authors suggest that theft can occur at various points in the supply chain, thus robust and secure logistical systems would need to be employed and implemented by companies that hope to achieve success in this market segment. McKinnon and Tallam (2002), state that theft in the supply chain would affect the timous delivery of the products, which is seen to be an order qualifier for an OGSS.

2.4.3.4 *Visibility*

The visibility aspect of products was seen to affect a consumers attitude to purchasing groceries online and was found to be an important aspect that influences a consumer decision to use an OGSS (Kurnia and Chien 2003; Ramus and Nielsen 2005). Grunert and Ramus (2005), suggest that online shopping and in particular online grocery shopping, is like many other services offered in that the more people see others using such services, the more likely they are to adopt such a service.

2.4.3.5 *Social Influence*

Kurnia and Chien (2003), found that a major factor that influenced a consumer to use an OGSS was the social influence of people that surrounded them. They found that if a consumer's superiors, co-workers or relatives believed that an OGSS was useful and beneficial, then that consumer would possibly accept these people's opinion and use such a service. Joines et al. (2003), suggest that shopping online is directly related to social motivation and once the influential people in society start using such a service, they are likely to persuade their peers or relatives to start using this service.

2.4.4 *Conclusion of the Factors that Influence the Adoption of an OGSS*

The various technology acceptance and OGSS models were discussed and the factors that could potentially influence the adoption on an OGSS in South Africa were identified. The common factors were then further investigated to check their validity.

The perceived benefit factor that encompassed various aspects was found to be an aspect that could positively influence the adoption of an OGSS in South Africa.

In terms of the perceived ease of use, it was found that with any new technology, if the consumer believed that the medium or technology was easy to use, they would potentially use the product or service.

It was also found that the perceived risk of using an OGSS, its visibility and the effect of social influence could possibly affect a users attitude and their subsequent intension to use the OGSS.

It was thus concluded, that the following five common factors could influence the decision of a user to adopt an OGSS:

- perceived benefits or usefulness of the service,
- perceived ease of use,
- perceived risk,
- visibility and
- social influence.

2.4.5 *Proposition*

Proposition Number 3: The following factors are likely to affect the adoption of an OGSS:

- perceived benefits/usefulness,
- perceived ease of use,
- perceived risk,
- visibility and
- social influence.

2.5 Conclusion of the Literature Review

Certain key demographic and behavioural characteristics of a potential South African OGSS user were identified. It was found that the most likely consumer segment that should be targeted, would be the young, working class that earn a high income, are well educated, married with a large household and have a few children. These individuals are looking for convenient and easy ways to purchase their groceries, so that they can have more time available for other more important aspects of their lives, like spending quality time with their family.

It was further concluded that the perceived benefits/usefulness, the perceived ease of use, the perceived risk, the visibility of the service and the social influences had a major role to play in determining whether a South African consumer would user an OGSS.

2.6 Propositions to be Tested

The propositions that were developed from the literature review process were stated in their respective sections and are restated in this section for clarity and completeness.

Extensive research has been conducted primarily in first world countries with regards to the profiling of potential users of an OGSS. In addition, various studies have been conducted to identify the consumer's reasons for adopting or rejecting such a service, however, much of this research has been conducted in overseas countries. Thus profiling the potential users and their reasons for using such a service within the South African context, would attempt to fill the current void in this area of study, which justifies the following propositions:

Proposition Number 1: The demographic profile of a South African person more likely to use an OGSS is that they would:

- Be between the ages of 25 and 44,
- be female,
- be more educated,
- earn a higher income,
- have a family in the household,
- have children and
- be married.

Proposition Number 2: The behavioural profile of a South African person more likely to use an OGSS is that they would:

- have access to a computer with Internet,

- visit the grocery store quite often,
- shop at different stores,
- be the major shopper in the family and
- spend more time in the grocery store.

Proposition Number 3: The following factors are likely to affect the adoption on an OGSS:

- perceived benefits/usefulness,
- perceived ease of use,
- perceived risk,
- visibility and
- social influence.

CHAPTER 3: RESEARCH METHODOLOGY

The primary purpose of this research was to determine the profile of the South African consumer that would potentially utilise an OGSS and to identify factors that would promote or hinder its adoption in the South African market.

This section of the document describes the research approach and process that was used for this descriptive study. In addition, the questionnaire design, the data collection methods, the sampling methods, the data analysis tools and the methodologies are discussed.

3.1 Research Paradigm

3.1.1 *The Type of Research*

There are three basic types of research (Cooper and Schindler 1998):

- *Exploratory Research:* This type of research is used to define concepts clearly or establish priorities and is generally used when the area being investigated is new, is vague or where important variables are not known,
- *Descriptive Research:* This method is used when trying to determine the facts with regards to a topic by formulating propositions or hypotheses about the size, form, distribution or existence of a variable and
- *Causal Research:* Such a type of research is used to determine the effect that one variable has on another.

This study was classified as descriptive research as the propositions were developed with the aim of determining the profile of the South African consumer that would potentially use an OGSS. In addition, this research aimed to confirm whether the factors that were identified in the literature review were relevant and applicable within the South African context.

3.1.2 *The Quantitative Approach*

According to Modirghomi and Sarshar (2005), quantitative research methods relies on the measurement and analysis of statistical data to determine the relationships between one set of data and another, to possibly produce a quantifiable conclusion. This study was regarded as quantitative research as a questionnaire was used to gather consumer data, which was analysed and interpreted using descriptive graphs and a confirmatory factor analysis.

3.2 Research Design

Zikmund (1997), describes research design as a blueprint or framework that details the various methods or procedures for “collecting and analysing” the information required to answer the research problem. Leedy and Ormrod (2001), state that the research design is a critical aspect to the overall success of the research project. These authors further suggest that using such a method ensures that the intended objectives are achieved.

A survey is a research technique that is used to collect data from a sample population by means of a questionnaire (Zikmund 1997). Three methods namely; emailed, self-administered and web based structured questionnaires as shown in Appendix 1 was used as the survey instruments to collect cross sectional sample data from South African consumers. Leedy and Ormrod (2001), state that using a survey assists in understanding the phenomena that is occurring in the present

situation and is useful when the researcher is trying to obtain information from respondents from various geographic locations.

The reason for using a survey was to try to obtain data from a representative sample of the South African population, which are located in different physical areas.

a) Advantages

Leedy and Ormrod (2001), state that questionnaires are advantageous in that the survey participants can be assured of confidentiality and thus are more likely to be truthful in their responses. Surveys provide an accurate, speedy, cost effective and efficient method for obtaining information about a population (Zikmund 1997; Cooper and Schindler 1998). For this study, personal information was requested and thus the survey instrument ensured the confidentiality and anonymity of the respondents.

b) Disadvantages

Surveys are limited in that they do not provide a deeper understanding of a respondent's opinions and/or misunderstandings which cannot be clarified (Dane 1990). Some of the disadvantages of using survey questionnaires are the response rate from questionnaires sent are usually poor and the data can be biased based on the participants levels of comprehension and understanding (Leedy and Ormrod 2001). In order to improve the response rate, a web-based questionnaire was also developed as shown in Appendix 2, which made it simple and easy for a respondent to complete the survey.

According to Zikmund (1997), in any type of survey research that is conducted there are errors that will be present as discussed in Table 7 .

Table 7: Errors in Using a Survey

Zikmund (1997)

Category	Type	Description
Survey Research Errors	Random Sampling Error	Most surveys try to portray a representative cross section of a particular population, however due to a variation in the elements selected in the sample, statistical errors will occur.
	Systematic Error	Errors that result from some imperfect aspect of the research design such as mistakes in recording responses and sample bias (results tend to deviate from the true value of the population parameter).
Respondent Errors	No Response Error	The statistical difference between a survey that includes only those who responded and a survey that includes those who failed to respond.
	Response Bias	Errors that occur when respondents tend to answer questions in a certain direction.
Administrative Errors	Data Processing Error	Errors that occur because of incorrect data entry, incorrect computer programming or other errors during the analysis phase
	Sample Selection Error	Errors caused by improper selection of sample, which introduces bias
	Interviewer Error	Errors due to the failure of an interviewer to perform the tasks correctly.

Although sampling errors are present in all survey research, by conducting surveys at various grocery stores and via the web and email, one hoped to reduce the effect of this type of error by obtaining a representative sample of the population. In order to mitigate against systematic error, two people were used to conduct each of the self-administered questionnaires and the responses collected were then compared to ensure that there were no recording errors. The response error for this survey was considered not to be of critical importance and was thus ignored. Since a validated questionnaire was used, there was no possible presence of response bias error, as respondents were limited to a set of answers. The use of web-based surveys ensured that data processing error was reduced as the responses were stored directly in an electronic database and not entered manually. Emailed and self-administered responses were entered by one person and checked by a second person to ensure that a high level of data integrity was maintained. The potential for interviewer error arose from the self-administered questionnaires, which was mitigated by having two people conducting each of the self-administered surveys, thus ensuring that the questions were asked and interpreted correctly.

3.3 Population and Sample

3.3.1 *Population*

Steyn et al.(2007), define a population as the entire group of people or elements that relates to the study. Zikmund (1997), concurs that a population is a complete collection of entities that are under investigation, however this author further suggest that these entities share a set of common characteristics. In addition, Davis and Cosenza (1985), indicate that the population defines the finite or exhaustive group that could be included in the research.

For the purposes of this study, the population is defined as any person within the borders of South Africa. The possible respondents could potentially be any ordinary person in South Africa that does grocery shopping.

3.3.2 *Sample and Sampling Method*

Albright et al. (2006), define a sample as a subset of the population, that is generally chosen to be as closely representative of the population as possible. The researcher utilises the information from the sample to infer or make a generalisation of the population (Steyn et al. 2007).

A probability sample is one where each element in the population has a known chance of being selected. There are essentially four types of probability sampling procedures namely (Steyn et al. 2007):

- *Simple random sampling*: If an element in a population has not been included in a sample, it has an equal chance of being included in the next sample selection,

- *Stratified random sampling*: This involves dividing the population into subgroups and drawing a simple random sample from these subgroups,

- *Systematic sampling:* This involves calculating the ratio of sample size to population and using a circular method of systematic sampling and

- *Cluster sampling:* This involves dividing the population into natural subgroups or clusters and randomly selecting a few clusters.

For the purposes of this research, stratified random sampling was used, whereby the population was divided into income, student, work and social groups. The self-administered questionnaires were conducted at three different income (low, medium and high) areas. In addition, the links to the web based and emailed questionnaires were sent to people selected randomly from the Wits Business School student database (student group), the Rand Water company employee address list (work place group) and the Facebook website (social networking group) database.

According to Zikmund (1997), three factors are needed to specify a sample size namely variance or heterogeneity of the population, magnitude of error and confidence level.

For this study the following values were use to determine the sample size

- *Variance or heterogeneity of the population:* For this study, it was assumed that 80% of the South Africans that were employed would use an OGSS. Using an employment figure of 36% (Anon 2008b),

$$\overline{P} = 0.36x0.8 \approx 0.29 \text{ ---------- (1)}$$

- *Magnitude of the error:* As this study did not have to provide a precise estimate of the potential OGSS users, a larger error of 10% was tolerated, thus E = 0.1 and

- *Confidence level*: A confidence level of 95% was utilised for this study, thus Z = 0.1.

Using equation 2 below (Zikmund 1997), and substituting the values stated above, the calculated sample size was, *n* = 79, thus for this study a sample size of 80 was utilised i.e. 80 questionnaires were required.

$$n = \frac{Z^2 \overline{P}(1-\overline{P})}{E^2} = \frac{(1.96)^2(0.5)(1-0.36)}{(0.1)^2} \approx 90 \text{ ---------- (2)}$$

Where:

n = Sample Size

Z = Confidence Level

$\overline{P}$ = Variance of Heterogeneity

E = Maximum allowance for error

3.3.3 ***Limitations***

- One of the major limitations of this research was the lack of previous such studies in South Africa that pertained to OGSS's and

- a further limitation was that the most current literature was not used due to the financial cost of the journals and the limited agreements that the business school library had with the electronic journal source providers.

3.4 Procedure for Data Collection

A tri prong approach was employed to collect data, to ensure that a representative sample of the South African population was obtained, namely:

- Self-administered questionnaires at major grocery retailers,
- online web based-surveys and
- emailed surveys.

3.4.1 *Self-administered Survey at Grocery Retailers*

The developed questionnaire as shown in Appendix 1 was used to collect data from customers entering or leaving a physical grocery retailer. The surveys were conducted at the grocery stores as it was thought that people who were involved in the grocery shopping activity were more likely complete the survey. Six grocery retailers were chosen in areas where there was a likelihood of getting responses from different income brackets. Prior to conducting the survey, permission was obtained from the managers of these stores. The following grocery retailer stores were identified as places to conduct the survey:

- Pick n Pay – Norwood (high income suburb),
- Pick n Pay – Hyde Park (high income suburb),
- Pick n Pay – Lenasia (medium to high income),
- Pick n Pay – Southgate (middle to low income),
- Pick n Pay – Soweto (low income) and
- Pick n Pay – Highgate (low income).

The survey was conducted by randomly selecting grocery shoppers at the various stores and getting them to complete the questionnaires. Two people were used to administer each questionnaire to minimise interviewer error. When completed, the questionnaires were inserted into a sealed box to ensure confidentially of the information collected.

3.4.2 *Online/Web Based Survey*

The web based questionnaire was developed (see Appendix 2) and posted on the web portal http://www.esurveyspro.com, which allowed potential respondents to complete the survey online, click on a save button and the data was captured into an electronic database file. Wits Business School, Rand Water and Facebook address lists were utilised to select respondents. Electronic mail was sent to people randomly selected from these lists, asking them to participate in the survey.

3.4.3 *Email Survey*

The developed questionnaire as shown in Appendix 1 was emailed to people whose names were randomly chosen from the Wits Business School, Rand Water and Facebook address lists obtained. These responses were manually entered into the web based survey portal.

3.5 Data Presentation and Interpretation

3.5.1 *Profiling of Potential Users*

Descriptive pie charts and cumulative graphs were used to describe, analyse and interpret the data collected for the demographic and behavioural profiles of the people that would most likely utilise an OGSS. Table 8 below details the type of descriptive charts and graphs that were used for each of the different parameters.

Table 8: Charts Used for Demographic and Behavioural Profiling Parameters

	Parameter	Chart Type
Demographical	Age	Pie Chart and Cumulative Graph
	Gender	Pie Chart
	Income levels	Pie Chart and Cumulative Graph
	Level of education	Pie Chart and Cumulative Graph
Behavioural	Married	Pie Chart and Cumulative Graph
	Have Children	Pie Chart and Cumulative Graph
	Presence of family	Pie Chart and Cumulative Graph
	Have access to a computer	Pie Chart
	Visit the grocery store quite often	Pie Chart and Cumulative Graph
	Shop at the same store	Pie Chart and Cumulative Graph
	Are the major shopper in the family	Pie Chart and Cumulative Graph
	Spend more time in the grocery store	Pie Chart and Cumulative Graph

Data Collection Procedure

The procedure for collecting and preparing the data for interpretation is as follows:

- Collect the data and compile a frequency table and
- use Microsoft Excel software package to develop the respective pie and cumulative charts.
- the data is then ready for presentation, analysis and interpretation.

3.5.2 *Identification of Factors that Foster or Hinder Adoption*

In order to confirm whether the factors identified from the literature review could potentially affect the adoption of an OGSS in a South African context, a confirmatory factor analysis technique was employed.

3.5.2.1 *Factor Analysis*

Kim and Mueller (1978), define factor analysis broadly as a variety of techniques whose primary objective is to represent a set of variables in terms of a smaller number of hypothesised variables.

According to Lewis-Beck (1994), there are essentially two types of factor analysis, namely:

- *Exploratory Factor Analysis (EFA):* This is when a researcher is unsure as to what the underlying dimensions are for a given set of data. This type of factor analysis could be used to ascertain the minimum number of possible hypothetical variables that could account for the observed covariance.

- *Confirmatory Factor Analysis (CFA):* This type of factor analysis could be used to test and confirm a specific hypothesis or proposition.

Since the literature review identified certain key factors that could possibly affect the adoption on an OGSS, a CFA technique was used to find out the extent to which the data collected loaded onto the number of factors proposed.

According to Suhr (2006), CFA is appropriate in cases where the various dimensions are well known from prior studies and thus the task is to determine how the data analysed loads onto the identified dimensions. This author further suggest that CFA is used to establish if the factor-loading pattern fits the sample from a new population. Thus, using the factors from prior research conducted in other countries, the aim of this part of the study was to determine the extent to which the data collected from the South African population fitted the load pattern.

3.5.2.2 *Procedure for Conducting the Factor Analysis*

The procedure for conducting the factor analysis is as follows:

- Collect the data and collate into the Microsoft Excel format,
- import the data into the NCSS 2007 software package,
- perform an Item Analysis using the software package NCSS 2007,
- perform a Factor Analysis using the software package NCSS 2007,
- determine the number of dimensions in the solution using Eigenvalues and Scree Plot,
- rotate the axes to assist with interpretation,
- interpret the underlying factors using the factor loadings,
- interpret respondents using factor scores and
- the data is then ready for presentation, analysis and interpretation

3.5.2.3 *Details of Variable Setup in NCSS*

The questions for each factor were given variable names in NCSS as detailed in Table 9 .

Table 9: Variable Names and Descriptions

Construct	Variable Name	Attribute	Question
Perceived Usefulness/Benefit	PU1	Time	Using an Online Grocery Shopping Service can save me a lot of time
	PU2	Convenience	Using an Online Grocery Shopping Service can make my grocery shopping easier or more convenient
	PU3	Cost	Using an Online Grocery Shopping Service can save me money
	PU4	Planning	Using an Online Grocery Shopping service will allow me to see what I require and better plan and buy what I need
	PU5	Information	An Online Grocery Shopping Service will possibly supply me with more product information
	PU6	Physically Disabled	Using an Online Grocery Shopping Service can overcome the obstacles for physically disabled people
	PU7	Elderly People	Using an Online Grocery Shopping Service can overcome the obstacles for elderly people
Perceived Ease of Use	PE1	Ease of Use	Online Grocery Shopping is/might be easy to use
	PE2	Skills Required	It is/might be easy to become skillful at Online Grocery Shopping
	PE3	Easy to Understand	My interaction with the process of Online Grocery Shopping is/might be clear and understandable
	PE4	Easy to Follow	It is/might be easy for me to follow the procedures when ordering groceries online
Perceived Risk	PR1	Payment	I am concerned with the payment security aspects of Online Grocery Shopping
	PR2	Privacy	I am concerned with the privacy of my information provided when using Online Grocery Shopping
	PR3	Delivery Time	I am concerned with the punctuality of the delivery time of Online Grocery Shopping
	PR4	Quality	I am concerned with the quality of the products delivered when ordering from an Online Grocery Shopping Service
Visibility	VS1	Family and Friends Visibility	I know of others that are using Online Grocery Shopping
	VS2	Community Visibility	In my organisation/institution/school, one easily sees Online Grocery Shopping being used
	VS3	Social Visibility	I have seen Online Grocery Shopping being used outside my organisation/institution/school
Social Influence	SI1	Community Pressure	I will use Online Grocery Shopping if the service is widely used by people in my community
	SI2	Peer Pressure	I will adopt Online Grocery Shopping if my boss/manager/acquaintance uses it
	SI3	Family and Friends Pressure	I will adopt Online Grocery Shopping if my friends/relatives use it

Factors that Influence the Adoption of an OGGS

3.5.2.4 *Item Analysis for Each Factor*

In order to ensure that there was internal consistency and reliability of the items within each dimension or factor, an item analysis was conducted for each factor and the respective Cronbach's Alphas were analysed. According to Albright et al. (2006), Cronbach's Alpha coefficient demonstrates the internal consistency of items within a dimension and is based on the average correlation of items within that dimension. Based on the coefficients, decisions can be made regarding which dimensions could benefit from the addition or subtraction of items (Albright et al. 2006). According to Kehoe et al. (1995), an alpha value of at least 0.5 should be achieved for accepting the items within a dimension, provided that they are within a small instrument of between 10 to 15 items. These authors further indicate that for a greater number of items, an Alpha value of greater than 0.8 should be used.

3.5.2.5 *Factor Analysis: Eigenvalues After Varimax Rotation*

Internal consistency as represented statistically by the Eigenvalues, factor loadings and communalities of the constructs identifies how well each variable is predicted by the remaining items in the instrument. Eigenvalues greater than 1.00 suggest the number of factors to analyse. The Scree Plot provides a rough bar plot of the Eigenvalues, thus allowing one to quickly note the relative size of each eigenvalue. (Gorsuch 1983)

3.6 Validity and Reliability

The validity of a measuring tool is the degree to which the instrument measures what it was intended to measure (Zikmund 1997; Leedy and Ormrod 2001). In addition, Davis (1985), state that validity is also important as is establishes the degree of confidence that researchers and managers have in the results of the study. There are two major categories of validity namely external and internal validity (Davis and Cosenza 1985; Zikmund 1997).

3.6.1 *External Validity*

According to Davis and Cosenza (1985), external validity is the extent to which the results of the study can be generalised across the population, settings, and others. Zikmund (1997), alludes to a similar definition but also indicates that the applicability of the time period to another should be included. The questionnaire that was compiled for this study was derived from validated questionnaires (Hiser et al. 1999; Kurnia and Chien 2003), and thus the validity of the study should be fairly high. In addition, a stratified sample was used to obtain a representative sample of the population.

3.6.2 *Internal Validity*

Davis and Cosenza (1985), define internal validity as the degree to which the results of the study can be said to be correct. There are basically three aspects of internal validity namely (Zikmund 1997; Cooper and Schindler 1998):

- *Content/Face Validity:* Consensus that the scale used to measure the responses is logically accurate.
- *Criterion Validity:* When one measure correlates with other measures of the same construct.
- *Construct Validity:* When one is able to confirm a network of related hypotheses or propositions, which is derived from theory based on certain concepts.

For the first part of the study (demographic and behavioural profiling), the questions were kept simple and limited to a selection of answers, thus this section has no impact on the content validity. To ensure that content validity was achieved for the second part (factors that affect adoption of an OGSS) of the questionnaire,

a five point Likert scale that had been validated by Kurnia and Chien (2003), was utilised.

3.6.3 *Reliability*

Reliability is the extent to which the results are free from error and produces consistent results (Zikmund 1997; Cooper and Schindler 1998). According to Zikmund (1997), a good method for ensuring high reliability is to use a “test-retest” method, whereby the same measure is administered to the same respondents at different times. As this study involved obtaining stratified random samples, respondents could not be contacted again to conduct a “re-test”, thus this method was considered to be impractical. A questionnaire that was derived from validated questionnaires developed by Hiser et al. (1999) and Kurnia and Chien (2003), was used, thus respondents should be able to understand the questions being asked which should improve the reliability. In addition, the questionnaire developed was tested a few times on the same group of MBA students so as to further enhance the reliability.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The purpose of this chapter is to present the results obtained from the OGSS survey questionnaires that were administered. The first part of the chapter discusses the number of responses obtained as compared to the sample required as well as the profile of the sample in relation to what was expected. Secondly, the demographical and behavioural profiles of existing/potential OGSS users are presented. Finally, the findings from the factors that influence the adoption of an OGSS are discussed.

4.2 Sample Size

The theoretical sample required as discussed in Chapter 3, was calculated to be 80 respondents. A total of 175 responses were received from the online, emailed and personal questionnaires that were administered. As shown in Figure 16, from the 175 responses received, 43 responses were discarded, as they were incomplete or had missing information. Thus, the 132 complete responses were utilised for the data analysis, which exceeds the theoretical number of responses required.

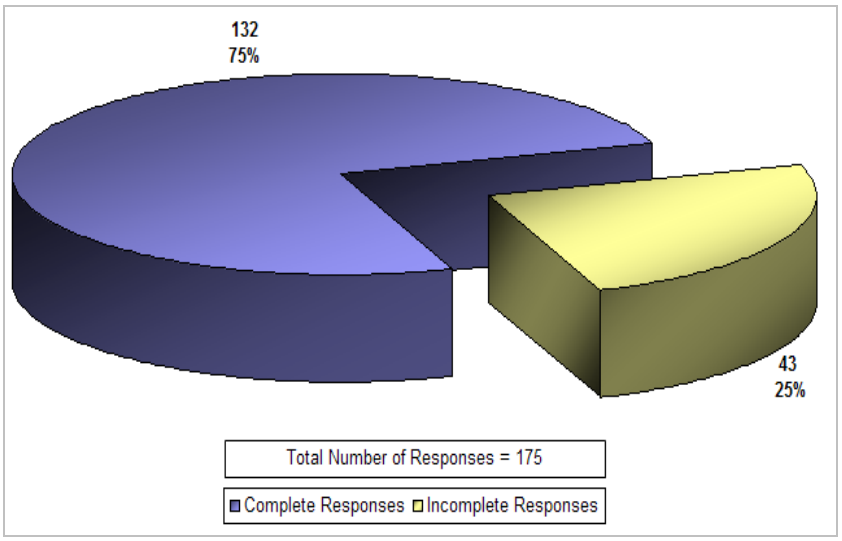

Figure 16: Responses from the OGSS Survey

4.3 Usage of an OGSS in South Africa

4.3.1 *Number of People that have Used/ Are Willing to Use an OGSS*

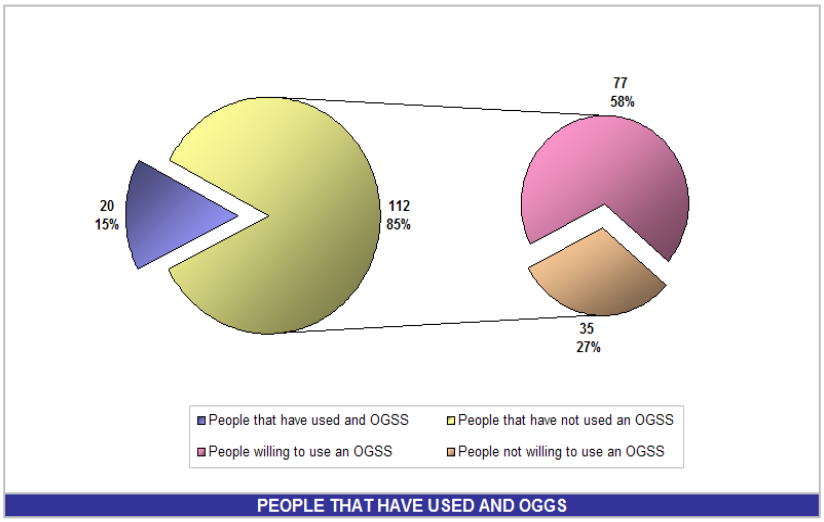

Figure 17: People that have Used an OGSS or are Willing to Use an OGSS

From the surveyed sample of 132, 20 respondents indicated that they have used an OGSS, while the majority of 112 people stated that they have not used such a

service as shown in Figure 17. From these 112 people that have not used an OGSS, 77 indicated that they were willing to use an OGSS, whereas 35 stated that they would not consider using such a service. Thus from the total sample, 97 respondents (20 that have used and 77 that are willing to use) are already using or willing to use an OGSS.

4.4 Demographic Profile

4.4.1 *Age Profile*

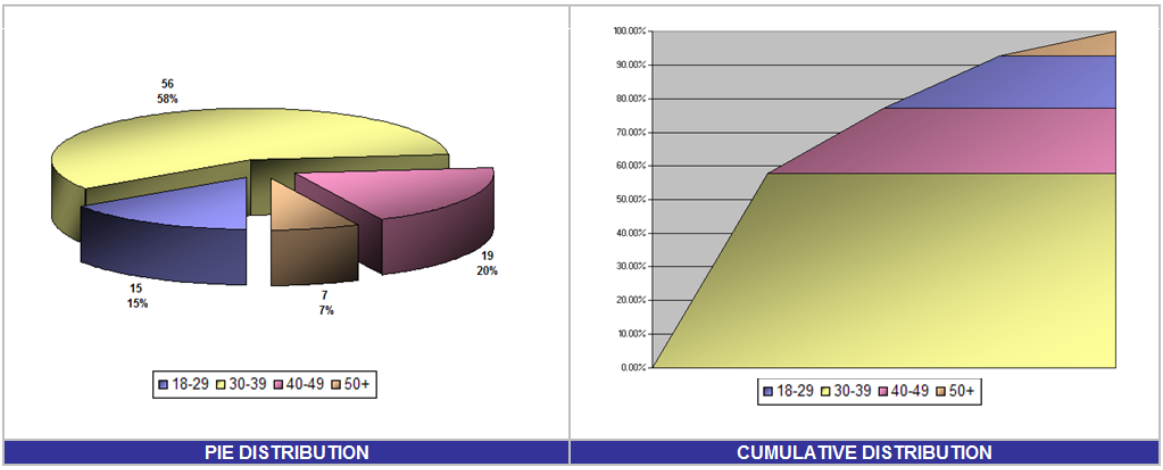

Figure 18: Age Profile of Respondents Using or Willing to Use an OGSS

From the 97 respondents that indicated that they are currently or potentially willing to use an OGSS, the largest age group was the 30 – 39 year old group followed by the 40 – 49 year old group, which had 56 and 19 respondents respectively. The younger group of 18-29 year olds was the second smallest group with only 15 respondents using or willing to use such a service. The older group of 50+ was the minority group with only 7 people indicating that they were using or willing to use this service.

4.4.2 *Gender Profile*

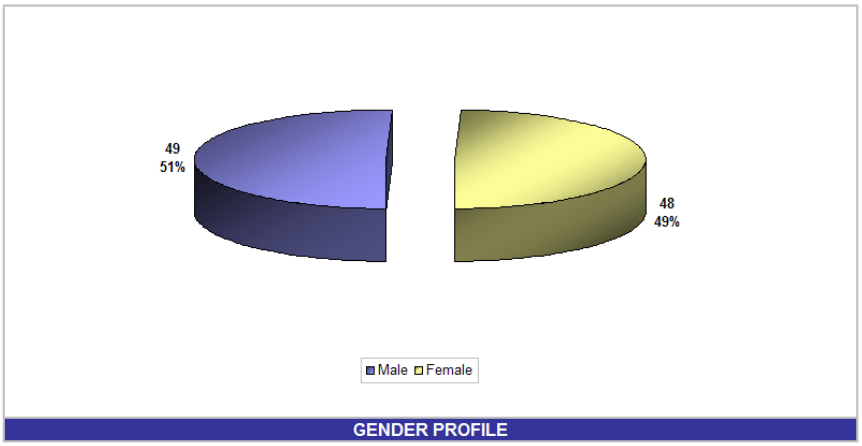

Figure 19: Gender Profile of Existing/Potential OGSS Users

From the 97 respondents that indicated that they were using/willing to use an OGSS, 49 were male and 48 were females.

4.4.3 *Educational Profile*

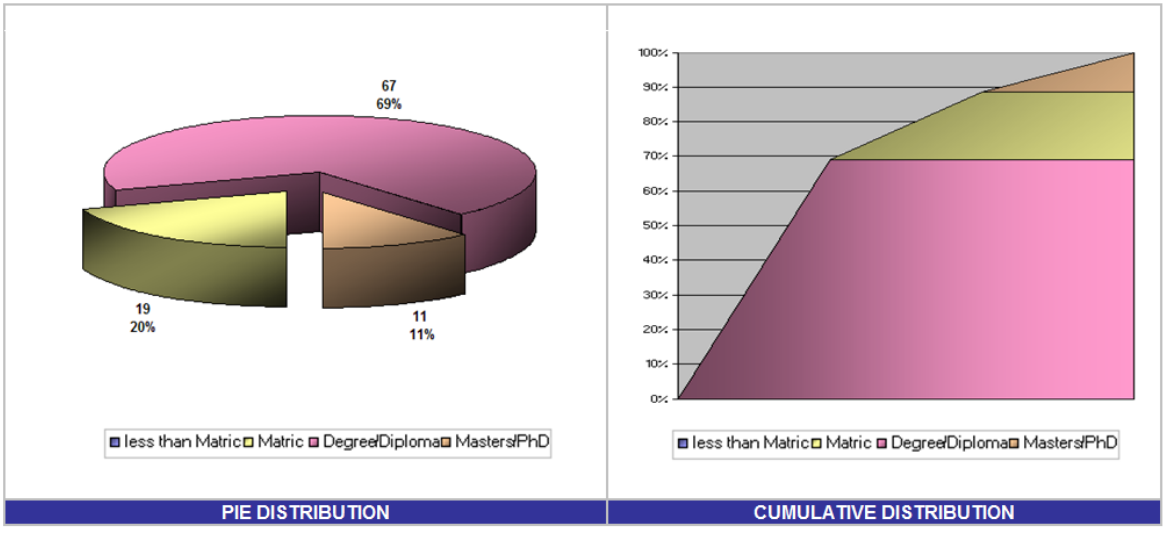

Figure 20: Educational Profile of Existing/Potential OGSS Users

In terms of educational background, 67 of the 97 respondents had a degree or diploma, 19 had a Matric qualification and 11 had a Masters or PhD. None of the respondents having less than a Matric qualification were willing to use an OGSS.

4.4.4 *Income Profile*

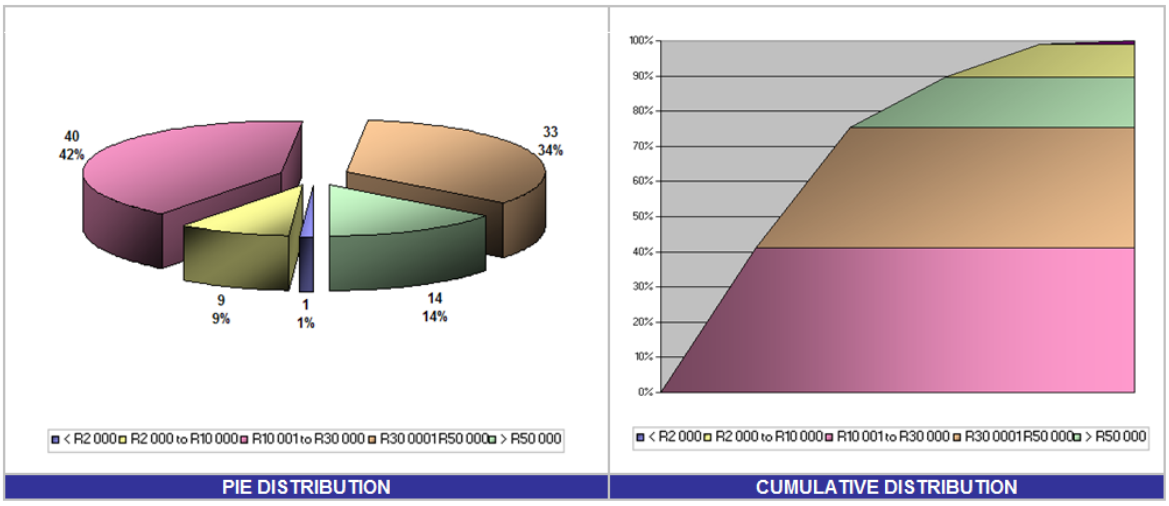

Figure 21: Income Profile of Existing/Potential OGSS Users

The income profile of the existing/potential OGSS user is depicted in Figure 21. As can be seen from this figure, the majority of the respondents that have a net household income of between R10 000 to R50 000, which accounts for more than 75% of the respondents, that were using/willing to use an OGSS. The next largest group that was willing to use an OGSS were those that earned a net income of greater than R50 000. The respondents earning less than R10 000 accounted for only 10 out of the 97 respondents.

4.4.5 *The Number of People and Children per Household*

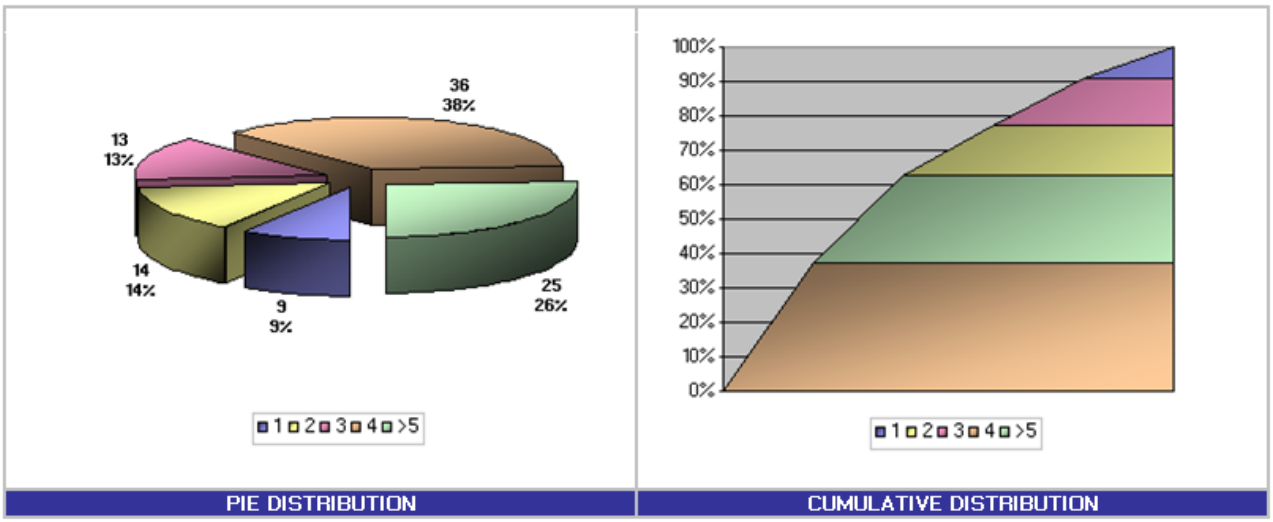

Figure 22: Number of People per Household

From the 97 respondents who are using/willing to use an OGSS, the majority (38%) had more than 4 people per household with 25 respondents having more than 5 people within the house. Respondents groups having 2 and 3 people per household were almost equal having 14 and 13 people per household respectively. People living alone only accounted for 9 out of the 97 respondents.

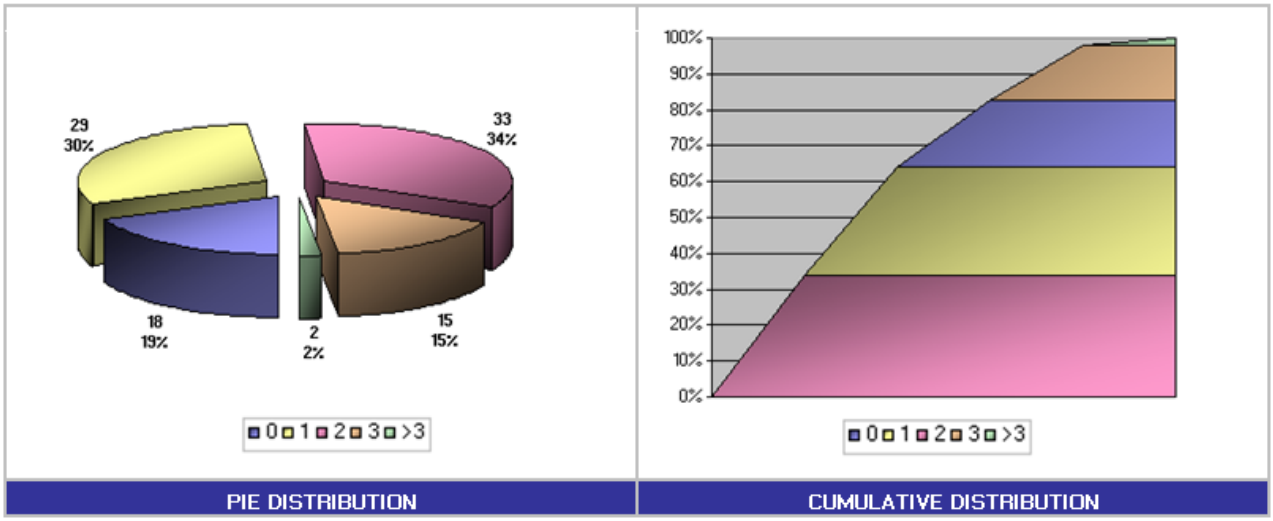

Figure 23: Number of Children per Household

The number of children per household statistics as depicted in Figure 23, showed that the majority of people numbering 33 that were using/willing to use an OGSS had 2 children in the household, with 29 people having only 1 child. From the 97 respondents, 18 had no children, 15 had 3 children and only 2 had more than 3 children.

4.4.6 *Marital Status*

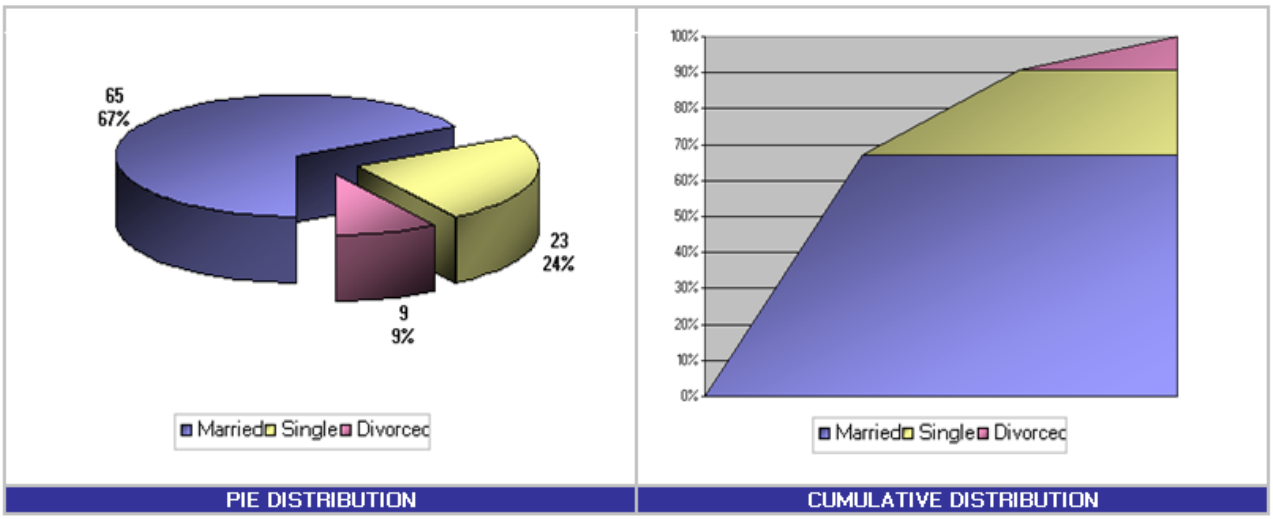

Figure 24: Marital Status of Respondents

Figure 24 illustrates the marital status of existing/potential OGSS users. Married people accounted for 67 percent, single 23 percent and divorced people 9 percent of the people that were using or potentially would use an OGSS.

4.4.7 *Conclusion of Demographic Profiling*

The results of the demographic profiling suggest that the South African person that is more likely to use an OGSS has the following demographic characteristics:

- Would be between the ages of 30 to 49,
- could be either male or female,

- would be well qualified having at least a degree or diploma,
- would have an average to good net household income, earning more than R10 000 a month,
- would have a fairly large household with at least 3 members inhabiting the home,
- would have at least 1 or 2 children and
- would be married.

4.5 Behavioural Profiling

4.5.1 *Access to a Computer with Internet and Frequency of Use*

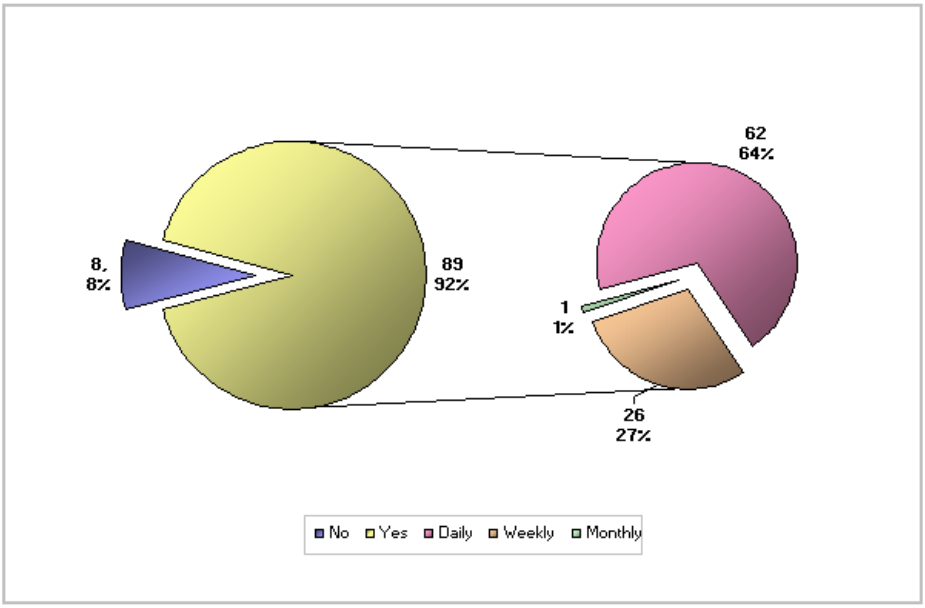

Figure 25: Access to a Computer with Internet and Frequency of Use

Figure 25 clearly shows that the majority of the respondents, numbering 89 that are using/willing to use an OGSS have access to a computer with Internet with only 8 of the respondents not having this facility available. From the 89 respondents that

have access to computer with Internet, 62 people used the Internet daily, with 28 people using it weekly and only 1 of the respondents using this service monthly.

4.5.2 *Frequency of Shopping*

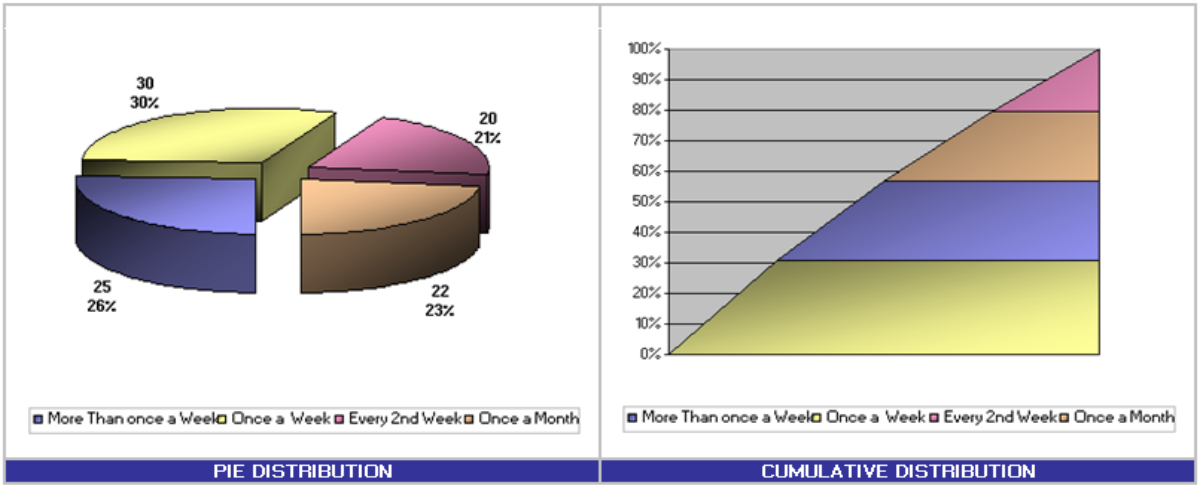

Figure 26: Frequency of Shopping

The frequency of grocery shopping of the respondents is illustrated in Figure 26. There appears to be an almost even four way split between the different categories, with the “once a week” and “more than once a week” categories having marginally greater number of respondents than the “every 2nd week” and “once a month” categories.

4.5.3 *Shopping at the Different Stores*

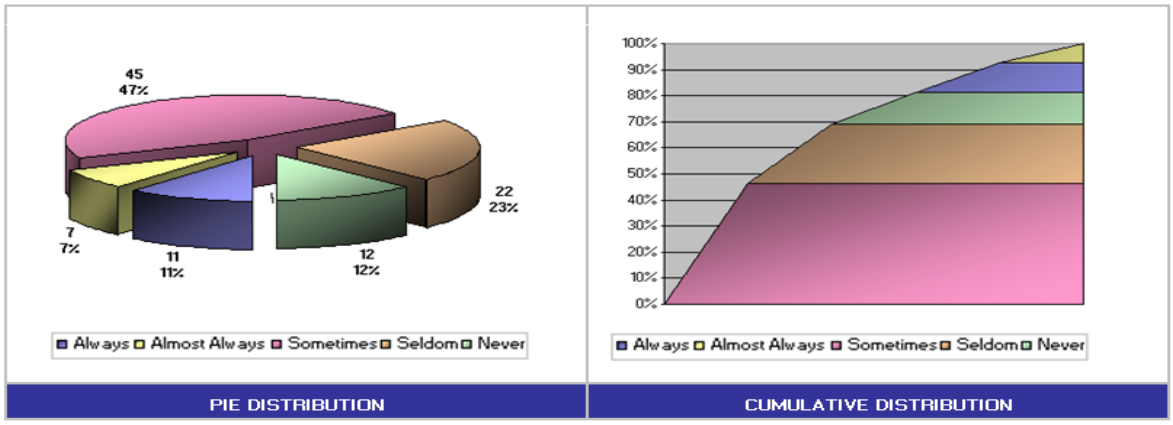

Figure 27: Shopping at Different Stores

Concerning the respondents shopping around at different stores, 45 people suggested that they sometimes shop around, with 22 people indicating that they seldom do. Eleven of the 97 respondents said that they always shop at different stores, with 7 people stating that they almost always go to different stores. Twelve of the respondents stated that they never go to different stores to conduct their grocery shopping activity.

4.5.4 *Major Shopper in the Household*

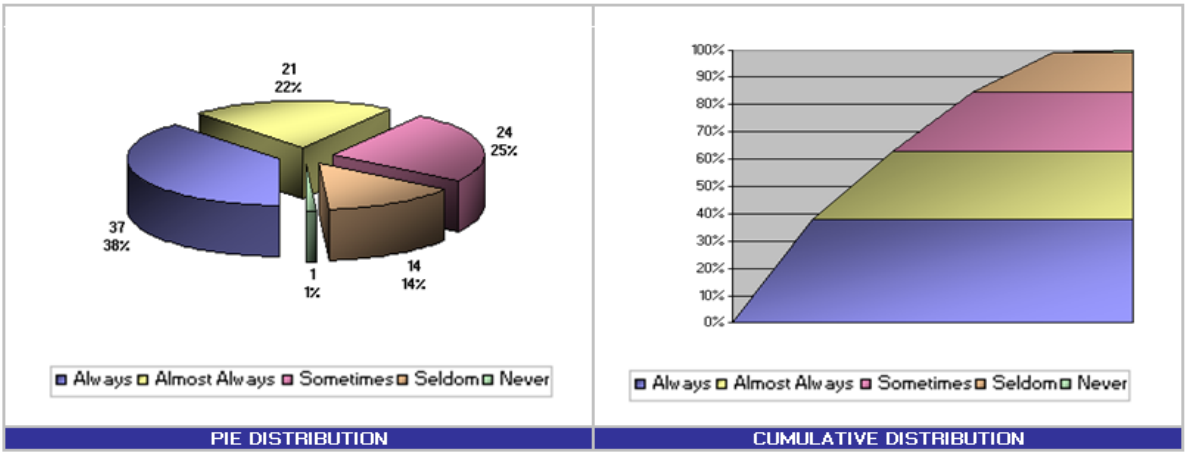

Figure 28: Major Shopper in the Household

From the survey results, 37 of the 97 respondents that have used/willing to use an OGSS stated that they were always the major shopper in the household, with 21 people suggesting that they were almost always the major shopper and 34 people stated that they sometimes did the shopping. Fourteen of the respondents said that they seldom did the shopping with 1 person stating that they never did the shopping at all.

4.5.5 *Shopping Time*

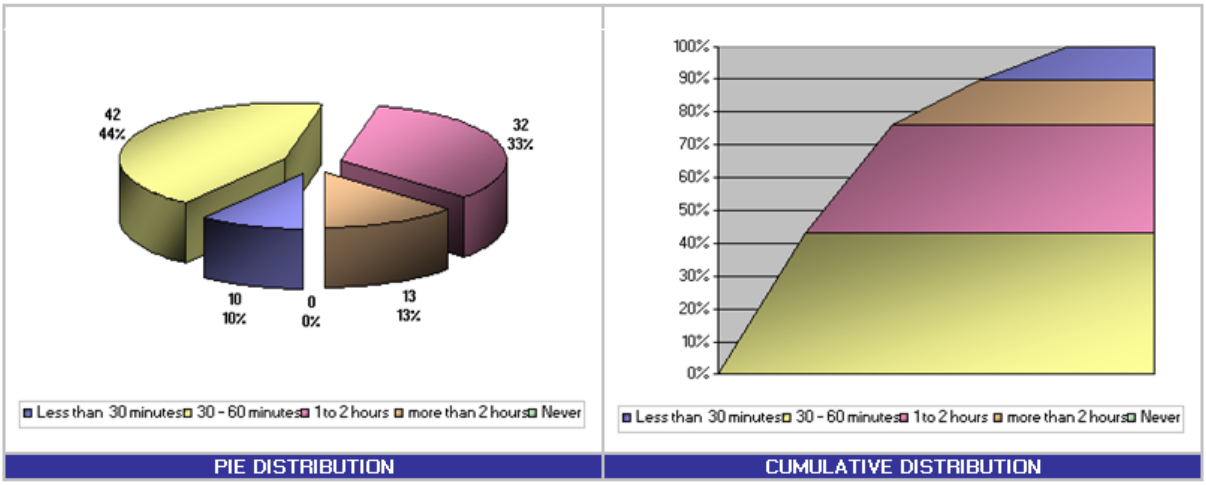

Figure 29: Shopping Time

The greatest number of people that have used/willing to use the OGSS spent between half an hour to 2 hours shopping for groceries. Thirteen of the respondents said they spent more than 2 hours in a grocery store, with 10 people stating that they performed their grocery shopping activities in less than 30 minutes.

4.5.6 *Conclusion of Behavioural Profiling*

The results of the behavioural profiling indicate that the South African person that is potentially more likely to use an OGSS has the following behavioural characteristics:

- They would have access to a computer with Internet and use the Internet at least once a week,
- they would shop anything from once a week to once a month,
- they would very seldom shop around for better prices,
- they would be the major shopper in the household and
- they would take between 30 minutes to 2 hours to conduct their shopping activity.

4.4 Factors that Affect the Adoption of an OGSS

4.5.7 *Item Analysis for Each Factor*

The results of the item analysis that was conducted for each factor using the software package NCSS is detailed in Table 10. For the first four factors, the alpha value is greater than 0.8 with perceived usefulness, the perceived ease, the perceived risk and visibility factors alpha values being 0.824, 0.829, 0.887 and 0.802 respectively. For the social influence factor, the alpha value is 0.798, which was below the 0.8 value generally required, however as this factor had only a few items, this alpha value was found to be acceptable.

Table 10: Item Analysis

Reliability Section

	Item Values		If This Item is Omitted				R2
Variable	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total	Other Items
PU1	2.143939	0.9006577	13.11364	3.865383	0.7888	0.6531	0.6090
PU2	2.219697	0.9354298	13.03788	3.819207	0.7841	0.6771	0.5860
PU3	2.80303	1.007145	12.45455	3.864822	0.8050	0.5586	0.3710
PU4	2.363636	0.9432179	12.89394	3.810908	0.7835	0.6798	0.5902
PU5	2.454545	0.902614	12.80303	3.925721	0.8017	0.5748	0.4390
PU6	1.568182	0.8397853	13.68939	4.120573	0.8307	0.3779	0.5371
PU7	1.704545	0.9057799	13.55303	4.00632	0.8179	0.4724	0.5701
Total			15.25758	4.505503	0.8258		

Cronbach's Alpha 0.825820 Std. Cronbachs Alpha 0.824396

PERCEIVED USEFULNESS

Reliability Section

	Item Values		If This Item is Omitted				R2
Variable	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total	Other Items
PE1	2.295455	0.7690446	6.94697	2.272687	0.8191	0.5506	0.3453
PE2	2.143939	0.6553663	7.098485	2.301211	0.7900	0.6485	0.4525
PE3	2.44697	0.9675214	6.795455	2.018005	0.7633	0.6845	0.5565
PE4	2.356061	0.9895066	6.886364	1.940519	0.7204	0.7647	0.6313
Total			9.242424	2.771505	0.8237		

Cronbach's Alpha 0.823666 Std. Cronbachs Alpha 0.829471

PERCEIVED EASE OF USE

Reliability Section

	Item Values		If This Item is Omitted				R2
Variable	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total	Other Items
PR1	2.204545	1.096411	6	2.65583	0.8574	0.7498	0.6561
PR2	2.022727	1.051832	6.181818	2.646669	0.8324	0.8102	0.7067
PR3	1.977273	0.9765644	6.227273	2.802918	0.8756	0.6963	0.5437
PR4	2	0.9807304	6.204545	2.74832	0.8522	0.7618	0.6135
Total			8.204545	3.55274	0.8871		

Cronbach's Alpha 0.887130 Std. Cronbachs Alpha 0.887588

PERCEIVED RISK

Reliability Section

	Item Values		If This Item is Omitted				R2
Variable	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total	Other Items
VS1	3.351145	1.14974	7	1.921538	0.7258	0.6546	0.4432
VS2	3.580153	1.022472	6.770992	2.077591	0.7819	0.5990	0.3640
VS3	3.419847	1.143236	6.931298	1.890018	0.6746	0.7005	0.4929
Total			10.35114	2.811853	0.8029		

Cronbach's Alpha 0.802916 Std. Cronbachs Alpha 0.802859

VISIBILITY

Reliability Section

	Item Values		If This Item is Omitted				R2
Variable	Mean	Standard Deviation	Total Mean	Total Std.Dev.	Coef Alpha	Corr Total	Other Items
SI1	2.712121	1.059528	6.280303	1.923397	0.7999	0.5718	0.3654
SI2	3.30303	1.040694	5.689394	1.90272	0.7518	0.6184	0.4467
SI3	2.977273	1.066248	6.015152	1.781949	0.6108	0.7475	0.5629
Total			8.992424	2.674437	0.7990		

Cronbach's Alpha 0.799027 Std. Cronbachs Alpha 0.798778

SOCIAL INFLUENCE

4.5.8 *Factor Analysis*

The confirmatory factor analysis was conducted by importing the data into NCSS 2007 and the parameters as shown in Appendix 3 were used. The number of factors chosen was five, as this was the number of factors that were proposed that could affect the adoption of an OGSS in South Africa.

4.5.8.1 *Eigenvalues and Scree Plot*

From Table 11, it can be seen that only the first five factors have eigenvalues that are greater than one, which suggest that the five factors that were proposed are the only factors that need to be considered. In addition, the scree plot graphically illustrates the size of the eigenvalues, which further confirms that only five factors are present.

Table 11: Eigenvalues and Scree Plot

Factor Analysis Report

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Eigenvalues after Varimax Rotation

No.	Eigenvalue	Individual Percent	Cumulative Percent	Scree Plot
1	4.169059	32.42	32.42	||||||
2	2.848891	22.15	54.57	|||||
3	1.958736	15.23	69.80	||||
4	2.078636	16.16	85.96	||||
5	1.695316	13.18	99.14	|||
6	0.893746	6.95	106.09	||
7	0.246388	1.92	108.01	|
8	0.196356	1.53	109.54	|
9	0.128286	1.00	110.53	|
10	0.077078	0.60	111.13	|
11	-0.002195	-0.02	111.12	|
12	-0.031574	-0.25	110.87	|
13	-0.036564	-0.28	110.59	|
14	-0.084408	-0.66	109.93	|
15	-0.092698	-0.72	109.21	|
16	-0.144553	-1.12	108.09	|
17	-0.160177	-1.25	106.84	|
18	-0.175207	-1.36	105.48	|
19	-0.207533	-1.61	103.86	|
20	-0.246241	-1.91	101.95	|
21	-0.250655	-1.95	100.00	|

Factors with eigenvalues > 1

4.5.8.2 *Factor Loadings*

Figure 30 details the absolute factor loadings, which allows one to determine the correlation structure. Essentially, the greater the number of bars an item has in common with one and only one factor, the more likely it is that the item is a valid

measure of the factor. From the bar chart in Figure 30, it is clearly seen that for each of the five factors the items under each respective factor is a valid measure of that factor.

Table 12: Factor Loadings

Factor Loadings after Varimax Rotation

Variables	Factors Factor1	Factor2	Factor3	Factor4	Factor5
PU1	-0.667979	-0.031947	0.115478	0.210553	-0.121036
PU2	-0.696089	-0.098745	0.145863	0.310969	-0.177878
PU3	-0.546717	-0.042321	0.118695	0.177960	-0.108821
PU4	-0.641795	0.013001	0.033440	0.349087	-0.141034
PU5	-0.505332	-0.029600	0.047876	0.189268	-0.208802
PU6	-0.829097	0.076722	0.066230	0.051901	-0.197881
PU7	-0.882833	0.114512	0.087655	0.107259	-0.250876
PE1	-0.204069	0.019210	0.174114	0.140860	-0.640237
PE2	-0.109730	0.126674	0.079466	0.098989	-0.659207
PE3	0.051071	0.003627	0.069480	-0.082103	-0.728990
PE4	0.057285	0.101126	0.111042	-0.073787	-0.759637
PR1	0.058216	0.840557	-0.020619	0.061947	-0.103889
PR2	-0.021949	0.917327	0.003233	-0.032577	0.039993
PR3	-0.099238	0.728069	-0.156112	0.098960	-0.080806
PR4	0.003377	0.809018	-0.121042	0.105354	-0.041716
VS1	-0.107713	-0.097436	0.799418	0.044236	-0.124560
VS2	-0.206779	-0.040968	0.665171	0.161945	-0.003435
VS3	-0.185641	-0.148742	0.808344	0.067875	-0.036596
SI1	-0.268099	0.062919	0.004362	0.693535	-0.074690
SI2	-0.138537	0.058982	0.252966	0.704011	-0.033732
SI3	-0.153332	0.127579	0.048554	0.810568	-0.055493

FACTOR LOADINGS

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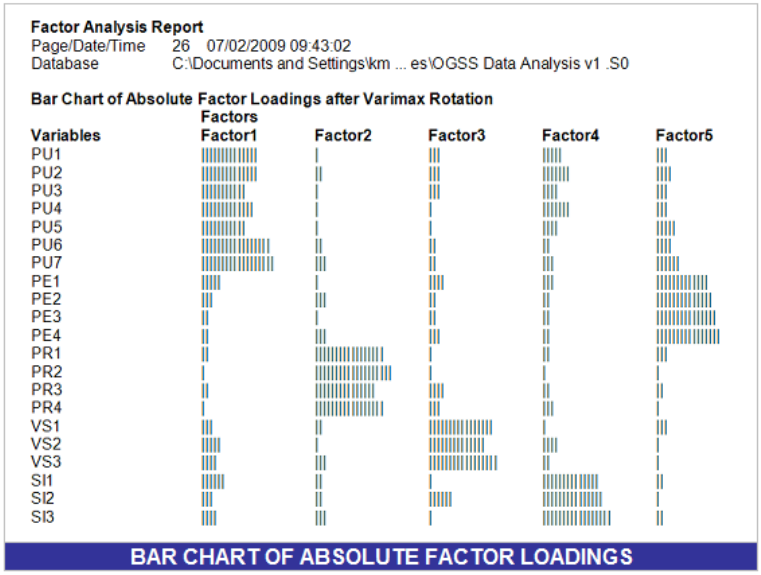
Bar Chart of Absolute Factor Loadings after Varimax Rotation



BAR CHART OF ABSOLUTE FACTOR LOADINGS

Figure 30: Factor Loadings (Bar Chart)

The bar chart and factor table in Figure 31 and Table 12 respectively shows which items are related to which factors. Essentially if the loading for each item is greater

than the minimum loading set as 0.4 (see Appendix 3), then we can conclude that the specific item contributes or alludes to that factor. For factor 1, which was named Perceived Usefulness, all of the seven items from PU1 to PU7 contributed to explaining this factor. Similarly, items PE1, PE3 and PE4, PR1, PR2, PR3 and PR4, VS1, VS2 and VS3 and SI1, SI2 and SI3 relates to Perceived Ease of Use, Perceived Risk, Visibility and Social Influence respectively as shown in Figure 31.

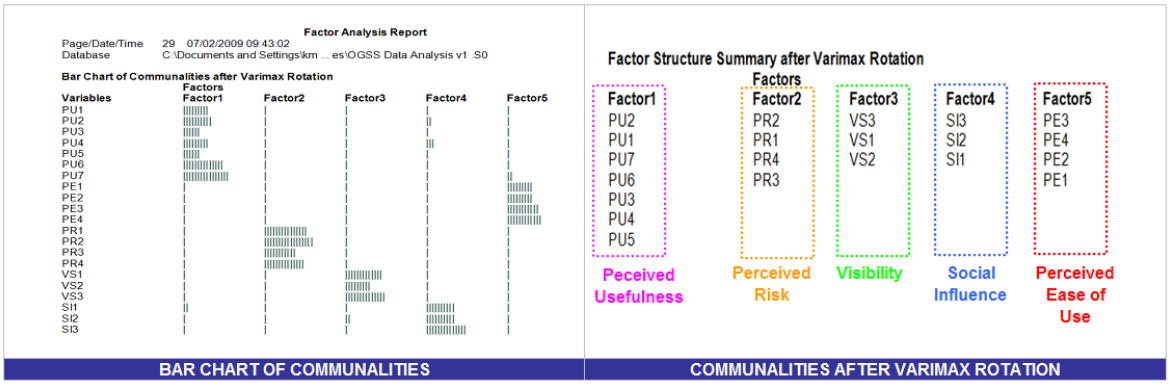


Figure 31: Communalities

The number of bars on a specific item indicates the level of agreement or consensus that was obtained from the surveyed data. Although all items for a factor were shown to be important, the items were ranked to gauge the extent to which that item explained the factor under consideration, which is shown in Table 13.

Table 13: Factors, Item Loadings and Ranking

Construct	Variable Name	Attribute	Question	Loading	Rank
Perceived Usefulness/Benefit	PU1	Time	Using an Online Grocery Shopping Service can save me a lot of time		3
	PU2	Convenience	Using an Online Grocery Shopping Service can make my grocery shopping easier or more convenient		3
	PU3	Cost	Using an Online Grocery Shopping Service can save me money		5
	PU4	Planning	Using an Online Grocery Shopping service will allow me to see what I require and better plan and buy what I need		4
	PU5	Information	An Online Grocery Shopping Service will possibly supply me with more product information		5
	PU6	Physically Disabled	Using an Online Grocery Shopping Service can overcome the obstacles for physically disabled people		2
	PU7	Elderly People	Using an Online Grocery Shopping Service can overcome the obstacles for elderly people		1
Perceived Ease of Use	PE1	Ease of Use	Online Grocery Shopping is/might be easy to use		4
	PE2	Skills Required	It is/might be easy to become skillful at Online Grocery Shopping		3
	PE3	Easy to Understand	My interaction with the process of Online Grocery Shopping is/might be clear and understandable		2
	PE4	Easy to Follow	It is/might be easy for me to follow the procedures when ordering groceries online		1
Perceived Risk	PR1	Payment	I am concerned with the payment security aspects of Online Grocery Shopping		2
	PR2	Privacy	I am concerned with the privacy of my information provided when using Online Grocery Shopping		1
	PR3	Delivery Time	I am concerned with the punctuality of the delivery time of Online Grocery Shopping		3
	PR4	Quality	I am concerned with the quality of the products delivered when ordering from an Online Grocery Shopping Service		2
Visibility	VS1	Family and Friends Visibility	I know of others that are using Online Grocery Shopping		2
	VS2	Community Visibility	In my organisation/institution/school, one easily sees Online Grocery Shopping being used		3
	VS3	Social Visibility	I have seen Online Grocery Shopping being used outside my organisation/institution/school		1
Social Influence	SI1	Community Peer Pressure	I will use Online Grocery Shopping if the service is widely used by people in my community		3
	SI2	Work Peer Pressure	I will adopt Online Grocery Shopping if my boss/manager/acquaintance uses it		2
	SI3	Family and Friends Pressure	I will adopt Online Grocery Shopping if my friends/relatives use it		1

For the ***perceived usefulness/benefits*** factor, the sample group suggested that the attributes of helping the elderly and the disabled were seen to be the items that explained the perceived usefulness/benefits the most. The time saving and convenience attributes also contributed largely in influencing the perceived usefulness/benefit factor. The cost and planning attributes, although being

important factors were seen to be contributing the least in terms of explaining the perceived benefit factor.

In terms of the ***perceived ease of use*** *factor*, the easy to follow attribute was found to be the item that influenced this factor the most. The remaining three items namely, easy to understand, skills required and easy to use contributed almost equally to explaining the extent to which the sample population agreed with the perceived usefulness factor.

The privacy item was the most important item in explaining the ***perceived risk*** factor. The remaining three items, namely; payment, delivery time and quality contributed almost equally to explaining the extent that the population agreed with the perceived risk as being a factor that influenced the adoption of an OGSS in South Africa.

The family/friends, social and community visibility all explained to a similar extent the impact of the ***visibility*** factor on the adoption of an OGSS in South Africa.

The pressure from family and friends was seen to be the item that explained the ***social influence*** *fac*tor the greatest. Pressure from work and community acquaintances influenced this factor to a lesser extent.

4.5.9 *Conclusion of Factors that Affect the Adoption of an OGSS*

The results of the CFA indicate that there were only five potential factors that could affect the adoption of an OGSS in South Africa. Thus, it not only confirms that only the five factors proposed have an influence on the adoption of an OGSS but also strongly indicates that the named factors are consistent with the meaning of the combination of the variables that make up each factor.

In conclusion, using the collected data and applying a CFA it was confirmed that the proposed five factors as listed below would indeed influence and affect the adoption of an OGSS in South Africa:

- Perceived usefulness,
- perceived ease of use,
- perceived risk,
- visibility and
- social responsibility.

4.5 Summary of the results

The results of the demographic profiling suggest that the South African person that is more likely to use an OGSS is between the ages of 30 to 49, could be either a male or female and would have a tertiary qualification. In addition such a person would earn a net household income of more then R10 000 a month, would be married, would live in a household with at least three members and have at least one child.

Behaviourally, the person would have access to a computer with Internet and would access the Internet at least once a week. Additional characteristics of such a person is that they would conduct their shopping activity between once a week to once a month, they would hardly shop around for better prices, they would generally be the major shopper in the family and would spend a long time conducting their shopping activity taking between 30 minutes to more than 2 hours.

The data analysis with regards to the factors that influence the adoption of an OGSS clearly showed that there were five major factors which corresponds to the factors proposed namely, Perceived Usefulness, Perceived Ease of Use, Perceived Risk, Visibly and Social Influence.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

The purpose of this chapter is to discuss, explain and interpret the findings of the analysis that was presented in Chapter 4 in relation to the Literature that was discussed in Chapter 2.

The first section focuses on the comparison between the proposed demographic profile of a potential South African OGSS user, which was deduced from previous research, and the results of the survey analysis. The second section compares the behavioural profile of such a user against the profile theorised. In both these sections, similarities and differences are discussed and possible reasons and explanations are provided.

The third section compares the factors that were found to influence the adoption of an OGSS in other countries against the results obtained from the data analysis that was performed on the surveyed data. The commonalities and deviations are discussed and possible explanations for such similarities or differences are offered.

5.2 Demographic Profile of Respondents

When the survey was conducted, a major factor was to ensure that a representative sample of the South African population was obtained so as to ensure that any deductions that were made could be used to imply the same for the population.

The demographic profile of the South African population as well as that of the sample of 132 respondents are illustrated in Figure 32.

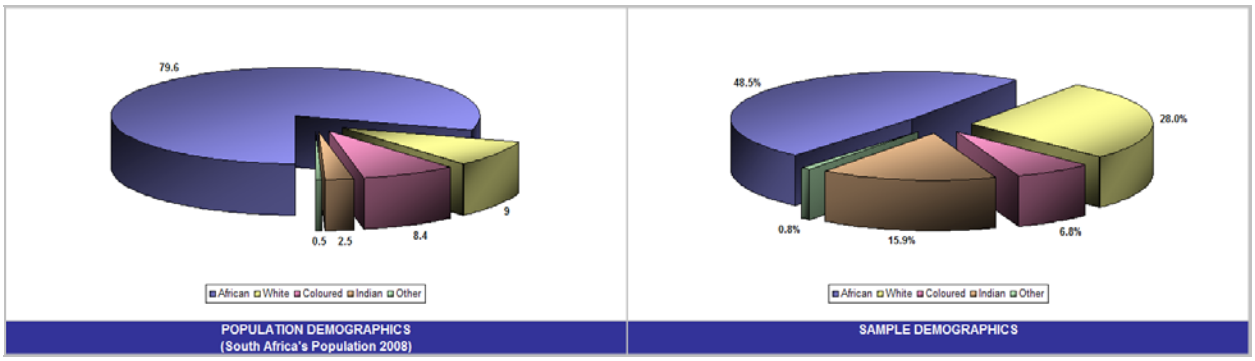


Figure 32: Demographic Profile of the Population and the Sample

From these two charts, it can be seen that the sample obtained does not exactly match the demographics of the South African population, however the author believes that it is sufficiently representative and thus could be used to make inferences of the population.

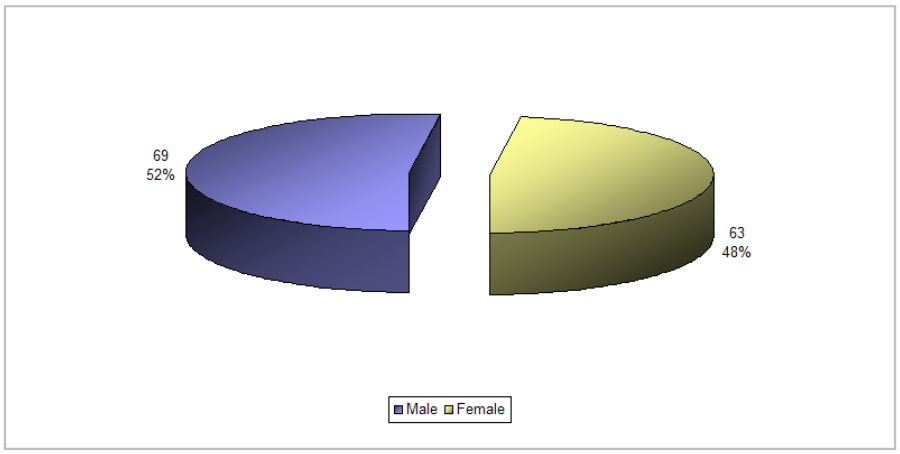


Figure 33: Gender Profile of the Sample

As can be seen from Figure 33 , there is an almost even split between males and females present in the sample, thus providing sufficient gender representation to make inferences about the population.

In terms of the income levels in South Africa, one tried to obtain a sample that had an almost even representation from the various income groups. However, as can be seen from Figure 34 , the sample is slightly skewed towards the middle to higher income bracket. One would expect such results as the survey was

conducted in the Gauteng region where these inhabitants generally earn a much higher annual income than most other provinces besides the Western Cape, which is illustrated in Figure 35.

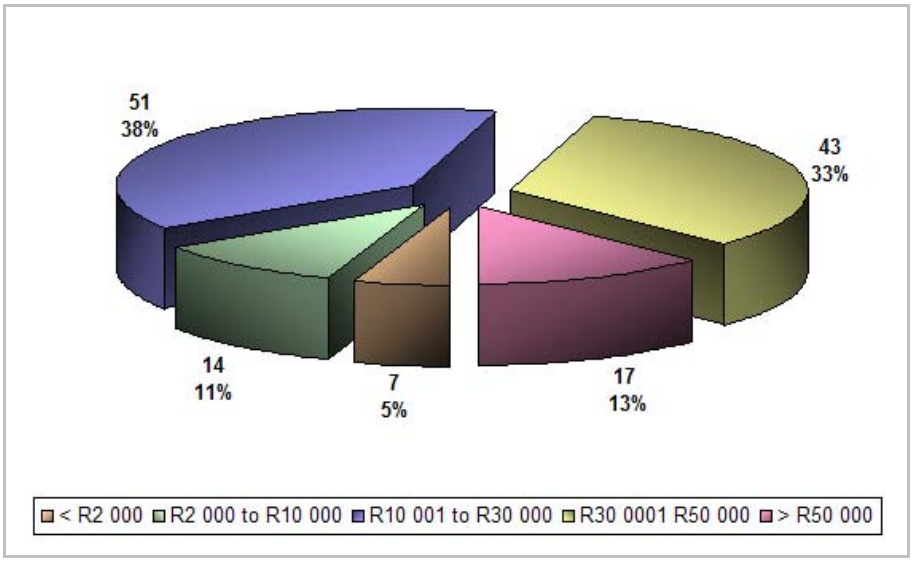


Figure 34: Income Levels of the Sample

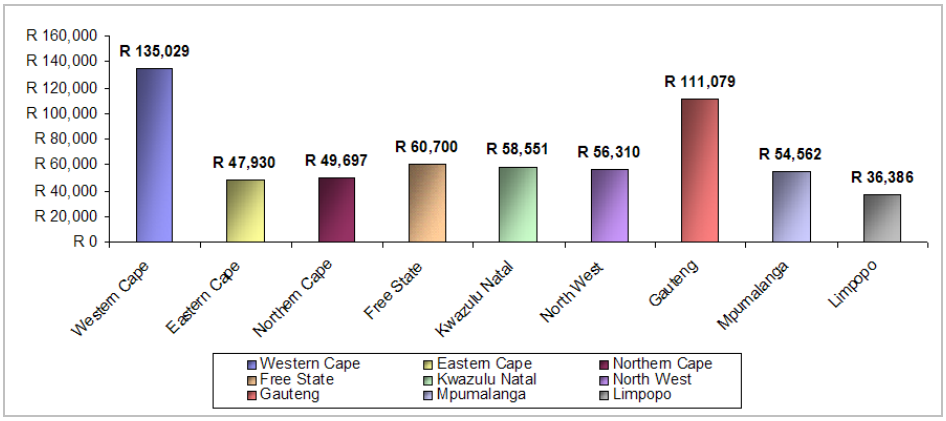


Figure 35: Average Income per Annum for Each Province in South Africa (Anon 2006)

5.3 Discussion of Demographic Profiling

5.3.1 *Age*

Previous research conducted in other countries suggest that the younger generation between the mid 20's to the early 40's are more likely to use an OGSS. Results of this research show a similar trend, however the age group is slightly older with the range being between 30 to 49 years of age. One would expect this age group to be keener to utilise an OGSS, as they are predominantly the working class group within the South African population. This group of people are generally quite busy, often working long hours and are highly career focused. The spare time that these people have is often devoted to their families and for them time is a scarce commodity. Thus, utilising such a service would allow them to get what they want at a fraction of the time, which would make them quite willing to pay for the associated cost of the service. In addition, since this age group is highly career focused they would generally have more disposable income due to higher salaries and thus would be more willing to pay for such a service.

5.3.2 *Gender*

Many of the studies in the various countries suggest that females would be more willing to use an OGSS, as grocery shopping is deemed to be a female activity. Furthermore, other studies into Internet shopping suggest that males are more familiar and acquaint with technology and although they do not fit the typical gender type of grocery shoppers, they are more likely to use Internet shopping services. One study indicated that gender did not have any major significance in determining whether a person would be willing to use an OGSS. The results of this survey agree with the latter statement in that there is an almost even proportion of males and females that would be willing to use an OGSS. Within the South African environment, most households have a dual income with both parents working to

support the home. Thus, household tasks are normally shared and males are seen to be more involved in the shopping activity than in the past. In addition, females are exposed to the working environment, thus they are more familiar with the Internet and are comfortable with using online shopping services. In summary, the combination of males involved in grocery shopping and females utilising online shopping services, results in both genders being equally willing to use an OGSS.

5.3.3 *Education*

The level of education is a primary determinant of whether a person is likely to adopt an OGSS, as generally a better education leads to the person having a more lucrative job with higher earning potentials and reduced free time due to longer working hours. These are classic characteristics of an OGSS, as the limited time and more money, allows an individual to pay more for services that save time. Within South Africa, this is no exception with the results of the survey clearly showing that individuals that have at least a degree or diploma being more willing to use an OGSS. In addition, individuals that have attended tertiary institutions have had greater exposure to the Internet environment and thus have more positive perceptions of shopping online, as compared to the older generation, who are afraid of such experiences.

5.3.4 *Income*

An OGSS is seen to be a service that is utilised more by the upper income bracket roughly between R25 000 to R65 000 net income per month, primarily due to the higher associated cost with delivering the service. The results of this study confirms to some extent that an OGSS has a high probability of being adopted by a person who has a net income of greater than R10 000. The R10 000 to R30 000 income in the South African environment is seen to be characteristic of a middle income household, thus in this country, an OGSS would not only be used by the higher income bracket, but is likely to be used by this middle income group as well.

The reason for this could be that the typical middle-income household has both parents working and thus time is a major constraint, which could result in such families looking to use services that could have a perceived time saving benefit.

5.3.5 *Presence of Family and Children*

The theory suggest that generally, households that have family and children present would be more inclined to use an OGSS. Such households would have at least 2 adults and 2 children present, thus having a total of 4 people per household.

The results from this research suggest that the South African that is more likely to adopt an OGSS has about 4 to 5 people per household and such households have either 1 or 2 children. Thus, it concurs with the theory that households that have family and children present are more likely to utilise an OGSS. The primary reason for this is that the adults in such families generally would both be working to ensure that sufficient income is obtained to support the household. With both parents working, time becomes a scarce commodity and thus the time spent on grocery shopping could be better spent with the children. In addition, children of this era have become more loaded with additional schoolwork and thus require greater attention and time from their parents. Thus, working parents who have a high career focus coupled with children who require more time and attention are more willing to use the OGSS. This would save them valuable time, which could be used for other more important activities.

The results from this research do differ with the theory in that the number of people and children present in the South African household are greater than what was found in research conducted in other first world countries. Generally, people in first world countries have fewer children than third world countries, which could be attributed to such people wanting to give their children a higher standard of education and a better quality of life. Also people in first world countries are generally highly career orientated and thus normally get married much later in life,

which results in them having fewer children. The number of people per household were also found to be slightly higher in South Africa as compared to its European and Australian counterparts. This could be due to the fact that South African households generally have a more well knit family unit, with extended family such as the grandparents or even uncles and aunties staying in the same household.

5.3.6 *Marital Status*

Previous research has indicated that married people were more likely to use an OGSS. This study has confirmed that the majority of the South Africans that would be willing to use an OGSS would in fact be married. A possible reason for this could be that married people are quite time constrained having to squeeze in some family time between work and household activities. Thus, such a service would provide them with possible time saving benefits. Generally, single South Africans have more free time and have the flexibility to spend their time as they please, which is not normally the case with married couples.

5.3.7 *Conclusion*

The demographic profiling of the typical South African that is likely to utilise an OGSS, fits the profile suggested by studies conducted in other countries fairly well, with only a few minor differences. In the first world countries, the age profile of a potential OGSS user is slightly younger starting from about 25 years old to about 44 years old as compared to their South African counterparts with who are between the ages of 30 to 49 years. In terms of gender, it was found that there was no major influence in whether the person was male or female, which could be attributed to males being more involved in the shopping activity and females being more acquainted and comfortable with shopping online. Income levels and educational characteristics were found to be major influencers of whether a person would be an OGSS user or not. It was found that a person from a better educational background had the tendency to work longer hours, earned a higher

income and was looking to use time saving services, as time was a scarce commodity. Being married compounds the matter as such a person needs to also spend time with the family hence, married people were found to be more willing to use an OGSS. Thus, with the potential perceived time saving benefits offered by an OGSS, such individuals would be more likely to use and pay for such a service.

It was concluded that a person that has 4 to 5 people per household, was more willing to adopt an OGSS. This was similar to what was found in other studies, with a slight difference in that the number of people per household was marginally higher. This was attributed to a more close-knit family and extended families being part of the household unit. Also such people would typically have 1 or 2 children in the household, which again was marginally higher than in the other studies. The primary reason for more children was that within South Africa, as a third world country, people generally get married earlier and thus tend to have more children as compared to their counterparts in first world countries.

5.4 Discussion of Behavioural Profiling

5.4.1 *Access to a Computer with Internet and Frequency of Internet Use*

Research has shown that people having access to a computer with Internet were more likely to use an OGSS as this was seen to be a prerequisite to utilising such a service. In addition, it was suggested that people that use the Internet frequently, daily or thrice a week were more likely to use an OGSS.

The results of the survey compares favourably with the suggested theory in that the majority of the people that were willing to use an OGSS had access to a computer with Internet.

In terms of the frequency of use, this research suggest that a large number of users indicated that they utilise the Internet daily with a fair portion suggesting that

they use it weekly. This differs slightly from previous research conducted, which shows a higher frequency of usage in the European countries, Australia and the US.

From Figure 36, it can be seen that in South Africa there are between 50 to 200 personal computers per 1000 inhabitants, where as in many of the first world countries such as the US, Europe and Australia there are more than 200 personal computers per 1000 inhabitants. Furthermore, it can be seen from Table 14, that South Africa is ranked 74th in the world in terms of the number of personal computers per country, which suggest that many of the South Africans that use the Internet normally use this service at their place of work. Thus, it can be concluded that access to a personal computer from the home would be a major factor that could influence the frequency of Internet usage.

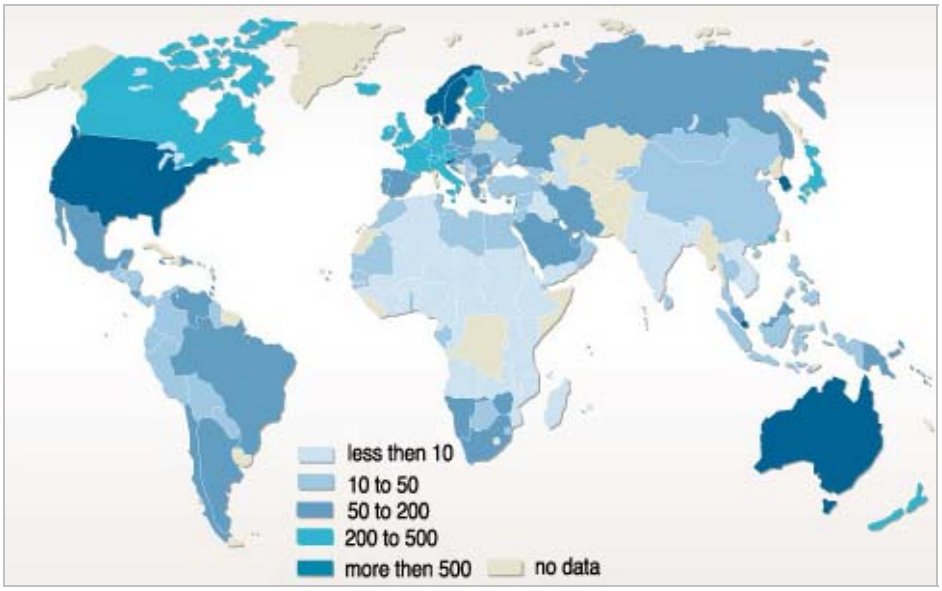


Figure 36: Number of Personal Computers per 1000 People

(WorldBank 2006)

Table 14: Number of Personal Computers per Country

(NationMaster 2006)



#1	Switzerland	864.584 per 1 million people	2005
#2	San Marino	857.143 per 1 million people	2004
#3	Sweden	763.012 per 1 million people	2004
#4	United States	762.152 per 1 million people	2004
#5	Israel	740.354 per 1 million people	2004
#6	Canada	699.928 per 1 million people	2004
#7	Australia	682.859 per 1 million people	2004
#8	Netherlands	682.36 per 1 million people	2004
#9	Denmark	655.968 per 1 million people	2004
#10	Luxembourg	634.977 per 1 million people	2005
#11	Singapore	620.91 per 1 million people	2002
#12	Austria	606.804 per 1 million people	2005
#13	Hong Kong	600.901 per 1 million people	2005
#14	United Kingdom	599.823 per 1 million people	2004
#15	France	574.968 per 1 million people	2005
#16	Norway	572.741 per 1 million people	2004
#17	Germany	545.347 per 1 million people	2004
#18	Korea, South	544.921 per 1 million people	2004
#19	Bermuda	543.366 per 1 million people	2002
#20	Japan	541.628 per 1 million people	2004
#77	South Africa	84.584 per 1 million people	2005
#78	Argentina	83.395 per 1 million people	2004
#79	Venezuela	82.099 per 1 million people	2004

5.4.2 *Frequency of Grocery Shopping*

Prior research suggest, that the frequency at which a person conducted their grocery shopping, played a major role in determining the likelihood of such a person using an OGSS. The results of this OGSS survey differs from the prior literature in this regard as there was no clear indication from the survey conducted, that the frequency of the grocery shopping activity influenced whether a person would use an OGSS. One possible reason for this is that although there are quite a few branded grocery stores like Pick n Pay, Checkers and Woolworths , there are also a large number of smaller shops and grocers where many South Africans purchase their daily essentials like bread and milk. According to SpazaMedia (2005), there are more than 100 000 informal shops in South Africa, with an estimated 40 000 located in Gauteng and collectively having a turnover of more than R7 billion. Thus, it seems that the South African consumer purchases products at different frequencies depending on the particular needs at a point in

time and therefore the frequency of shopping does not seem to impact on the willingness to use an OGSS.

5.4.3 *Shopping at Different Stores*

Research conducted in this regard suggest that generally, a person who purchases groceries at various stores is searching for better value for money and thus an OGSS would greatly assist in this regard. From the survey conducted as part of this research, it was found that the potential South African OGSS user rarely shopped around for lower prices or better value for money. A possible explanation for this could be that the grocery shopper has the perception that irrespective of the grocery retailer visited, the average price of a basket of groceries is the same. Thus, shopping at different stores would not be a typical behavioural characteristic of a potential South African OGSS user.

5.4.4 *Major Food Shopper*

The potential South African shopper that is likely to use an OGSS would likely be the major grocery shopper in the household as indicated by the survey that was conducted. This behavioural characteristic is similar to the results found in a prior study, whereby those users indicated that they would use the service to maximise their time for other activities and for relaxation. In addition, the major grocery shopper is more than likely working a full day, is time constrained and thus would be looking to minimise the time wasted on grocery shopping.

5.4.5 *Shopping Time*

Although there was some discrepancy in previous research studies pertaining to the effect of long grocery shopping time on peoples willingness to use an OGSS, it was concluded that this factor would positively influence people to use such a

service. Within the South African context, a similar result was found, whereby the majority of people that indicated that they were willing to use an OGSS were spending between 30 minutes to over 2 hours conducting their grocery shopping. One possible explanation is that such people can see a potential time saving benefit of using this service, as the groceries are selected, paid and delivered to your door. Another potential benefit of using an OGSS is that the level of frustration and stress of standing in long queues could be reduced or even eliminated.

5.4.6 *Conclusion*

It was concluded that the behavioural profile of a South African person that is likely to use an OGSS would have access to a computer with Internet. Although South Africa has a relatively high cost associated with Internet access, the frequency of accessing the Internet was not a major influencer of using an OGSS. This was mainly due to many working class South Africans having Internet access at there place of work, or at Internet cafes.

Shopping time was found to be a significant factor that influenced a South African user's willingness to use an OGSS. Again, the key reason for this was the fact that an OGSS would save the user valuable time and possibly much frustration. In addition, being the major grocery shopper in the family was found to be a critical factor as this person also has work commitments and was time constrained, thus such a person would look to exploit opportunities that would save time.

Two behavioural characteristics that were found not to influence the adoption of an OGSS was the frequency at which the person shopped and the shopping at different stores. The reason given why the frequency of shopping was not significant was that there was easy access to a large number of grocery stores, thus users could shop at whatever interval depending on their needs at a particular point in time. The shopping at various stores was not seen to be important, as there exists a perception amongst shoppers that although prices vary from item to item in different stores, the average price of a basket of goods is almost the same.

Thus, shopping around for bargains or specials was considered to be a waste of valuable time.

5.5 Discussion of the Factors that Affect the Adoption of an OGSS

5.5.1 *Introduction*

The results of the CFA performed on the data obtained from the survey instrument concluded that the five factors initially proposed were indeed critical factors that could influence or affect the adoption of an OGSS in South Africa. These factors are discussed and compared with the observations and conclusions that were obtained from prior studies that were conducted in Australia, Europe and the US.

5.5.2 *Perceived Usefulness/Benefits*

Prior research indicate that OGSS users' primary reason for using such a service was that they perceived it to provide them with substantial benefits. Such benefits included perceived time saving, greater convenience, cost saving, provision of additional information, potentially better planning and the ability to provide assistance to the physically disabled or elderly.

The questions or items in the survey developed for this study, that attempted to measure the validity of the perceived usefulness/benefit construct is shown in Table 15.

Construct	Variable Name	Attribute	Question	Loading	Rank
Perceived Usefulness	PU1	Time	Using an Online Grocery Shopping Service can save me a lot of time		3
	PU2	Convenience	Using an Online Grocery Shopping Service can make my grocery shopping easier or more convenient		3
	PU3	Cost	Using an Online Grocery Shopping Service can save me money		5
	PU4	Planning	Using an Online Grocery Shopping service will allow me to see what I require and better plan and buy what I need		4
	PU5	Information	An Online Grocery Shopping Service will possibly supply me with more product information		5
	PU6	Physically Disabled	Using an Online Grocery Shopping Service can overcome the obstacles for physically disabled people		2
	PU7	Elderly People	Using an Online Grocery Shopping Service can overcome the obstacles for elderly people		1

Table 15: Perceived Usefulness/Benefits

The results from the factor analysis confirmed that all of the items were valid measures of the perceived usefulness/benefit construct, thus implying that a South African person believes that the items mentioned in Table 15 are in fact potential benefits provided by an OGSS.

5.5.2.1 *Perceived Time Saving*

The perceived time saving benefit item, which was found to be a critical benefit in this study, is similar to what was found in other research conducted. As mentioned in the demographic and behavioural profiling discussion, a key characteristic of an OGSS user is one who is time constrained due to work and family commitments. Thus, such a person would welcome such a service, as this would allow them to reduce their time spent purchasing groceries. Generally, when people indicate the time it takes them to shop, they do not include the travelling time and the time to park the car and pack the groceries once purchased. Thus, one could possibly add a further half an hour to the grocery shopping activity, which could be better utilised if one has adopted an OGSS. One particular concern raised in the comment section of the survey was that, if the delivery service was not punctual in delivering the products at the correct time, then one could possibly waste time waiting for the

delivery. Thus, if such a service is implemented on a large scale, time to deliver would be paramount to the success of the OGSS.

5.5.2.2 *Perceived Convenience*

The CFA also concluded that perceived convenience was another important benefit to the South African end user, which could influence their decision to use an OGSS. Again, this compares well with the literature, which also suggest that the convenience benefit would promote the usage of an OGSS. Within the South African context, convenience could be defined as not experiencing high levels of frustration that is caused by shopping in narrow aisles that are congested, wasting time looking for items, experiencing stock out on products and finally waiting in long queues to conclude the transaction. Convenience could also be described as getting the groceries delivered to your door instead of getting into a motor vehicle, driving to the store, finding parking and then conducting the shopping activity (Morganosky and Cude 2000). Although an OGSS can make grocery shopping more convenient, the provider of such a service must ensure that the Internet interface is easy to use, the correct products must be delivered timously and the quality of the products must meet or exceed the customers expectations. Failure to do so will result in the consumer feeling more frustrated and thus switching back to the original service of physical grocery shopping.

5.5.2.3 *Perceived Cost Saving*

Within the South African environment, the perceived cost saving element was found to be a relatively lesser important attribute of the perceived benefits offered by an OGSS. Although this attribute was not the most critical, it was however, considered to be an important element that could affect the adoption of an OGSS. These results compared well with prior research, which highlighted that cost savings could promote or hinder the adoption of an OGSS. A possible reason for the perceived cost saving is that consumers would only buy necessary items or items that they actually need. Generally, when shoppers go into grocery stores they tend engage in impulse shopping and normally end up with items that they did

not really need or luxury items, which they would probably never use. Thus, an OGSS will probably result in users purchasing fewer items as compared to shopping in a physical grocery store. If this were true, one would question why traditional retailers would use this form of selling if it would result in fewer sales. If an OGSS is widely adopted, traditional retailers could possibly make similar profits but instead of increasing sales, they would look at lowering operational costs in the form of reduced staff and trading space. With an OGSS, shoppers would be able to compare prices offered by the various retailers, look for special offers and possible discounts, which would result in potential cost savings for the user.

5.5.2.4 *Planning*

The ability to provide for better planning offered by an OGSS was found to be an important element of the perceived benefit factor. Although it explained relatively less than the other items of the perceived benefit factor, the South African grocery shopper had recognised that an OGSS would make planning easier. This aspect compared favourably with prior research, which also suggest that OGSS users considered the planning aspect to be a beneficial factor. Shopping for groceries online allows the users to not only conduct this activity in the comfort of their homes but also allows the user to check what they actually have vs. what they require. This will result in the OGSS user purchasing fewer items as compared to shopping in a physical store.

5.5.2.5 *Additional Information*

The additional information attribute was found to be of slightly lesser importance in terms of the perceived benefit factor. However, South African users did suggest that an OGSS could provide additional information, which could benefit the users of this service. This compared well with the theory, which indicated that people in other countries were willing to use an OGSS for the additional information benefit.

According to Quantec (2008), food inflation has increased significantly over the past five years as shown in Figure 37a. In addition, the input cost has increased

dramatically in relation to the consumer price as illustrated in Figure 37b, which suggest that suppliers of raw materials and manufacturers are under pressure in terms of operating costs and profitability. Although in comparison to the US, South African food prices have not increased as much, as shown in Figure 37b, the price inflation has been significant over the past five years and the trend looks to continue into the future.

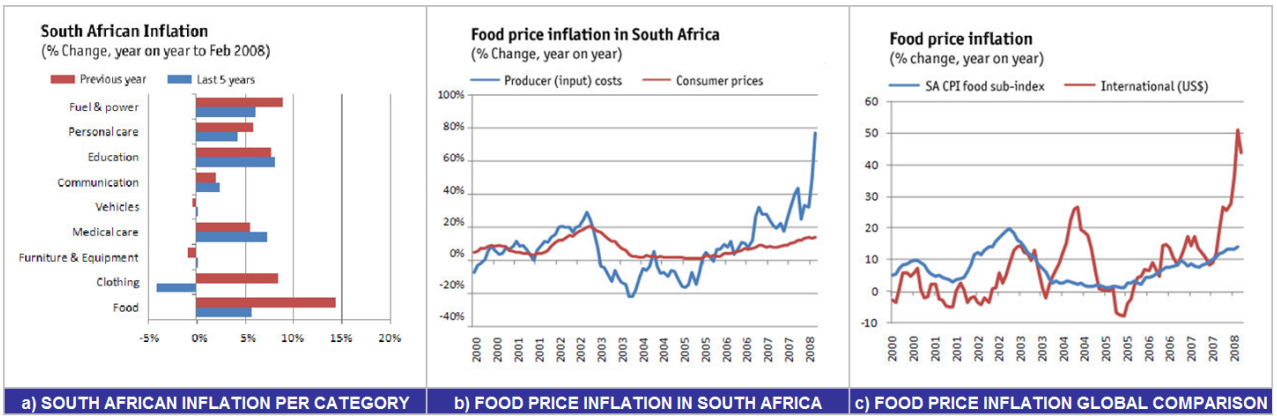


Figure 37: Food Inflation Trends

(Quantec 2008)

In this environment, with the high inflationary figures, the price of food has increased dramatically over the past few years, which has resulted in consumers being more price, quantity and quality sensitive. The average South African consumer has a limited food budget and under low price conditions, could shop and still be assured that they would be able to afford it. With the prevailing conditions, an OGSS would allow the users to keep track of expenditure while they shop, thus allowing them to better manage their grocery budgets.

A second major advantage to shopping online is that a grocery shopper could compare ingredients in products for nutritional information. According to a study conducted in the US, there is a major trend towards people realising the importance of eating healthy and this study found that Americans are starting to look for healthy meal options (Patrick and Nicklas 2005). An OGSS has the ability to compare kilojoules, fats and carbohydrates in products, which will provide highly

beneficial information to the user. In addition, one will be able to obtain and purchase products that belong to a product portfolio, such as all products approved by the heart foundation, or low GI(glycememic Index) products and diabetic products.

Further additional information pertaining to alternative product brands or better value for money products or price specials could provide additional beneficial information. One major benefit that additional information in the form of previous shopping lists would bring, is that it would allow users to see what they purchased previously thus providing them with a means of completing this activity more efficiently.

For grocery store companies, an OGSS could become a tool that could be used to provide the user with more information, more quickly and efficiently and as a channel for promoting better offerings and value to its customer base.

5.5.2.6 *Physically Disabled and Older People*

The physically disabled and older people items were found to be the ones that users mostly agreed, would be a primary perceived benefit of an OGSS. This compares favourably with the research conducted in other countries, as one would generally expect that for such groups of people, since they have limitations to physical grocery shopping, an OGSS would benefit them extensively.

5.5.3 *Perceived Ease of Use*

The perceived ease of use factor was found to be an important aspect that could influence the adoption of an OGSS in South Africa with all of the four items as shown in Table 16 contributing almost equally to explaining the relevance of this factor.

Table 16: Perceived Ease of Use

Construct	Variable Name	Attribute	Question	Loading	Rank
Perceived Ease of Use	PE1	Ease of Use	Online Grocery Shopping is/might be easy to use		4
	PE2	Skills Required	It is/might be easy to become skillful at Online Grocery Shopping		3
	PE3	Easy to Understand	My interaction with the process of Online Grocery Shopping is/might be clear and understandable		2
	PE4	Easy to Follow	It is/might be easy for me to follow the procedures when ordering groceries online		1

The results of this study compares well with findings from other studies, which also suggest that the perceived ease of use of an OGSS would affect the rate of its adoption. The primary reason for this similarity is that an OGSS user whether it be in another country or in South Africa, requires a method of purchasing groceries that is time efficient and cost effective. If the OGSS systems GUI (Graphical User Interface) and functionality is not user friendly, complicated to follow, difficult to understand and requires the user to spend extensive time learning to navigate and conduct the transaction, then the user in sheer frustration would no longer use this service. In essence, if the OGSS becomes more cumbersome and frustrating to use, then grocery consumers would switch back to the traditional method. Once the user has had a terrible experience with an OGSS, it is highly unlikely that such a person would ever use such a service again.

Currently the OGSS offered in South Africa by the various retailers have systems that are simple to use and easy to follow, however utilises basic technology, which does not project the look and feel that one experiences in a physical store. With the rapid advances in technology, especially in the information technology IT domain, the tools and technology are becoming available that will allow grocery retailers to enhance the OGSS systems functionality and interfaces. Virtual reality has not achieved much success due to limitations in technology Whitney et al. (2006). However, with the major advancements in IT, the tools and systems are available, that would allow grocery retailers to provide a platform that mimics a

physical store, both aesthetically and functionally. According to Whitney et al.(2006), much research and development has been conducted in the virtual reality environment, with new applications being developed and tested for online virtual grocery shopping as depicted in Figure 38. According to these authors, virtual grocery stores would greatly improve the usability and friendliness of existing OGSS applications.



Figure 38: Virtual Reality for OGSS Applications

(Whitney et al. 2006)

One major aspect of the perceived usefulness factor that would influence the adoption of an OGSS, was the current Internet infrastructure and associated cost of utilising this utility from Internet service providers (ISP's).

Within South Africa, the cost of Internet access is between 10 to 50% of the mean income, which is substantially higher than many of the first world countries as shown in Figure 39 (Aptivate 2007).

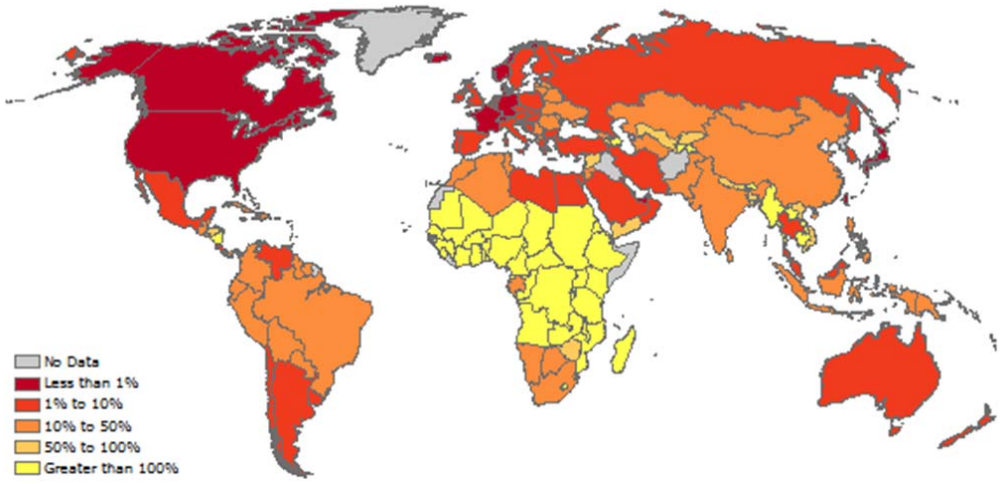


Figure 39: Cost of Internet Access as a Percentage of Mean Income in 2006

(Aptivate 2007)

No matter how good the OGSS system offered by a retailer is, if the Internet services are unreliable or not cost effective, it would have a significant impact on the utilisation and adoption of the OGSS. The reason for this would be that users would get frustrated with shopping online, due to slow network speeds or no services being available and possibly switch back to traditional methods. Thus, cellular network availability and reliability is a major issue that would directly affect the adoption of an OGSS in South Africa.

5.5.4 *Perceived Risk*

The perceived risk factor was seen to be a critical aspect that could affect the adoption of an OGSS in South Africa. This result was found to be similar to outcomes reached in studies conducted in other countries such as Australia, the US and other European countries, which suggest that the risk of using an OGSS was seen to be high, which negatively impacted on the adoption and growth of this service. Each of the four items that comprised of the perceived risk factor as detailed in Table 17, contributed to explaining this factor.

Table 17: Perceived Risk

Construct	Variable Name	Attribute	Question	Loading	Rank
Perceived Risk	PR1	Payment	I am concerned with the payment security aspects of Online Grocery Shopping		2
	PR2	Privacy	I am concerned with the privacy of my information provided when using Online Grocery Shopping		1
	PR3	Delivery Time	I am concerned with the punctuality of the delivery time of Online Grocery Shopping		3
	PR4	Quality	I am concerned with the quality of the products delivered when ordering from an Online Grocery Shopping Service		2

In South Africa, the issue of security in general is a major factor that influences a multitude of services, whether it be physical stores for banking, shopping or entertainment or conducting similar transactions online. Security risk in this country is seen to be high, even for services that have proven itself. Thus, the average South African is constantly vigilant of suspicious activity whether conducting an activity in a physical store or online. With online services, the typical South African perceives this channel to expose one to a greater amount of unnecessary financial and privacy risk. Credit card fraud in South Africa is perceived to be rife and that is when the card is used for purchases in physical stores. Using this method for purchasing and payment online is seen to be high risk and the typical South African would try to limit using a credit card to purchase online, as they cannot physically see who is assisting them.

According to Frank (2009), online fraud worldwide is on an increase and this author further indicates that in the US, four billion dollars has been lost due to online fraud as shown in Figure 40.

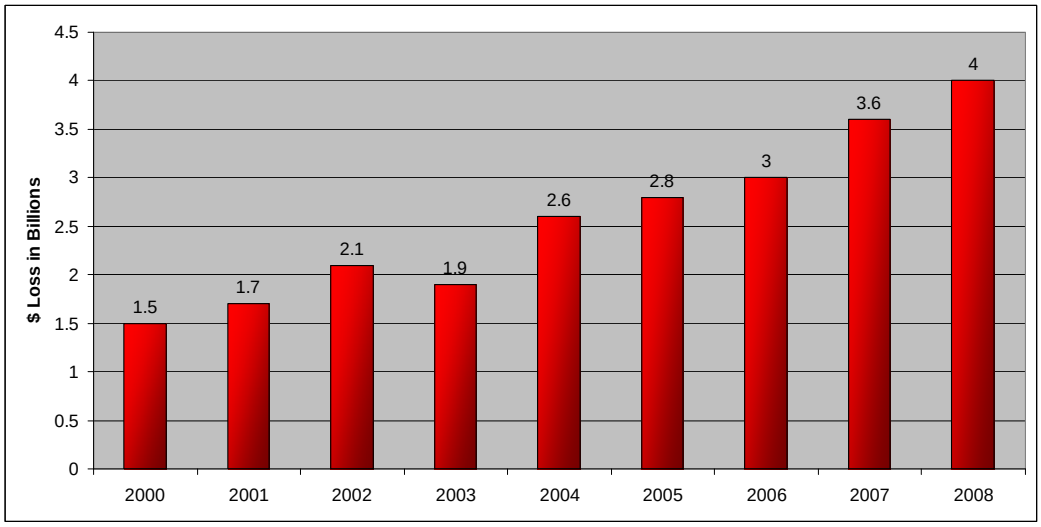


Figure 40: Online Revenue Loss due to Fraud

(Frank 2009)

According to iAfrica (2008), South African consumers are losing millions of rands every year as credit card fraud skyrocketed in South Africa from 2005 with groceries stores being the most targeted in 2008. The credit card fraud statistics in the US has been increasing steadily over the past few years from 1.7 to 3.5 billion dollars (Frank 2009). Within South Africa, credit card fraud has increased significantly in 2008, with R420 million rands being lost due to this activity (iAfrica 2008). These trends are illustrated in Figure 41.

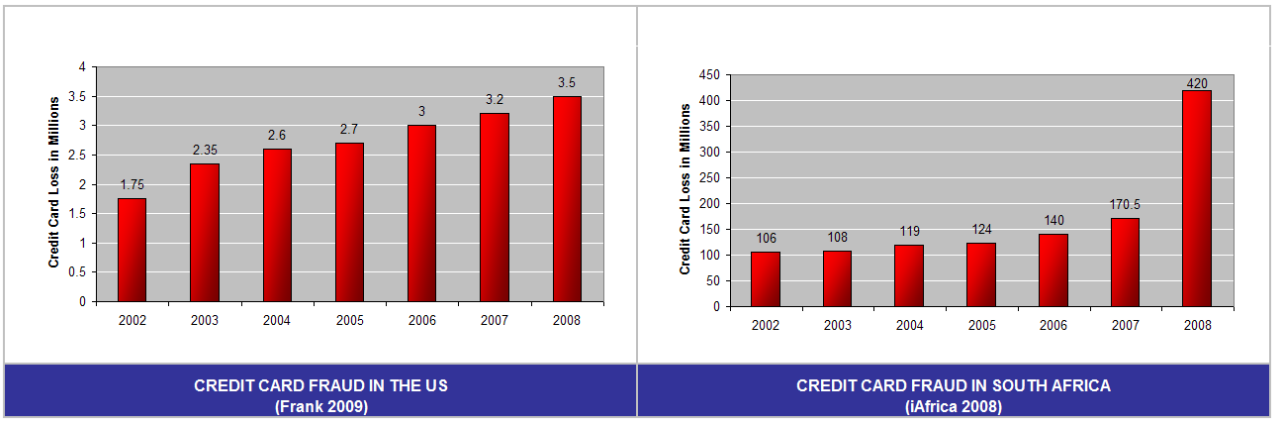


Figure 41: Credit Card Fraud in the US and South Africa

Obviously, the use of online services also depends on the maturity of the users in the country with respect to the technology. The more that people use online services the more comfortable and confident they become and thus the more likely they are to use such services. Although security software and technologies of online transactions in general has improved over the past few years, users are still not fully assured that it is safe to use, thus they would prefer to purchase groceries in a store as they feel that shopping for such products online is too risky. According to Miyazaki and Fernandez (2007), the perception of system security and the unauthorised third-party access to credit card information were seen to be the areas of greatest concern for online shoppers. In another study conducted in South Africa within the Western Cape by Cloete et al. (2002), it was found that security and legal liability were seen as major hindrances to the adoption of ecommerce by both individuals and small business users.

In South Africa, crime is extremely prevalent especially theft, hijacking, assault, murder and rape. Within this country crime, especially brutal crimes is of major concern to many South Africans, which affects the attitudes and perceptions towards many services that are being offered. Although overall burglary seems to be on a decrease, aggravated robbery is on a major increase as shown in Figure 42.

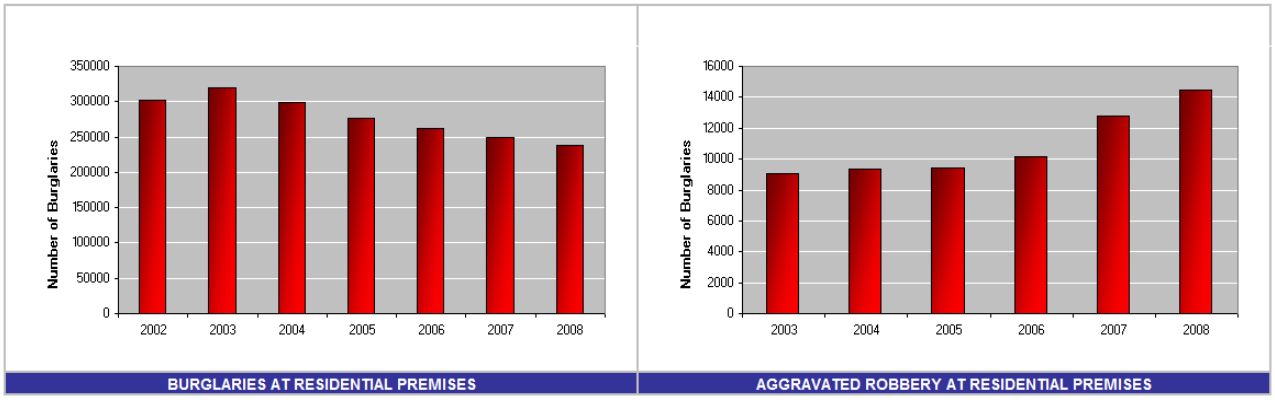


Figure 42: Crime Statistics in South Africa

(SAPS 2008)

South Africans are conscious of the fact that the chances of being robbed at home are relatively high and therefore try to limit the number of people that enter their premises. Thus, the South African person would be less accepting of home deliveries, as this could provide criminals with an opportunity to enter the home and potentially commit a heinous crime. Although, there exists a high possibility that a person could be hijacked if they purchased products at traditional stores, the South African shopper perceives this to be a lower risk than shopping online. The reason being that they feel more secure if there is a crowd around them like at a mall or shopping centre and when they get home with the products, they can rapidly enter the home, which is perceived to be a secure and safe environment.

Another aspect of the perceived risk relates to the delivery time issue, which is considered to be a convenience risk. In South Africa, service delivery is generally poor and thus the expectation in terms of delivering on time is perceived to be low. As mentioned in Section 5.5.2.2, the working class South African is time constrained and thus would not be willing to wait around at home for deliveries. Thus, a grocery retailer that wants to be successful in this market segment would need to ensure that the OGSS model implemented has a robust reliable and efficient logistics system.

Furthermore, there could be the risk of receiving poor quality or incorrect products. This would result in the products being returned and the correct ones being re delivered. South Africans are used to buying fresh food, which they carefully inspect for defects and only take what they perceive to be the best quality and value for money. Thus, if a retailer wants to be successful in this segment, pictures that are shown on the OGSS website would have to be representative of what will be delivered or else a negative image will be created in the mind of the consumer, which would reduce this persons affinity to use such a service again.

5.5.5 *Visibility*

The visibility element was found to be a factor that would influence the adoption of an OGSS in South Africa. This result compares favourably with prior research in that it also suggest that the influence of those around you will affect your willingness to use an OGSS. Table 18 illustrates that all three items that were used to confirm the visibility factor contributed almost equally in this regard.

Table 18: Visibility

Construct	Variable Name	Attribute	Question	Loading	Rank
Visibility	VS1	Family and Friends Visibility	I know of others that are using Online Grocery Shopping		2
	VS2	Community Visibility	In my organisation/institution/school, one easily sees Online Grocery Shopping being used		3
	VS3	Social Visibility	I have seen Online Grocery Shopping being used outside my organisation/institution/school		1

Within South Africa as well as in other countries, people generally follow trends that are set by others. The more people see products and services being utilised, the more likely they are to use such services. In addition, one of the major activities of most companies marketing departments is to ensure that the customer is continuously being reminded of products and services on offer through various marketing and advertising campaigns. Thus, people are drawn into buying and utilising products and services, which in turn influences other people to use such products or services.

5.5.6 *Social Influence*

The social influence factor was confirmed to be a factor that would influence the adoption of an OGSS in South Africa. This result was similar to that found in previous research, which suggest that the influence that a grocery shoppers family,

work colleagues, community and social friends, directly affected that persons behaviour and attitude towards using an OGSS. All three groups of people namely the person's community, work and family/friends contributed almost equally in explaining the influence of this factor on the adoption of an OGSS in South Africa, as shown in Table 19.

Table 19: Social Influence

Construct	Variable Name	Attribute	Question	Loading	Rank
Social Influence	SI1	Community Peer Pressure	I will use Online Grocery Shopping if the service is widely used by people in my community		3
	SI2	Work Peer Pressure	I will adopt Online Grocery Shopping if my boss/manager/acquaintance uses it		2
	SI3	Family and Friends Pressure	I will adopt Online Grocery Shopping if my friends/relatives use it		1

The reason that social influence is seen to be a major factor that could influence the adoption of an OGSS in South Africa is that these people, like most others in the world follow market trends. Family, friends, work colleagues and the community in which they live, influences almost every persons thinking, behaviour and actions. In South Africa, communities and families are much more well knit and often spend more time together compared to people in overseas countries in Australia, Europe, and the US. Thus, if members of the community, family or even extended family adopt and promote the OGSS, there exists a fairly high probability that others will do the same. Similarly, if these few members have a terrible experience they would relate this to others, which could negatively affect the adoption of this service.

Within the work environment both in South Africa and abroad, one would expect a similar behaviour amongst colleagues at work, whereby there are high levels of competitiveness and images to maintain. Thus, if one employee is using an OGSS, which is seen to be cutting edge or trendy, other employees would be more willing to use the service so as to fit in with the rest. However, as with family and friends,

any change in the opinion of the service in the workplace could cause others to react in a similar manner.

5.5.7 *Conclusion*

It was proposed that there were five major factors that could possibly influence the adoption of an OGSS in South Africa. The results of the CFA confirmed, that within this country, there were indeed five dominant factors that could influence the adoption of an OGSS. These five factors were the perceived usefulness/benefits, perceived ease of use, perceived risk, visibility and social influence.

The various attributes of the perceived benefits were discussed and it was concluded that the time and convenience aspects were the major influencers of the perceived benefit factor. It was suggested that the South African person is normally time constrained and that an OGSS could provide such a grocery shopper with the potential to reduce the time spent on shopping, which could be used for more important aspects such as spending time with children, family and friends.

The perceived ease of use factor was shown to be an important element of an OGSS, which was classed as an order qualifier or prerequisite for people to use this service. Issues such as the OGSS systems speed, difficulty and complexity of use were found to be elements that could quickly reduce the adoption of such a service in the South African environment.

The perceived risk factor was found to be one that could severely hamper the adoption of an OGSS in South Africa. The underlying reasons for this was the perceived high risk in using online services due to credit card fraud, the possibility of being robbed when groceries are delivered, the poor service delivery and the possibility of receiving sub standard or incorrect products.

The visibility factor was found to be a relatively important aspect and it was concluded that the visibility of the adoption and usage of such a service would by itself, drive others to adopt this service.

The social influence factor was found to be an essential factor that could influence the rate of adoption of an OGSS. It was suggested that because the South African family and social unit was more closely knit, any positive or negative experience by one or two of the family members could drastically affect the entire families/friends opinion of this service. In addition, if the service was found to be trendy by colleagues in a work place, it could push others in this environment to adopt this service.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The first part of this chapter summarises the research findings, presents the conclusions and provides recommendations with regards to the adoption of an OGSS in South Africa.

Secondly, suggestions are proposed for future research that could potentially add great value to the thinking and insights into this body of knowledge. Such further studies could explore in more detail and expand on the findings and conclusions presented in this report.

6.2 Conclusions of the Study

The primary purpose of this study was two fold, firstly to profile the demographic and behavioural characteristics of the typical South African person that would potentially subscribe to an OGSS. Secondly, to identify and confirm the factors that could influence the adoption of such a service within this country.

Table 20: Demographic Profiling- Proposition vs. Findings

Proposition Number 1	Research Findings
The demographic profile of a South African person more likely to use an OGSS is that they would: • Be between the ages of 25 and 44, • be female, • be more educated, • earn a higher income, • have a family in the household, • have children and • be married.	The findings of this research indicate that the demographical profile of a potential South African OGSS user is that they would: • Be between the ages of 30 and 49, • be either male or female, • be more educated, • would earn a higher income • would have a larger family in the household, with the number of people being slightly higher • have children, having slightly more children than other first world countries • be married
Result: This proposition is **ACCEPTED**, with the exception of the married parameter	

LEGEND: **Deviation/s from propositions**

In terms of the demographic profile it was concluded that the person would be a between the ages of 25 to 44 years, would have a tertiary qualification and would earn between R10 000 to R65 000 net income per household per month. In addition, such a person would be married and have a larger family with more children than that found in studies conducted in the first world countries. This was attributed to more closely knit family units, as well people getting married at younger ages. In comparison to the studies that were conducted in other countries, the demographical profile was quite similar with minor differences in the bottom end of the age group and the number of people and children per household. Gender in previous studies was found to be an important characteristic of an OGSS; however in South Africa according to this research, this was not the case as the person could be either male or female.

With the exception of the gender, all other parameters of a typical South African OGSS are similar to that proposed and thus proposition number one is ***Accepted*** as shown in Table 20.

Table 21: Behavioural Profiling- Proposition vs. Findings

Proposition Number 2	Research Findings
The behavioural profile of a South African person more likely to use an OGSS is that they would:	The findings of this research indicate that the behavioural profile of a potential South African OGSS user is that they would:
• have access to a computer with Internet,	• have access to a computer with Internet, however using the internet service at their place of work,
• visit the grocery store quite often,	• visit the grocery at different frequencies,
• shop at different stores,	• shop mostly at the same stores,
• be the major shopper in the family and	• be the major shopper in the family and
• spend more time in the grocery store.	• spend more time in the grocery store.
Result: This proposition is **PARTIALLY ACCEPTED**	

LEGEND: **Deviation/s from propositions**

This study concluded that certain behavioural characteristics of a potential OGSS user compared well with previous studies with a few deviations from the initial propositions. Access to a computer with Internet was found to be a significant factor, which one would normally expect, as this is a prerequisite to using an OGSS. The frequency of Internet usage was found not to be a major influencer, as many of the South Africans only have access to the Internet at their place of work and thus used this service on an ad hoc basis. Time taken to conduct the grocery shopping activity was a major reason for people to use an OGSS. This was ascribed to many South Africans working long hours, with time being a scarce commodity, which made an OGSS an attractive option as it could potentially provide additional time benefits. Although the frequency of shopping and shopping at different stores characteristics were found to be important in previous studies, within South Africa this was not found to be a critical aspect. This was seen to be

due to the many stores that are available, thus people had various options available depending on their schedules. South Africans in this study indicated that they did not shop around for better prices or value, as they believed that although most stores have specials, the average price of a basket of products was the same at the different stores.

As can be seen from Table 21, three of the five parameters were similar to what was proposed in terms of the behavioural profile of a South African OGSS user. Since two of the parameters namely the frequency of shopping and shopping at different stores were found not to be of importance, proposition number two is ***Partially Accepted***

Table 22: Factors Affecting Adoption - Proposition vs. Findings

Proposition Number 3	Research Findings
The following factors are likely to affect the adoption on an OGSS: • perceived benefits/usefulness, • perceived ease of use, • perceived risk, • visibility and • social influence.	The findings of this research indicate that the following factors would affect the adoption of an OGSS in South Africa: • perceived benefits/usefulness, • perceived ease of use, • perceived risk, • visibility and • social influence.
Result: This proposition is **ACCEPTED**	

LEGEND: **Deviation/s from propositions**

All of the five factors proposed that were derived from prior research namely, perceived usefulness/benefits, perceived ease of use, perceived risk, visibility and social influence were found to be factors that would affect the adoption of an OGSS in South Africa.

Some aspects of each of the factors were classed as order qualifiers and order winners depending of the stage in the lifecycle of an OGSS. These attributes are

depicted in Figure 43. As can be seen from this figure, some factors and items were flat line order qualifiers, where as others changed from order qualifiers to order winners as the service matures.

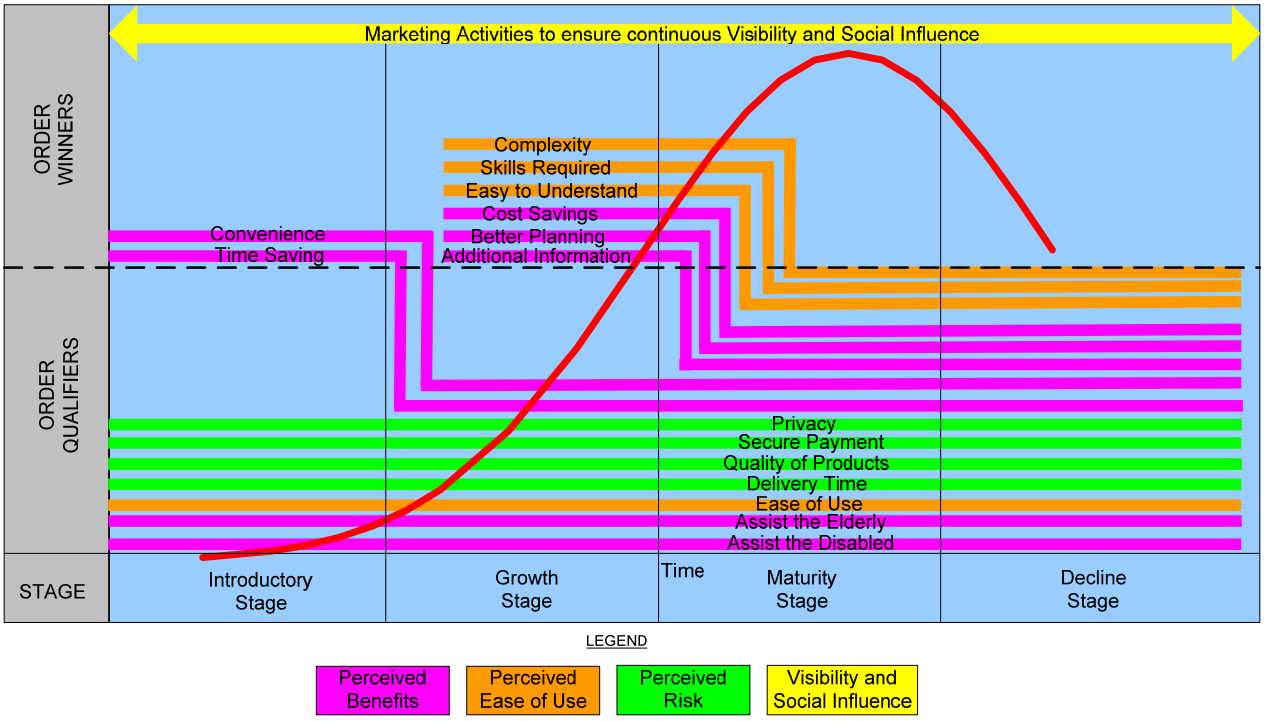


Figure 43: Factors Affecting the Adoption of an OGSS

Perceived usefulness/benefits was found to be a critical factor that would influence a South African to use an OGSS. From the various attributes of perceived benefits, perceived time saving was found to be an aspect that South Africans placed great value on as they had hectic lives with limited time. Thus, they believed such a service would help them save time for grocery shopping, which they could utilise more effectively. Convenience was found to be an element that was important to grocery shoppers, as it could reduce frustrations normally experienced (long queues, stock outs) in traditional grocery stores. The assistance that an OGSS could provide to the old and disabled was considered highly important, since such people are generally immobile. Potential cost savings, better planning and additional information were found to be important aspects, however were

considered to be secondary benefits i.e. “nice to haves” that would become important once the OGSS market matures.

The perceived ease of use attribute was seen to be an item that needed to be in place in order for the service to be initially accepted. Other attributes such as skills required, difficulty in understanding and complexity were elements that would affect the retention of the OGSS users.

The perceived risk factor was found to be a factor that could seriously affect the adoption of an OGSS by South Africans. The underlying reasons that made this factor so important was primarily attributed to credit card fraud and the probability of being robbed at home. The risk of poor quality products and incorrect products were present, however was not considered to be a major contributor to the perceived risk factor.

The visibility and social influence factors were found to directly contribute to the adoption of an OGSS. This was attributed to these factors acting as a means or channel for propagating the message of the perceived benefits, ease of use and reduced risk factors, thus contributing to the increased rate of adoption of an OGSS.

Since all the proposed factors that could influence the adoption of an OGSS in South Africa were found to be important and pertinent to this country, proposition number three is ***Accepted***.

6.3 Recommendations

As suggested in Chapter 1, the primary stakeholders that would be interested in the outcome of this study are grocery retailers who have already, or are planning to enter the OGSS retail space.

This research has found that the typical demographic characteristics of a potential South African OGSS user are that they would:

- Be between the ages of 30 and 49,
- have a tertiary qualification,
- earn a net household income of more than R 10 000,
- have a larger number of people per household (more than 4),
- have at least 1 to 2 children per household and
- be married.

In addition, the behavioural characteristics of such users were found to be that they would:

- have access to a computer with Internet,
- be the major food shopper in the family and
- and tend to take between 30 minutes to over 2 hours to conduct the grocery shopping activity.

Demographical information would be useful to retailers that are, or want to operate in this space as it would allow such companies to better segment their markets. This would allow companies to develop focused marketing and advertising campaigns, which would be directed at these market segments that were identified as providing the most revenue and profit to the company.

Behavioural information of this nature also provides grocery retailers with a better understanding of the target market, which they would be trying to identify and profile. Information on the number of inhabitants, the number of children and whether the person was the major shopper in the family, could be used to develop customised online specials or packages for such families. The grocery shopping time provides retailers with insight into what aspects they should promote when advertising the merits of using an OGSS.

Combined the demographical and behavioural profile allows retailers to identify profitable segments in the grocery market, which gives them the insight into developing a strategy that targets these markets, with the purpose of making the service feasible for consumers, yet profitable for the company.

The identification and confirmation of the factors that affects the adoption of an OGSS, provides grocery retailers with information on what is expected and what is required to make this service a success. The primary benefits of saving time, increased convenience and benefits for the old and disabled highlights to retailers as to what they should focus on when developing their value proposition. These issues would form the core of the offerings with benefits of better planning, cost saving and additional information providing the role of secondary benefits.

The perceived ease of use would provide critical information to retailers in that is would highlight the fact that the OGSS interface must follow the KISS (keep it simple silly) principle, thus it must be easy to use, easy to follow and simple to understand.

The perceived risk factor emphasises what the order qualifiers for such a service would be. Thus, if a retailer hopes to be successful in this segment, they would need to ensure that the system they implement has a strong and robust security and user authentication/verification component. In addition, such retailers would need to have an efficient, effective and secure logistics system that would ensure timous delivery, accuracy of the products ordered and guaranteed safety. The perceived risk factors also suggest that retailers would need to secure sufficient Internet bandwidth and invest in state of the art information technology systems, to ensure availability of the service and speed of access of purchasing online. Thus, the perceived risk factors caution grocery retailers that if the order qualifiers are not met, the OGSS will face an early death.

The visibility and social influence factors provide underlying reasons that affect the adoption of an OGSS. This information highlights to retailers that they would need to seriously market and advertise the service to get more people interested in using

this service. Initially, such companies would need to commit substantial resources to get the service operational and to grow the market. Once people see others using it, a snowball effect would most likely occur, provided that the order qualifiers are met and the order winners are substantial. The more people see a product being used by others (visibility) and the more others in their social circles adopt this service, the more likely they are to use and adopt this service.

The profiling together with the identified factors provides beneficial information to grocery retailers to ensure that if they enter the OGSS segment, they would be aware of what is required to make this service a success. Such a service could provide grocery retailers with access to other markets, perhaps in different geographic locations, as the service is not limited to physical stores. In addition, retailers could benefit from reduced overhead costs in the form of shop rentals or bonds, reduced wages and salaries, which comes from fewer numbers of staff or better utilisation of resources. In addition, an OGSS might provide the retailer with better channels for communicating its specials, promotions or value offerings. Essentially an OGSS provides a grocery retailer with an opportunity to increase profits by both increasing sales from new markets and reducing operational costs.

6.4 Suggestions for Further Research

One possible avenue for future research is to investigate the reasons why grocery retailers have not really marketed and promoted their OGSS's in South Africa. Although OGSS's has been around in this country for a few years, the area of service has not increased substantially. The companies that are in this market segment are seemingly not placing a huge emphasis on this channel as compared to normal traditional grocery shopping. Thus, the opportunity exists to find out the reasons why these retailers are not exploiting this sales and marketing channel. Possibly such companies might feel that consumers would not purchase as many products through impulse buying, which could result in a drop in revenue for the company. Also, their pricing or specials might be highly visible, which allows shoppers the opportunity to compare products, prices and value for money. Thus,

the user is more likely to switch between vendors, seeking and comparing offerings. In addition, retailers might believe that once the OGSS market has been developed, the barriers to entry for this market would be lower, thus new entrants could enter the market much easier thereby increasing competitive pressures within the industry.

A further possible opportunity for future research is to explore the South African grocery shoppers perception, that irrespective of which retailer you use, the average basket of products is almost the same. Generally, South African consumers believe that grocery retailers advertise and promote specials on certain products and make up for this lost profit by increasing the price of other products. This type of perception typically results in grocery shoppers not really looking around for value and often such people stick to the retailers which they know. This type of research could provide valuable information to ordinary consumers, which could cause them to migrate to different retailers.

Another area of interest that could be beneficial, is to explore what OGSS models have been developed and implemented in different countries. As mentioned in this research, some critical order qualifiers need to be satisfied to ensure that the service offered is effective and efficient. Such models would need to include various aspects of information, security, graphical and logistical systems. Thus analysing the models developed and used in other countries as well as developing an OGSS model for developing countries would be highly beneficial to companies that are operating in or wish to operate in this space.

One further aspect is to review the technology systems and platforms that are being employed to host an OGSS. Such research will give retailers the insight into what aspects should be considered when selecting an IT system for the OGSS applications, as such decisions could have a serious impact on the adoption of the service.

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APPENDIX 1: EMAILED AND SELF ADMINISTERED QUESTIONNAIRES

PART A: Introduction

The purpose of this questionnaire is to determine the profile of the South African consumer that would potentially use an Online Grocery Shopping Service (OGSS) and to identify factors that may foster or hinder its adoption in South Africa.

1	Have you ever used an Online Grocery Shopping Service to buy your groceries ?	Yes	No	
2	Would you ever consider using and Online Grocery Shopping Service ?	Yes	No	NA

PART B: Demographic Profiling

Please complete the following questions

1	Please indicate your age group ?	18-29	30-39	40-49	50+	
2	Please indicate your gender ?	Male	Female			
3	Please indicate your race ?	African	White	Indian	Coloured	Other
4	Please indicate your educational background ?	less than Matric	Matric	Degree/ Diploma	Masters PhD	
5	Please indicate your combined net monthly family income ?	< R2 000	R2 000 to R10 000	R10 001 to R30 000	R30 0001 R50 000	> R50 000
6	Please indicate how many people in your household including yourself and children ?	1	2	3	4	>5
7	Please indicate how many children in your household ?	0	1	2	3	more than 3
8	Please indicate your marital status	Single	Married	Divorced		

PART C: Behavioural Profiling

Please complete the following questions

1	Do you have access to a computer equipped with the internet ?	Yes	No			
2	If you have internet , how often do you use it ?	Daily	Weekly	Monthly	Never	
3	How often do you go grocery shopping ?	More Than once a Week	Once a Week	Every 2nd Week	Once a Month	
4	Do you go to more than one store to find the best buys or try to get lower prices ?	Always	Almost Always	Sometimes	Seldom	Never
5	Please indicate if you are the major food shopper in your household ?	Always	Almost Always	Sometimes	Seldom	Never
6	How long does it take you to complete your grocery shopping ?	Less than 30 minutes	30 - 60 minutes	1 to 2 hours	more than 2 hour	

PART D: Adoption Factors

Please give your opinion on the following statements

	Item Description	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Perceived Usefulness					
1	Using an Online Grocery Shopping Service can save me a lot of time					
2	Using an Online Grocery Shopping Service can make my grocery shopping easier or more convenient					
3	Using an Online Grocery Shopping Service can save me money					
4	Using an Online Grocery Shopping service will allow me to see what I require and better plan and buy what I need					
5	An Online Grocery Shopping Service will possibly supply me with more product information					
6	Using an Online Grocery Shopping Service can overcome the obstacles for physically disabled people					
7	Using an Online Grocery Shopping Service can overcome the obstacles for elderly people					
	Perceived Ease of Use					
8	Online Grocery Shopping is/might be easy to use					
9	It is/might be easy to become skillful at Online Grocery Shopping					
10	My interaction with the process of Online Grocery Shopping is/might be clear and understandable					
11	It is/might be easy for me to follow the procedures when ordering groceries online					
	Perceived Risk					
12	I am concerned with the payment security aspects of Online Grocery Shopping					
13	I am concerned with the privacy of my information provided when using Online Grocery Shopping					
14	I am concerned with the punctuality of the delivery time of Online Grocery Shopping					
15	I am concerned with the quality of the products delivered when ordering from an Online Grocery Shopping Service					
	Visibility					
16	I know of others that are using Online Grocery Shopping					
17	In my organisation/institution/school, one easily sees Online Grocery Shopping being used					
18	I have seen Online Grocery Shopping being used outside my organisation/institution/school					
	Social Influence					
19	I will use Online Grocery Shopping if the service is widely used by people in my community					
20	I will adopt Online Grocery Shopping if my boss/manager/acquaintance uses it					
21	I will adopt Online Grocery Shopping if my friends/relatives use it					

APPENDIX 2: ONLINE QUESTIONNAIRE



1. PART A: Introduction

The purpose of this questionnaire is to determine the profile of the South African consumer that would potentially use an Online Grocery Shopping Service (OGSS) and to identify factors that may foster or hinder its adoption in South Africa.

Please complete the following questions

1. Have you ever used an Online Grocery Shopping Service to buy your groceries?

○ Yes ○ No

2. Would you ever consider using and Online Grocery Shopping Service ?

○ Yes ○ No ○ NA

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2. PART B: Demographic Profiling

Please complete the following questions

1. Please indicate your age group ?

- [ ] 18-29
- [ ] 30-39
- [ ] 40-49
- [ ] 50+

2. Please indicate your gender ?

- [ ] Male
- [ ] Female

3. Please indicate your race ?

- [ ] African
- [ ] White
- [ ] Indian
- [ ] Coloured
- [ ] Other

4. Please indicate your educational background ?

- [ ] less than Matric
- [ ] Matric
- [ ] Degree/Diploma
- [ ] Masters/PhD

5. Please indicate your combined net monthly family income ?

- [ ] < R2 000
- [ ] R2 000 to R10 000
- [ ] R10 001 to R30 000
- [ ] R30 0001 R50 000"
- [ ] > R50 000

6. Please indicate how many people in your household including yourself and children ?

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] >5

7. Please indicate how many children in your household ?

- [ ] 0
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] >3

8. Please indicate your marital status?

- [ ] Single
- [ ] Married
- [ ] Divorced

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3. PART C: Behavioural Profiling

Please complete the following questions

1. Do you have access to a computer equipped with the internet ?

- Yes
- No

2. If you have internet , how often do you use it ?

- Daily
- Weekly
- Monthly
- Never

3. How often do you go grocery shopping ?

- More Than once a Week
- Once a Week
- Every 2nd Week
- Once a Month

4. Do you go to more than one store to find the best buys or try to get lower prices ?

- Always
- Almost Always
- Sometimes
- Seldom
- Never

5. Please indicate if you are the major food shopper in your household ?

- Always
- Almost Always
- Sometimes
- Seldom
- Never

6. How long does it take you to complete your grocery shopping ?

- Less than 30 minutes
- 30 - 60 minutes
- 1 to 2 hours
- more than 2 hours

Quit Back Next



4. PART D: Adoption Factors

Please give your opinion on the following statements

1. Using an Online Grocery Shopping Service can save me a lot of time

- [ ] Strongly Agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly Disagree

2. Using an Online Grocery Shopping Service can make my grocery shopping easier or more convenient

- [ ] Strongly Agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly Disagree

3. Using an Online Grocery Shopping Service can save me money

- [ ] Strongly Agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly Disagree

4. Using an Online Grocery Shopping service will allow me to see what I require and better plan and buy what I need

- [ ] Strongly Agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly Disagree

5. An an Online Grocery Shopping Service will possibly supply me with more product information

- [ ] Strongly Agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly Disagree

6. Using an Online Grocery Shopping Service can overcome the obstacles for physically disabled people

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

7. Using an Online Grocery Shopping Service can overcome the obstacles for elderly people

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

8. Online Grocery Shopping is/might be easy to use

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

9. It is/might be easy to become skillful at Online Grocery Shopping

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

10. My interaction with the process of Online Grocery Shopping is/might be clear and understandable

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- NA

11. It is/might be easy for me to follow the procedures when ordering groceries online

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- NA

12. I am concerned with the payment security aspects of Online Grocery Shopping

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

13. I am concerned with the privacy of my information provided when using Online Grocery Shopping

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

14. I am concerned with the punctuality of the delivery time of Online Grocery Shopping

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

15. I am concerned with the quality of the products delivered when ordering from an Online Grocery Shopping Service

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

16. I know of others that are using Online Grocery Shopping

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

17. In my organisation/institution/school, one easily sees Online Grocery Shopping being used

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

18. I have seen Online Grocery Shopping being used outside my organisation/institution/school

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

19. I will use Online Grocery Shopping if the service is widely used by people in my community

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

20. I will adopt Online Grocery Shopping if my boss/manager/acquaintance uses it

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

21. I will adopt Online Grocery Shopping if my friends/relatives use it

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

22. Any other comments/suggestions about Online Grocery Shopping in South Africa

Quit Back Finished

APPENDIX 3: CONFIRMATORY FACTOR ANALYSIS USING NCSS 2007

