Customer retention strategies for the prepaid mobile telecommunications sector in South Africa

Teresa Flynn

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, 2010

ABSTRACT

This study will propose ways in which companies can focus retention strategies in the local prepaid mobile telecommunications sector. Currently there is little academic literature on this topic, even though in-house marketing research has been done by the operators.

The purpose of this research is to investigate the customer retention strategies in the prepaid mobile telecommunications sector in South Africa. This will be done by triangulation of what consumers believe is important in their retention, what the organisations deem as paramount, and what retention experts state are the motivators of retention.

Data was collected using both a survey questionnaire for consumers, and through face to face interviews with marketing management at mobile telecommunications operators, as well as independent expert consultants on the topic of customer retention.

The findings from this study were that the consumers want to keep the same cell phone number as it is part of their identity. The customer looks at the total offering when considering pricing, and not just certain costs, and prefers a prepaid model as spending is controlled in this manner. Both consumers and management agree that rewards and loyalty programs are seen as a value add, especially where they offer instant gratification. A reliable product is necessary for a consumer to stay with the company, as is accessibility to support and other products. Management realises that the total customer experience across all touch points is a retention enabler, with one really bad experience being enough cause for a customer to churn. The consumer survey indicated that customer service is a driver that all market players need to improve on. An organisation's brand allows a consumer to identify with the firm, and is more a pull factor than a push factor, unless it is perceived as dishonest or unethical. The only time a consumer's demographics came into play regarding customer behaviour was age making a difference was when using a cell phone to access the internet -

older age brackets use it sparingly if at all. Although other value added services such as SMS and MMS are used across the board. Companies model consumer behaviour, and base it on data from previous churners to identify possible churners. Of these, only profitable churners are then recognised for retention campaigns. Retention campaigns are measured for success.

The prepaid market makes up 80% of the mobile telecommunications market in South Africa, and the revenue they contribute is approximately 35% of the total. Therefore this customer base should not be neglected or ignored. Due to the demographics of emerging markets, prepaid offerings are the way of the future. The research paper finishes with several recommendations on how to enrich customer retention strategies for the prepaid mobile communication market.

DECLARATION

I, Teresa Flynn, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Teresa Flynn

Signed at ……

On the …….. day of …… 2010

DEDICATION

I dedicate this research paper to my husband, Shane Francis Flynn, who has always had great belief in me and is the wind beneath my wings. Without your support I would not have been able to complete this journey.

To my children, Raquel, St John and Shannon, I hope that you will always treasure education and knowledge, and realise that learning is never a waste of time, but allows you to make better informed decisions and to see the world in a new light.

Thank you for allowing me the time to dedicate myself to this project, and the MBA, as I know often I was not there for you when you all needed me.

ACKNOWLEDGEMENTS

I would like to thank Mark Peters for his constant support and inspiration as my supervisor. I am also grateful to Dr Anthony Stacey and Mr Pierre Coetzee in their guidance and assistance in the statistical analysis undertaken.

To my friends and extended family, thanks for your patience and understanding when I was never to be seen. To my parents, thank you for all the extra errands you helped Shane with which were my responsibility, especially when I was in Chicago.

I would like to extend my gratitude to the people who took part in the subscriber survey, as well as to the management at the various mobile network companies, and independent consultants who gave their time in interviews for this research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to investigate the customer retention strategies in the prepaid mobile telecommunications sector in South Africa.

Understanding the criteria affecting customer retention would then assist marketing directors in this sector to develop more appropriate and focused retention strategies.

1.2 Context of the study

The telecommunications industry in South Africa is the fastest growing sector of the economy, due to mobile telephony, contributing (in conjunction with transport and storage sectors) ten percent to gross domestic product (GDP) (southafrica.info 2008). The website, southafrica.info, describes the industry, stating that there are two major players, MTN and Vodacom, and two smaller player, Cell C and Virgin mobile. Virgin mobile is a mobile virtual network operator (MVNO), using Cell C as the carrier for its cellular traffic. It also informs that broadband, ADSL and 3G connectivity have become more readily available, giving cellular phone customers the opportunity to have internet access.

The new Seacom cable, which is an undersea cable connecting South Africa with Europe and India, has enabled even faster internet access(seacom.mu 2009). This cable has a bandwidth of 1.2 terabytes, 10 times the capacity of the older Telkom cable, the SAT-3 cable (safe-sat3.co.za). This larger capacity should result in cost reduction to internet access, and therefore increased affordability, and faster internet access across the telecommunications sector, including the mobile sector.

The South Africa Telecommunications Report Q4 2009 states 51.9 million cellular subscribers as at the end of March 2009 (Business Monitor International 2009). Statistics South Africa published the mid-year population estimates for 2009, for South Africa, at 49.3 million(statssa.gov.za 2009b).

Due to the market penetration being over one hundred percent (aikresearch.wordpress.com 2009), it is important for these firms to therefore retain their subscribers (Kim, Park and Jeong 2004). Kim et al (2004) believe that defensive strategies are necessary in mature markets, where firms need to concentrate on retention rather than acquisition, and in cases where subscribers do leave (churn), it should be because of factors out of these firms' control.

Ahmad and Buttle (2001) feel that customer retention needs to be incorporated into a firm's marketing management strategy, and not be seen as a resultant of the strategy; increasing customer retention rates impact negatively on customer churn rates. Payne and Frow's (1999) approach to customer retention would be to segment customers based on their current and lifetime profitability, and then apply appropriate marketing to these segments. Furthermore they advise against retaining non-profitable customers, as these customers will reduce your profits.

Coopers and Lybrand did a study that observed that that the cost of acquiring a new customer is approximately 5 times that of the cost to retain a current customer (Xevelonakis 2005). Customer retention can be increased by building relationships with customers, which will result in greater profitability (Knox 1998). These relationships will enable companies to gather more knowledge about customers, so they can get to know the customers better (Ahmad and Buttle 2001) and therefore come up with offerings that would best suit their needs.

When customers churn, the company loses out on the life time value of these customers based on their current portfolios, as well as the opportunity to cross sell and up sell other products or services (Xevelonakis 2005).

The South African Telecommunications market would therefore need to implement strategies to cater for differing segments within the two customer bases. The prepaid customer base may have different factors and customer behaviour that determine retention to that of the postpaid (contract) base.

1.3 Problem statement

Identify whether industry players and consumers agree on criteria that affect customer retention strategies in the prepaid telecommunications industry in South Africa.

1.4 Significance of the study

The study fills a gap as there are no research papers discussing customer retention strategy in the South African mobile telecommunications industry for prepaid customers. There are peer reviewed papers on customer retention and customer churn in the telecommunications industries abroad, as well in other sectors, such as the financial sector.

A study done on the telecommunications industry in Switzerland shows that customers wishing to switch suppliers consider: quality of product / service; price; quality of customer service (Xevelonakis 2005). Keaveney's (1995:79) study of customer switching behaviour in forty five different service industries resulted in a model with eight potential causes of churn, namely, "price, inconvenience, core service failures, service encounter failures, failed employee responses to service failures, competitive issues, ethical problems and involuntary factors". These are some factors that will be explored in the South African context.

This gap was realised whilst consulting at a mobile network provider, in the business intelligence field of information technology. The data the company has regarding their subscriber base could add much more value to the business if it were analysed and interpreted towards a robust customer retention model.

The study will provide guidance to managers in the local telecommunications industry as to how to adapt marketing retention strategies to the local prepaid market.

The total GDP for South Africa in 2008 was approximately R2284bn (statssa.gov.za 2010). All figures stated in this paragraph hereafter are taken from the 'Telecommunications Report Q4 2009 South Africa' (Business Monitor International 2009). The two major players in this sector, MTN and Vodacom, had total revenues of R32.5bn and R42.78bn respectively at the end of December 2008 (Business Monitor International 2009), which equates to 3.3% of GDP. The total subscribers amounted to 45 million for the two companies, with average revenue per user (ARPU) at R148 per month for MTN, and R135 per month for Vodacom. MTN's market share was reported as 33.6% and Vodacom 52.5%. For the prepaid bases, the ARPU was reported to be R97 and R64 on average respectively per month, and subscriber bases were at 14.4mn and 24.5mn. If one takes the ARPU and multiplies it by the subscribers, the total prepaid revenue for both firms was R2.9bn on average per month, totalling R34.8 billion per year.

As at end of March 2009, Telkom's employee count was 23,520 with a total revenue of R38bn whereas Vodacom employed 5,451 people (Business Monitor International 2009) and MTN approximately 5,361 (MTN 2009).

The mere fact that these two firms have total revenues which reflect 3.3% of GDP, and that penetration of the market has exceeded 100% should therefore highlight the significance of this study. Secondly, the prepaid bases for these two firms have revenues which account for approximately 46% of their combined total revenue, making it in these firms' interests to retain these prepaid customers.

1.5 Delimitations of the study

- The study was limited to interviewing key players in marketing strategy at some of the mobile operators to understand current

retention models used for prepaid customer bases, and customer retention experts.

- The scope of the study was limited to prepaid subscribers.

1.6 Definition of terms

Definitions are as they appear on the 'Industry Acronyms and Terms' page of the International Telecommunication Union website (itu.int 2005), unless the reference after the definition reflects differently.

- 3G: *Third-generation mobile network or service*. Generic name for third-generation networks or services under the IMT-2000 banner.

- ADSL : asynchronous digit subscriber line.

- Airtime : the minutes of calls a subscriber makes from a cell phone

- ARPU: Average Revenue Per User, usually calculated per month.

- Broadband: transmission capacity with sufficient bandwidth to permit combined provision of voice, data and video, typically at speeds over 2 Megabit per second.

- Churn: Term used to describe the turnover in the number of subscribers to a network, typically measured monthly. There are several different ways of measuring churn (for instance, based on the subscriber base at the start or the end of the month) which means that comparisons between companies or between countries are not always meaningful.

- Coverage: the range of a mobile network, measured in either population or geographic coverage.

- Customer Lifetime Value (CLTV): the net present value (NPV) of a customer, that is, the discounted value of the cash flow generated over the life of the relationship between the customer and company“ (Doyle 2001:82)

- Customer Relationship Management (CRM): a holistic solution that a firm implements across different functional units and channels, with the aim to create both customer and shareholder value (Payne and Frow 2005)

- Interconnect costs / charges : the charge that network operators incur per minute when a call is made from their network to another network. Also referred to an ‘access’ or ‘network usage’ charge

- Gross Domestic Product (GDP): the market value of good and services produced within a selected geographical area (usually a country) in a selected interval in time (often a year) (Leamer 2009:19)

- Mobile Virtual Network Operator (MVNO): a mobile service provider that offers mobile services but does not own its own radio frequency.

- Mobile Operator: the firm that is responsible for the infrastructure that forms a wireless communication network

- Multimedia Messaging Service (MMS): more sophisticated than SMS, allows users to send and receive messages with embedded graphics, audio and video clips or formatted text, without any limitations on characters sent in text.

- Number Portability: The ability for a customer to transfer to a different mobile operator without changing their cell phone number.

- Penetration / mobile density: A measure of access to telecommunications, normally calculated by dividing the number of subscribers to a particular service by the total population.

- SIM (subscriber identity module) card: as printed circuit board inserted into a mobile phone.It contains subscriber details, security information and memory for subscribers to store directory of numbers.

- SMS (Short Message Service): A service available allowing for a message of up to 160 characters to be send or received via the message centre of a network operator to a subscriber's cell phone.

- VoIP Voice Over IP: the technologies used to carry voice traffic over the internet.

1.7 Assumptions

In the case of questionnaires or interviews as methods of data collection:

- All respondents to the telecommunications management interviews had sufficient knowledge in the area of customer retention to clearly articulate answers to questions.

- All respondents to telecommunications user questionnaire understood the questions asked of them.

- The questionnaires and interviews did not result in respondent fatigue.

- Data was relevant and not outdated.

2 LITERATURE REVIEW

2.1 Introduction

Customer retention is affected by various constructs within a firm's marketing strategy, such as customer satisfaction, customer relationship management, customer loyalty, customer profitability, switching costs, pricing and regulation. This literature review highlights how these constructs enable and promote customer retention. But first, it discusses the prepaid mobile markets in South Africa, and both the advantages and disadvantages of the prepaid mobile telephony option.

2.2 The prepaid mobile customer base

The majority, approximately 85%, of mobile telephony customers in South Africa fall under the prepaid category (Business Monitor International 2009), and therefore identifying retention strategies for this base will enable the providers to grow their bottom line, as well as increase loyalty. Thus the reason for this paper concentrating on prepaid mobile telephony customers. The prepaid market is largest in emerging markets, where users do not need to be creditworthy or no credit history exists, and they then have use of the services provided by mobile operators (Minges 1999; Hommer and Krause 2004; Business Monitor International 2009). Costs to the user in these emerging markets are sometimes as much at 10 times those of developed markets, and the average revenue per user is lower (Rouvinen 2006). In most emerging markets, penetration rates are much lower (Rouvinen 2006) , however this is not the case in South Africa, where it has been already mentioned in Chapter 1 that the penetration rate is greater than 100%.

The South African Telecommunication Report gives us the following information about the prepaid bases (Business Monitor International 2009) :

> As at 30 June 2009, 85.9% of Vodacom customers were on the prepaid base, with Vodacom offering 3 prepaid products: Vodago, Smartswap

and 4U. 4U was used by 92.7%, with a per second billing structure. Vodacom churn for the prepaid base fell by 2.2% to 40.1% for the 12 months ended 31 March 2009. Introduction of SIM swaps, new loyalty programmes and campaigns offering better value attributed to this decrease in churn rate. However postpaid churn increased by 1.7% due to the weaker economy resulting from the global crisis.

At the end of 2008, MTN had 14.4 million prepaid customers, an increase of 17% in this year. This was attributed to MTN Zone, which has been their most successful prepaid plan yet.

Lower denominations of vouchers attracted customers to MTN, Cell C and Vodacom.

Due to the economic demographics of the majority of South Africans, where unemployment rate as at March 2009 was reported at 24.9% (statssa.gov.za 2009a) and the average annual income in 2005 was R37,711 amongst 77% of head of households, (statssa.gov.za 2008), it may not feasible to expect customers in this base to migrate to postpaid (contractual) agreements. Currently the average South African household spends 3.5% of income on communication.

Table 1 - Percentage distribution of annual consumption expenditure by secondary expenditure group and population group of household head (statssa.gov.za 2008)

	Black African	Coloured	Indian/ Asian	White	Unspecified	Total
Communication	3.3	3.8	3.9	3.6	5.4	3.5
Postal services	0.0	0.0	0.1	0.1	0.1	0.1
Telephone and telefax equipment	0.7	0.4	0.3	0.1	0.4	0.4
Telephone and telefax services	2.5	3.4	3.5	3.4	5.0	3.0
Number of households in sample	16,110	2,691	348	1,974	21	21,144
Number of households in population	9,566,382	965,778	310,652	1,596,888	17,881	12,457,581
Average household size	4.2	4.3	3.9	2.7	2.9	3.8

Hommer and Krause (2004) indicate that although the prepaid users generate only circa 35% of monthly revenues for operators, this regular form of income should not be ignored, regardless of whether these customers eventually migrate to postpaid. With prepaid, as Virgin USA showed their users, what you pay for is what you get with no hidden costs (Ferguson and Brohaugh 2008). However, the disadvantages of prepaid mobile telephony is that the tariffs for prepaid are higher, and handset prices, although subsidised, are also higher (Minges 1999). This does not bode well for consumers, as prepaid customers are usually low-income earners.

The advantages of being a prepaid consumer is that consumers are not tied in to a contract, no credit vetting is necessary and users can budget better towards using the service, using it only when they can have the disposable income available (Hommer and Krause 2004).

2.3 Customer Retention Strategies

Customer retention strategies are used globally by firms across sectors to retain their customers. The different marketing constructs that facilitate retention are now discussed.

2.3.1 *Customer Retention*

The purpose of retention programs is to identify customers at soon as churn behaviour starts (Pauty 2008). An increase in customer retention by 5% will increase the net present value of a customer by 25 to 85%, depending which sector the firm is in (Reichheld and Sasser Jr 1990; Ahmad and Buttle 2001). Ahmad and Buttle (2001) argue that different strategies need to exist for potential, new and existing customers to engage with, grow, maintain and even terminate relationships. Pauty (2008) suggests that having a predictive model that is close to perfect, which can consume or has consumed copious amounts of time to tweak it, can be counteractive to retention strategies, as during this time customers are lost. He believes that the worth of the customers lost will usually outweigh the value the tweaking the model brings to the business.

Customer retention strategies are aided by firms having a customer centric view, which will then utilise customer loyalty, customer satisfaction and customer relationship management for sustainable profitability, whilst taking into account CLTV of the customer to the client (Gupta and Lehmann 2003). If marketing resources are limited, more emphasis needs to be put on retention, than acquisition as this will have a greater effect on long term customer profitability (Ahmad and Buttle 2001; Reinartz 2005).

In a study by Xevelonakis (2005), it was concluded that by using a retention campaign in the telecommunications sector, the change in propensity of people to stay grows steadily to 10% in the period 6 months after the campaign had been executed, and this was evident for another 6 months thereafter. It also shows that the propensity rates derived from either a predictive model, experience or both, creates estimates that are usually over confident, as shown in Figure 1.

The methodology used by Xevelonakis included two control groups, one based on random selection, where churn rate was calculated at 5%, and one after data had been put through the predictive model, where churn rate was calculated at 10%. The outcomes of the campaign was the churn rate of campaign participants dropped from 10% to 7%, thus it was successful. Xelevonakis (2005) and Pauty (2008) both stress the need for measuring retention to validate whether retention strategies are being successful.

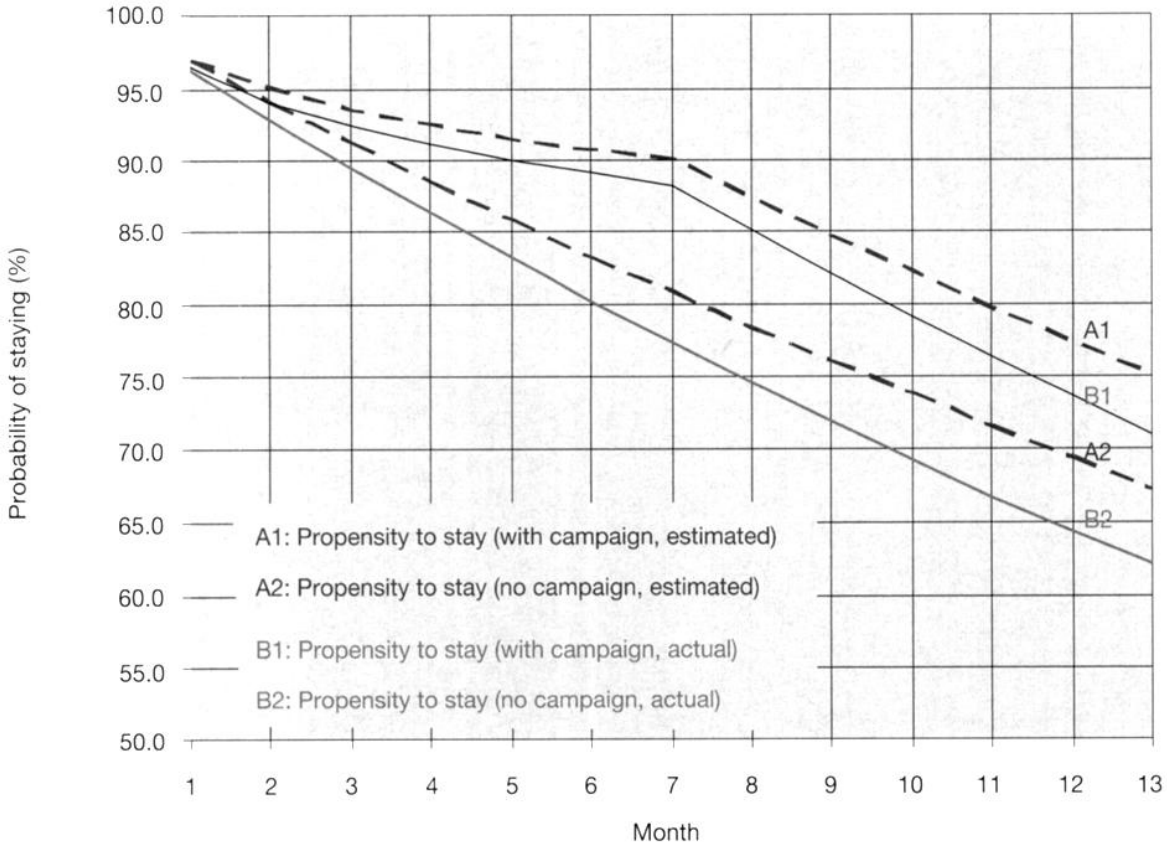


Figure 1: Comparison of actual and estimated probabilities of staying (Xevelonakis 2005)

2.3.2 *Customer Satisfaction*

Jones and Sasser (Jones and Sasser 1996) list four criteria for customer satisfaction: the basic product or service, which is the minimum requirement for all competitors to deliver; customer assistance; recovery process; superior service that meets a customer's needs and expectations through customised solutions. For a completely satisfied customer a firm would have to meet all the above criteria. To do this a firm needs well trained staff, who listen and understand a customer, improving the total customer experience (Keaveney 1995).

As long as a customer rates a firm 4 (satisfied) or 5 (completely satisfied) on a scale of 1 to 5, the firm does not need to be too concerned about its relationship with that customer, although completely satisfied customers are believed to be much more loyal, and this is visible through repurchasing behaviour (Jones and

Sasser 1996). Therefore Jones and Sasser (1996) state that each firm needs to weigh up whether the return on investment to move a satisfied customer to be completely satisfied will outweigh the cost to company. This decision could result in a customer that is not completely satisfied potentially defecting, and this should be a concern to management.

An increase in customer satisfaction prevents churn, and makes customers less price sensitive (Kim et al. 2004). Saying this, customer satisfaction is not sufficient for customer loyalty. The relationship between customer loyalty and satisfaction is not always linear, but it is positive (Kim et al. 2004).

Customers leave on their own accord in cases where the product is no longer required, due to competition, or as a result of bad service delivery. A firm could also fire a customer if they prove too maintenance intensive (e.g. unprofitable customers that are always complaining) as they hurt a firm and have an adverse effect on staff morale (Jones and Sasser 1996; Reinartz, Krafft and Hoyer 2004).

Apart from focusing on relationships with customers, a firm also needs to concentrate on building employee relationships, as loyal, motivated and incentivised employees will tend to create a better customer experience (Reichheld and Sasser Jr 1990; Reichheld and Teal 1996; Reinartz et al. 2004). Employees represent a firm's brand, and need to reflect the value propositions correctly to customers (Keaveney 1995). Improving the quality of both a service and a product will result in increased satisfaction, impacting customer loyalty, and therefore retention (Rust, Zahorik and Keiningham 1995). Ownership of different processes in quality improvement and retention needs to be very clear, as these processes can then be better managed and measured through cost centre allocations and budgeting (Rust et al. 1995).

Ernst & Young (2009) state that if telecommunications infrastructure is poorly developed, then the service cannot be provided appropriately. If a company cannot provide a service core to their operations, such as decent network coverage and reliability in telecommunications, it will be difficult to keep customers on board, let alone loyal.

2.3.3 *Customer Loyalty*

Intent to purchase, positive customer behaviour based on recency and frequency of purchases, as well as purchasing of other products are good indicators of customer loyalty (Jones and Sasser 1996; Kim et al. 2004).

Telecommunication companies can no longer only use their offerings to keep customers on board, but they have had to become more customer centric, as the sector is seen more and more as a commodity rather than a luxury (Kim et al. 2004; Xevelonakis 2005; Ferguson and Brohaugh 2008). Products available from different operators are all rather similar, and therefore these operators need to differentiate themselves through service levels to stop churn (Xevelonakis 2005). Thus, the greater the efforts firms invest in towards gaining customer loyalty, the better the changes of both acquiring new customers and retaining existing ones.

The mobile industry is diverging and soon consumers can have one phone delivering telephony services, information and entertainment (Ferguson and Brohaugh 2008). Consumers will be looking to firms that can offer competitive and cost effective packages, delivering an integrated solution (Xevelonakis 2005). At one stage cable TV surpassed many telecom companies, but the tide is turning to favour telecom companies once again.

Gartner research shows that trust, usability and customer experience are fundamental drivers of customer loyalty in the telecom sector (Ferguson and Brohaugh 2008). Customers want solutions that are reliable, and cater for specific needs (Xevelonakis 2005). Nonetheless, companies must ensure that the cost to obtain loyalty by offering a customer what they want, is not greater than the value the customer brings to the firm (Xevelonakis 2005).

Most loyalty schemes are launched either in response to a competitor, or to anticipate a competitor, or for a firm to get first-mover advantage (Dowling and Uncles 1997). These authors stress that the firm needs to realise that loyalty programs do not add to brand loyalty. Loyalty plans should be adding to the switching barrier by benefitting customers through value adds, and not

entrapment (Ferguson and Brohaugh 2008). False loyalty can be created by such plans, as well as regulation (Jones and Sasser 1996). Respective examples given were frequent flyer loyalty programs, and firms that have a monopoly on the market. An advantage of loyalty schemes is that not only do they provide customer behaviour data by use of the loyalty card, but firms also know the demographics about the customer (datamonitor.com 2010). Also, if a loyalty program spans across firms, more knowledge is then at a firm's disposal to gain important customer insight, than loyalty programs for one retailer. Thus, when a company plans to implement a loyalty scheme they need to weigh up the value they will be gaining from the information the data provides towards marketing research and strategies, verses the cost of the loyalty program (Dowling and Uncles 1997).

Tesco's had increased sales over the festive season of 2009, which they attributed to their loyalty card, as loyalty card holders have access to exclusive promotions (datamonitor.com 2010). In the case of loyalty schemes giving rewards, where a membership fee per annum is required (as in the case of credit cards) these customers did not necessarily stay on longer with the financial institution as they either leave when having redeemed rewards, or realise that they cannot meet reward requirements (Steffes, Murthi and Rao 2008). Reichheld and Sasser (1990) remind us that loyal customers talk about their good experiences. In the same instance, so do defectors and therefore companies need to be able to action why customers defect. This leads us to the next section.

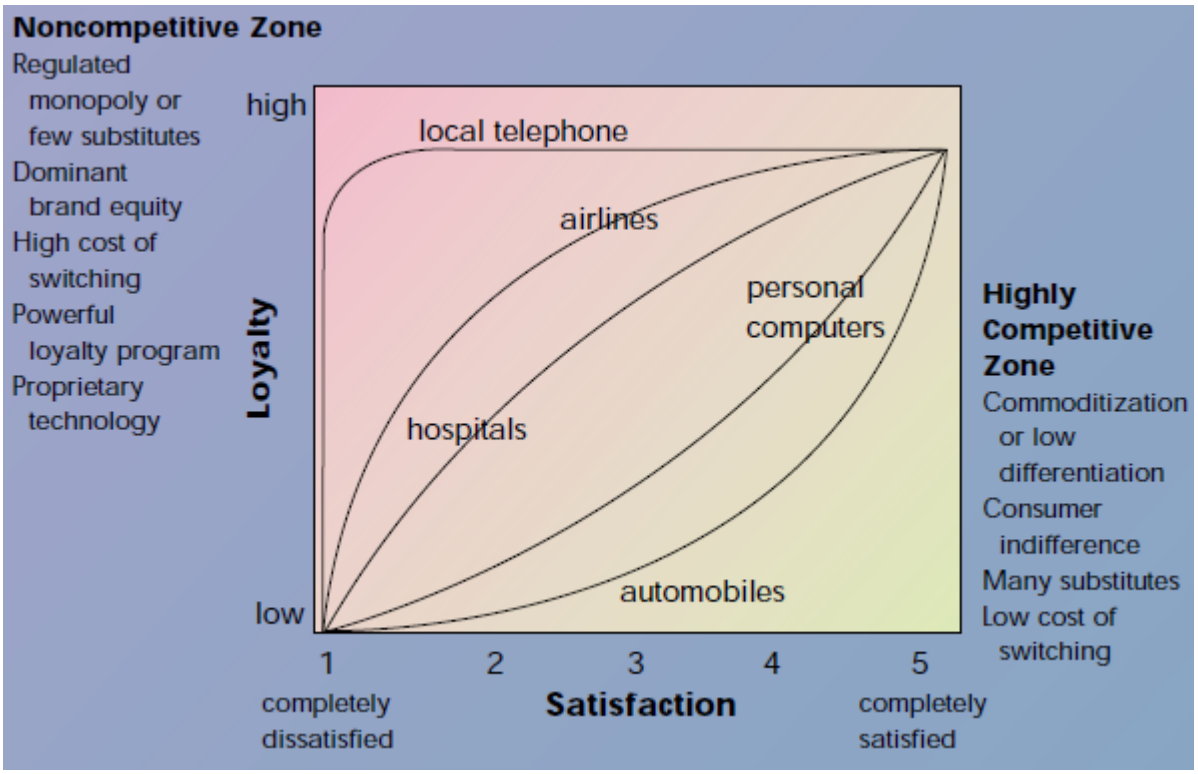


Figure 2: How the Competitive Environment Affect the Satisfaction-Loyalty relationship (Jones and Sasser 1996)

2.3.4 *Defection and Switching behaviour*

Switching is a loss of future revenues, and research has shown that dissatisfied customers and poor service quality results in switching (Keaveney 1995; Xevelonakis 2005).

A survey carried out by Nokia indicates that brand image, network quality and switching barriers are factors that customers consider when wanting to switch, rather than plans available, are/or handsets available (cost and features of these handsets were taken into account) (Ferguson and Brohaugh 2008). The survey also concluded that prepaid customers seem to churn less than postpaid customers.

Customers who feel they are treated well below expectations, or disapproved of the way they were treated, were left wishing they had used another provider.

When they did switch, descriptions of the move was positive, saying they had switched to a better provider rather than from a poor service (Keaveney 1995).

A study done on the Korean market, a market similar to that of South Africa, where it has reached maturity, and both mobile number portability (MNP) and 3G is available to users, concludes that by increasing switching barriers, customer loyalty can be increased (Kim et al. 2004). Kim et al's (2004) research found that the main reasons for customer switching was poor call quality, value added services not being available and customer support mechanisms not meeting expectations, and that higher switching barriers and customer satisfaction increase customer loyalty. If customer satisfaction is low, but switching barriers are high then customers will remain with their service provider unwillingly.

Annual membership fees are not a good measure of loyalty, and do not add to the switching barrier. Consumers may want to pay this fee, such as was the case found with credit card, to ensure that they have the service available to them if it is required (Jones and Sasser 1996).

Reichheld and Sasser (1990) feel that defectors provide solid and explicit information as to why they have left a firm, and this information should therefore be analysed by companies to see whether it warrants any action. For that reason, there needs to be a system in place where this defector feedback, through whatever channel, is communicated back to a team in the organisation who can then take the feedback further.

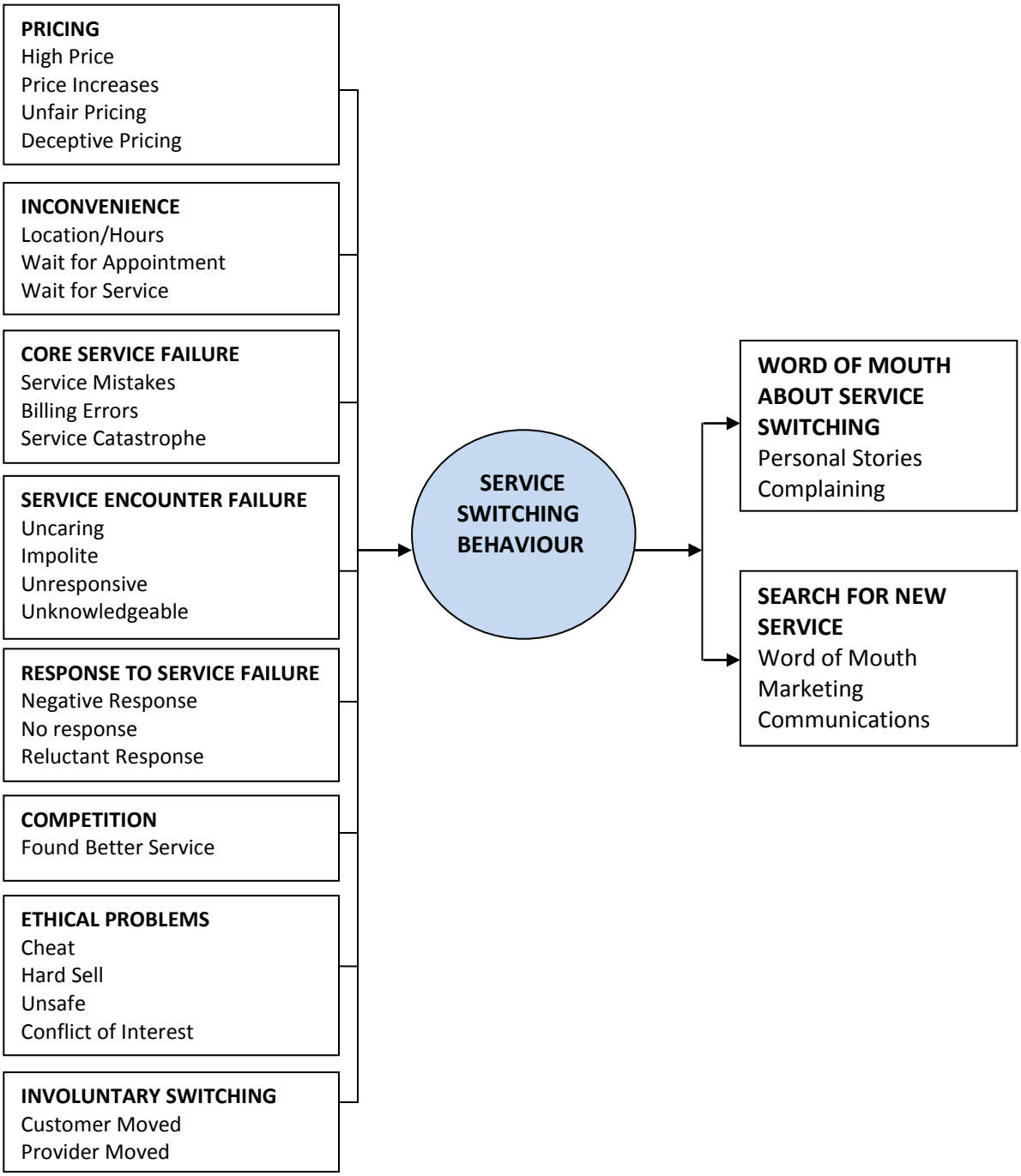


Figure 3: A Model of Customers' Service Switching Behaviour (Keaveney 1995)

Figure 3 portrays the main reasons for switching in service industries (Keaveney 1995). Of the 8 reasons she lists, the top three identified to cause the most switching, in order of magnitude, were core service failures; service provider failures; pricing. Xevelonakis (2005) confirms in his research that switching decisions in the telecom sector are driven by these three factors.

There are instances where customer defection cannot be detected, examples of this is where a customer moves a large amount of money from one bank to another, without closing the original account, or a family signs up with another mobile operator for certain family members (Ahmad and Buttle 2001). Thus there is a need for companies to always measure growth in their sales with that of the market to see if these types of defections are in fact happening (Ahmad and Buttle 2001).

2.3.5 *Customer Life Time Value (CLTV) and Profitability*

"CLTV is the nett present value (NPV) of a customer, that is, the discounted value of the cash flow generated over the life of the relationship between the customer and company" (Doyle 2001:82). As a result of CLTV, customer are intangible assets (Gupta and Lehmann 2003), and most company financial statements, especially those that are service orientated, reflect this nowadays.

CLTV models are used to allocate marketing resources effectively and efficiently (Haenlein, Kaplan and Schoder 2006) . Haenlein et al (2006) ,however, feel that CLTV using NPV calculations alone makes a model inflexible with regards to switching to another provider, as these models usually assume that customers will repurchase products or services. These authors therefore developed a model which uses real options analysis in calculating CLTV, which they believe allows firms to predict more accurately the gains or losses in customer value. Real options analysis looks at both the possibility of switching to a different supplier, and the degree to which a user will develop their current relationship with the supplier further. Therefore, this model allows for better selectivity of customers in retention strategy, and allowing for better use of marketing budgets (Haenlein et al. 2006).

Customer acquisition costs are 5 fold that of customer retention, and in some instances, customers churn before these costs are ever recuperated (Keaveney 1995; Rust et al. 1995; Jones and Sasser 1996; Ferguson and Brohaugh 2008). Gupta and Lehmann (2003) propose that the acquisition costs of a customer should never amount to more than the CLTV. As customers stay longer with a

firm, the greater the opportunity for up selling and cross selling, and the greater the likelihood that the firm will get a greater share of wallet. A long standing relationship increases customer loyalty, and therefore the retention probability. (Gupta and Lehmann 2003).

An increase in the length of the relationship results in an increase in profits (Reichheld and Sasser Jr 1990). These authors elaborate that over time, operating costs decrease as certain processes only need to be done at customer acquisition (such as credit checking), customers understand a firm's processes better, and customers are even prepared to pay a premium for a product or service they know is consistent, rather than moving to a cheaper competitor. As can be seen from Figure 4, customer profitability will accumulate over time, and hopefully it will attain the CLTV calculated.

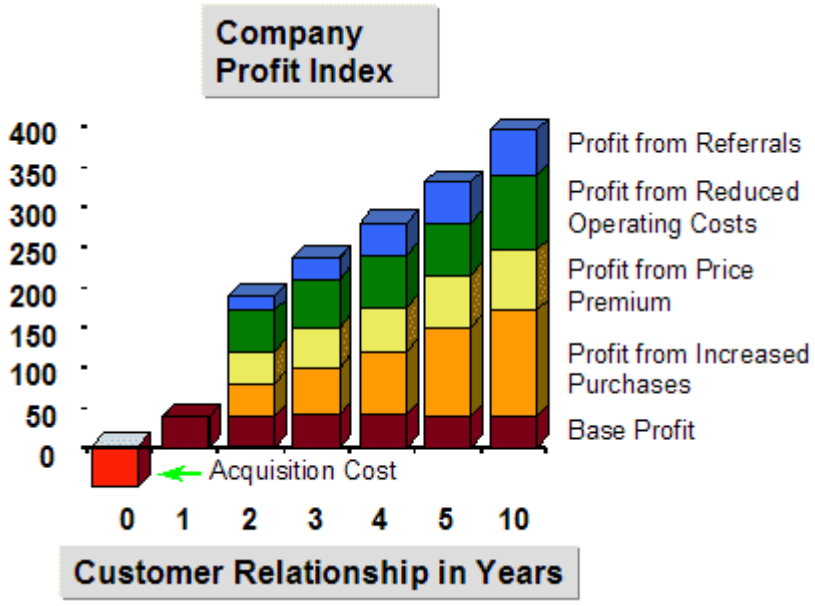


Figure 4: Why customer are more profitable over time (Reichheld and Sasser Jr 1990; Jones and Sasser 1996)

Reichheld and Sasser (1990) also mention that management should divulge the actual CLTV figure of customers to their employees, which could get employees to see customers in a different light, especially if the current purchase of the client is low value.

Research shows that a 10% change in spend results in a 1% change in profitability (Reinartz 2005). Pauty (2008) stressed the importance of tracking of retention campaigns to understand the value gained by the business. Activity based costing allows a firm to measure a customer's profitability, and therefore recognise perhaps which customers a firm wants to fire (Reinartz et al. 2004).

High rates of return can be linked to economies of scale, as larger businesses can command better prices from suppliers, and therefore can deliver a more cost effective product to their customers (Buzzell, Gale and Sultan 1975). However, market leaders can charge a premium for their higher quality products, which will add further to the bottom line (Doyle 2001). Larger companies can also afford to use mass-media, as their marketing budgets are larger (Buzzell et al. 1975). Profitability of firms is also affected by the quality of managers, as better managers control costs better, which adds to profitability, as well as motivate and incentivise staff, which boosts the customer experience and therefore satisfaction.

Xevelonakis (2005), Reichheld and Sasser (1990) insist that unprofitable customers are excluded from retention campaigns, for firm sustainability.

Within their CLTV model, Haenlein, Kaplan and Schoder (2006) developed a metric for firing a customer, also referred to as 'selective demarketing' or 'abandoning of unprofitable customers'. These authors then mentioned two approached to tell customers they are fired: by being told they are no longer sought after, or firms can stop sending promotional data and slowly stop offering various services to these clients. Firms need to be aware that these abandonment strategies can be harmful to their reputation.

Quality improvement efforts are measured to show how they affect profitability (Rust et al. 1995). Companies realise that quality is an investment; however, they recognise that every effort must be made to ensure they do not overspend. Without measurement, quality cannot improve, as firms do not know what to improve on (Reichheld and Sasser Jr 1990).

Different communication strategies and offerings are necessary for different customer segments, as these segments have different economic value for firms (Reinartz et al. 2004). Therefore, within a firm, there should be multiple definitions of churn, based on different types of customer behaviour, demographics and socio-economic standing (Pauty 2008). Gupta and Lehmann (2003) have the view that customers should be segmented based on CLTV, and that different levels of service should then apply to these segments. Quality improvements should be done on a fit for purpose basis, across products and customer segments (Rust et al. 1995).

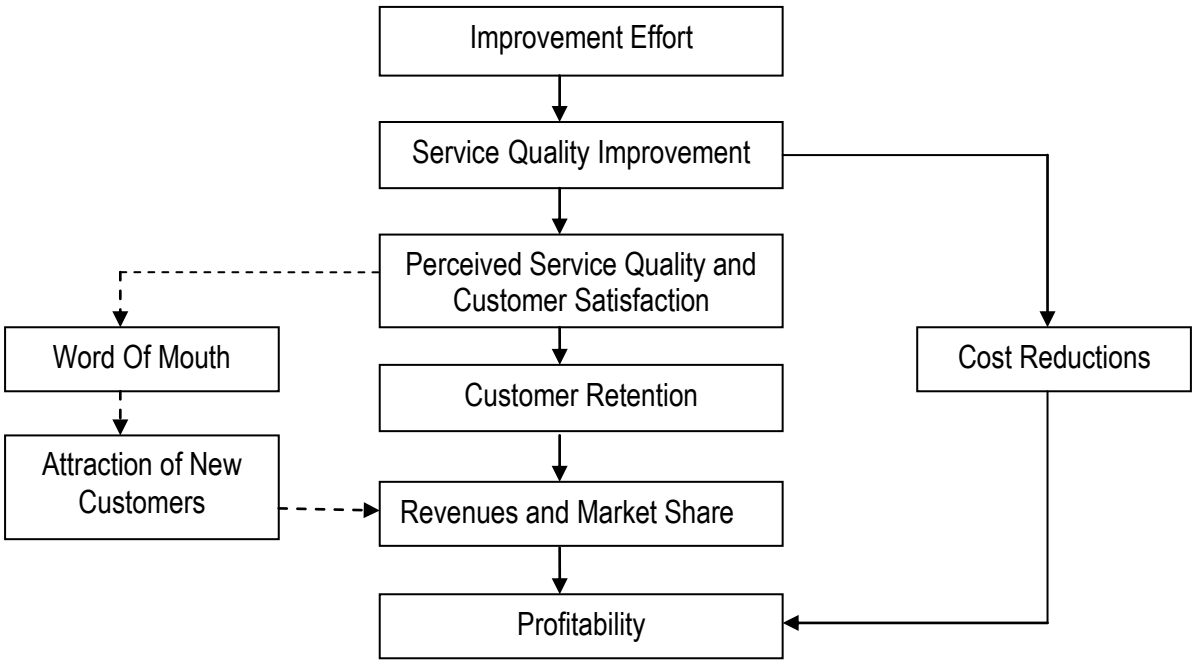


Figure 5: A model of service quality improvement and profitability (Rust et al. 1995)

Cost reduction in Figure 5 relate to more efficient customer facing processes, or better managed customer facing processes, such as better queue management in the case of a retail outlet, reducing customer waiting times (Rust et al. 1995). Further, these costs are recorded in financial statements, and are seen as a measure effecting share of market and retention (Rust et al. 1995).

Managing customer relationships is therefore essential to try and ensure the customer gets the best value from the firm for their needs. This then ties in

segmentation with customer relationship management and profitability and CLTV.

2.3.6 *Customer Relationship Management (CRM)*

There are various definitions of CRM in the literature, and amongst marketing and CRM practitioners, as well as executives. Some view it as an investment in CRM software applications and the technology these require, whilst others believe it is the time and money invested in developing relationships with customers (Reinartz et al. 2004). For purposes of this paper, the definition that will be used is that is as per Payne and Frow (2005), where CRM is seen as an holistic solution that a firm implements across different functional units and channels, with the aim to create both customer and shareholder value. The organisation wide processes involved for CRM are strategic, across multiple channels, and resources included in the cross-function team span marketing, information technology, human resources and finance (Keaveney 1995; Chen and Popovich 2003; Pauty 2008). Chen and Popovich (2003) state that these integrated cross-functional teams then have the expertise to decide what data is needed to add value, and how this data can be used to inform business, and build on customer satisfaction, loyalty and profitability, customer longevity and ultimately retention.

The literature shows that both CRM and retention strategies should be process driven, and best practices known and shared (Chen and Popovich 2003; Reinartz et al. 2004; Pauty 2008). Tools used must fit in with these best practices and processes, and not the other way around. Ownership of retention strategies needs to be very clear, as these strategies can then be driven properly – this involves having a cost centre and budget (Rust et al. 1995).

CRM software and IT systems alone cannot make a company more profitable, and without the necessary resource competencies within a firm, CRM processes cannot be effective and profitable (Reinartz et al. 2004; Pauty 2008).

CRM strategies need to be supported by top management, and the company needs to be customer centric (Payne and Frow 2005), and good communication between all stakeholders is necessary (Pauty 2008). The reason for this is that the framework is then recognised as strategic, formalised and backed by top management, who then will promote execution of CRM processes across the organisation (Reinartz et al. 2004). Customer retention strategies then need to be incorporated into CRM strategies (Pauty 2008).

Customer relationships that are long term enable firms to build up knowledge bases about their customers, thus relationship management is a long term process, and its goal is customer retention through positive outcomes in all interactions (Ahmad and Buttle 2001).

Figure 6 shows depicts how the CRM strategic framework is used across the organisation to add value.

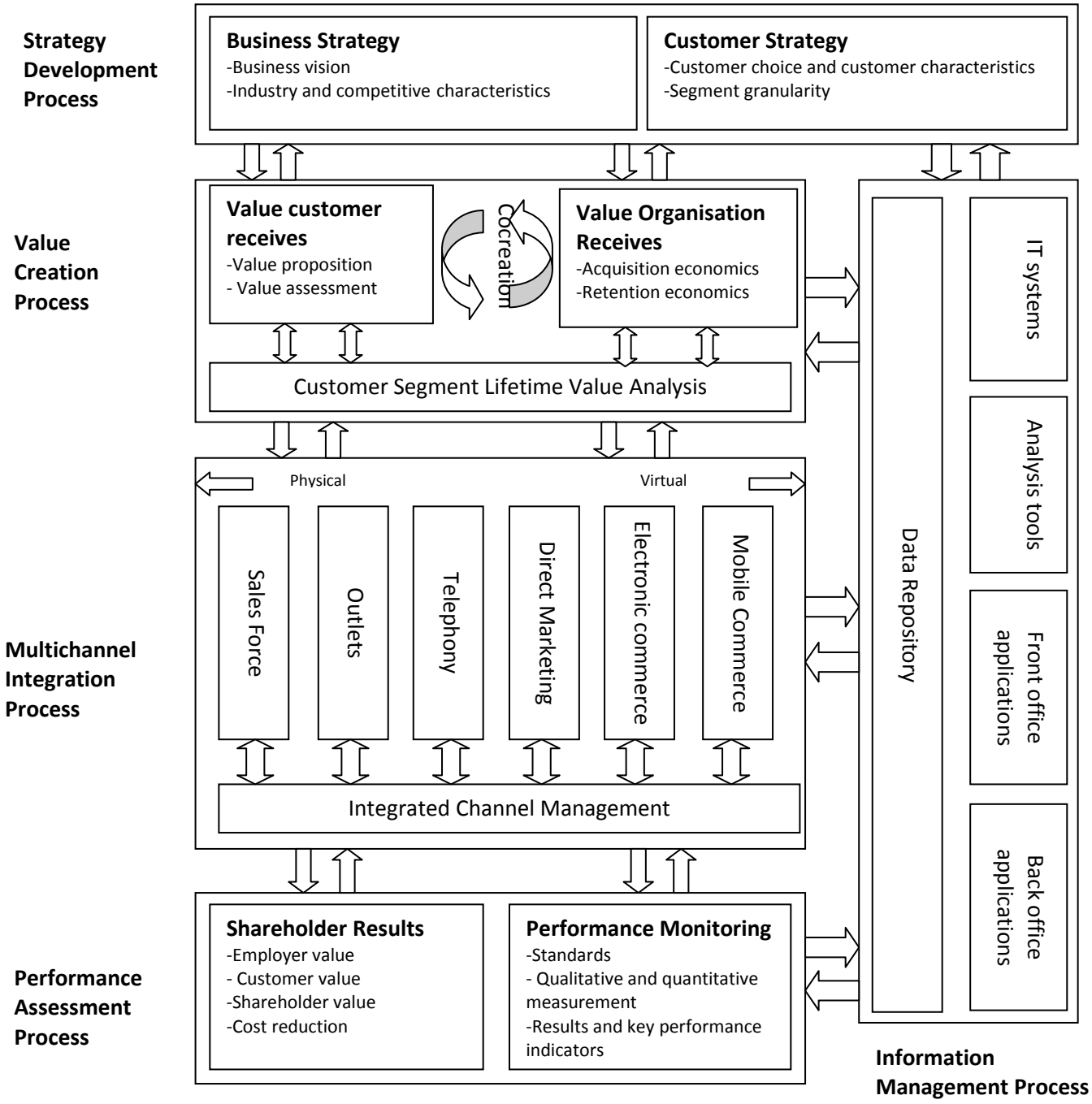


Figure 6: A Conceptual Framework for CRM Strategy (Payne and Frow 2005)

Within the IT realm, front end systems need to interface with back end systems. The front end systems are customer facing systems e.g. web pages where customers order a product, or the system used by the clerk at a retail outlet, and

back end systems are billing systems, and systems dealing with supply chain management and stock fulfilment.

One of that outcomes of CRM is that a firm can identify profitable customers, and by delivering high value to these customers through communication and customisation, these customers will want to stay on with the firm (Chen and Popovich 2003). Through knowledge gained from data analysis techniques and models, firms can then cross sell or up sell to these customers (Reinartz et al. 2004; Ferguson and Brohaugh 2008). These models that use customer behaviour data and transactional data, as well as a customer's response to promotions can enhance the customer experience and build loyalty (Ferguson and Brohaugh 2008).

For successful retention processes, customer behaviour needs to be understood, and then influenced (Pauty 2008). Pauty continues that to understand this behaviour, on time and accurate data is essential, and therefore, automated processes that are closely monitored and audited need to exist to enable better data management, and result in better retention campaign facilitation. Xevelonakis (2005) reiterates Pauty's view on accuracy and timeousness of data, as business cannot play catch up on churn, if the opportunity to win back these customers has been missed. As important as customer data is, non customer data also provides insight into perceptions of the firm, as well as reasons why they are not customers of the firm (Xevelonakis 2005).

A customer's perception of the firm's overall quality standards, and/ or the quality experienced when engaging in their last transaction can be used by a firm as an indication of where service processes can be improved on, and therefore improving the relationship with the client (Rust et al. 1995).

2.3.7 *Pricing*

Customers are subscribing to sub-optimal price plans (Wong 2009). Wong (2009) proposes a retention strategy where operators advise customers of a

more appropriate pricing plan based on their usage behaviour, as customers on optimal plans tend to remain with firms for longer.

Outcomes of Kim et al's (2004) research on the Korean mobile telecoms market were that price plans and device strategies did not affect customer satisfaction.

However, Keaveney (1995) does find price resulting in churn when customers feel they are being done in and can get better value elsewhere. Value encompasses the whole package, and therefore, if service levels and product quality are not as per expectations, customers tend to be more price sensitive.

2.3.8 *Regulation*

The Regulation of Interception of Communications and Provision of Communication-Related Information Act (RICA) is a requirement of the South African government, requiring all customers with a cell phone number to be registered (hellkom.co.za). The website expands further, saying that this registration comes at no extra cost, and all one is required to do is provide valid identification, and domicile information. Customers living in informal settlements can use a church, school or retailer where they receive their post as domicile, but it is an inhibitor into the market. This law was passed to make South Africa a safer place, as law enforcement agents can now track criminals that are using their phones for unlawful deeds (hellkom.co.za).

According to Monama (2010) this regulation has had an adverse effect on prepaid customer bases of MTN, Vodacom and Cell C. Vodacom lost 1.3 million prepaid customers for in 2009Q4, whilst MTN lost 800 000 customers in 2009Q3 and Cell C's gross activations have dropped by 70%. Both companies have blamed these losses in customers on RICA (Monama 2010). This therefore indicates how regulation causes churn, which is out of the control of firms.

Government intervention with regards to pricing, and allowing for more entrants into the market will also can have an adverse effect on the sector's growth and profitability (Ernst and Young 2009).

2.3.9 *Other determinants*

Within the South African mobile market, there are offerings whereby there was no academic literature available. Examples of these are: MTN Zone, an offering to prepaid and hybrid customers, where the user only pays a fraction of the normal minute rate, based on their location when calling, and the demand on the cell phone tower closest to this location (mtn.co.za 2008); Wizzit Bank, which allows for cheap cell phone banking, which also enables customers to purchase airtime and electricity, with the use of a very basic cell phone (no internet connectivity required) – the company provides banking solutions for the unbanked in South Africa (wizzit.co.za).

2.4 Conclusion of Literature Review

Retention should be crucial to a firm's marketing strategy, as retaining customers costs an organisation less than acquiring new customers. The wealth of information gained from retained customers is also more beneficial to a firm, as the longer a customer has been with the firm, the more behavioural and transactional knowledge the firm has on the customer, and the more likely that a customer will be more loyal. Rica should allow firms to now have access to more data about their prepaid customer base, which can will allow for better knowledge to be gleaned from this data, however this is not the case as companies cannot use this data at all.

From the discussion on retention strategies, although these are perhaps driven by marketing, the whole organisation is required to be involved in making the customer feel satisfied, which builds loyalty, and ultimately enables retention. Loyalty programmes, if they benefit the client, without the client feeling trapped, can aid in retention.

The literature identified the following criteria important to the consumer for firms to retain them, with different authors putting emphasis on different criteria:

- delivering a reliable service – i.e. a product that works, in this case the telecommunication infrastructure that allows consumers to use their phones for their needs; availability of airtime
- customer service
- price sensitivity
- brand image
- loyalty programs offering rewards
- making lower denomination airtime vouchers available for consumers to purchase
- value added services, such as ringtone downloads
- regulation
- handset functionality
- specialised offerings and services, such as MTN Zone or SIM swaps

Over and above these criteria, the literature identified the following criteria that firms should take into account when developing retention strategies for further value creation for stakeholders:

- retention of profitable customers, and therefore segmenting customers based on profitability, offering more profitable customers better services and solutions.
- predictive churn models to identify potential churners based on customer behaviour
- repurchase behaviour of the consumer: recency and frequency
- cross selling and up selling of products
- measurement of retention strategies
- switching barriers
- customer relationship management: longevity of a relationship allows a firm to glean more information about a customer, and therefore build a better relationship

- human resource management for employees to build and maintain good relations with consumers

Literature pertaining to retention in South Africa is available for the fast food, the retail and private banking industry. In the local fast food industry, customer satisfaction, which is a good measure of estimating loyalty, is driven by perceptions of value and quality (Terblanche and Boshoff 2010). In supermarkets, customers are price sensitive, and therefore the value of the products impacts retention (Terblanche and Boshoff 2004). The same study concluded that in large clothing retailers for the family, over and above the pricing of goods, store layout and the relationship with staff are central to retention (Terblanche and Boshoff 2004) . A study done by Abratt and Russell (1999) on customer retention in the private banking sector shows price to be the most important retention criteria, followed by trust in the banker, service quality, and the availability of the private banker in times of emergency. Furthermore, clients with personal bankers were more likely to stay with the bank.

Academic articles are lacking with regards to what customer retention strategies are used in the South African mobile telecommunications arena. A local industry report mentions that SIM swaps, new loyalty programmes and campaigns offering better value, as well as availability of lower denomination airtime vouchers contributed to customer retention (Business Monitor International 2009).

This research endeavoured to investigate what retention strategies were used by firms in the prepaid mobile telecommunication sector, and whether these were aligned with what consumers said would lead to their retention.

2.4.1 *Research Question 1*

What do consumers perceive to be the more important factors of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases?

2.4.2 *Research Question 2*

What do the main industry players consider to be the more important aspects of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases?

3 RESEARCH METHODOLOGY

Chapter 2 identified certain criteria that lead to increased customer satisfaction, which in turn increase a customer's loyalty, and therefore overall retention rate of a firm. This chapter examines the research methodology that was used, the type of research resulting from this methodology, the sample of respondents and data collection and analysis techniques. Lastly, validity and reliability of the data and the research instrument is discussed.

3.1 Research methodology

Two instruments were developed for this study, the first being a questionnaire for management and independent consultants, and the second a questionnaire for prepaid mobile telecommunication consumers.

This study used a mixed method methodology, which allowed for both "pre-determined and emerging" (Creswell 2003:19) data to be collected.

The first instrument, the questionnaire for management, used a qualitative approach, consisting of mainly open-ended questions (Creswell 2003). The manager's title, and organisation were noted. The challenges of qualitative research is that results are not definitive, and are open to misinterpretation by the researcher, and hence it is more exploratory than predictive (Willig 2008). Open-ended questions have the advantage in that the respondents can express opinions better, however they are time consuming to analyse (Keller 2008). The researcher gains insight into the respondent's perceptions (Kalof, Dan and Dietz 2008).

The user questionnaire gathered quantitative data, and had only one qualitative question. Quantitative data provided the study with some user behaviour, as well as answers to close-ended questions. Close-ended questions were written in a way where the respondent had to pick the most pertinent answer from a list of answers (Kalof et al. 2008). Quantitative research methods are used to confirm or negate what the literature review reveals about a study, in this case

criteria leading to customer retention (Leedy and Ormrod 2005). Due to time constraints to gather data, the numerous criteria contributing to retention strategies, and the number of responses required being 150, it was simpler to use quantitative methods. Descriptive statistics, cross tabulations and factor analysis, were then used to analyse and interpret this data (Leedy and Ormrod 2005).

3.2 Research Design

Three survey approaches were used in this study: executive interviews, mall-intercept interviews and self-administered questionnaires (McDaniel and Gates 2007). The management research instrument used executive interviews, whereas data collection for the consumer survey questionnaire was done through mall-intercept interviews and self-administered questionnaires.

Executive interviews can be expensive, as the correct individuals within organisations need to be sought, and this can be time consuming (McDaniel and Gates 2007). McDaniel and Gates (2007) point out that the manager then needs to agree to an interview, and a meeting appointment needs to be set up. Managers and executives are not always in control of their diaries, therefore meetings may be cancelled and rescheduled. The sourcing of managers who would participate in the study, and the rescheduling of interview appointments were both experienced in this study. Advantages of face-to-face interviews are that there is immediate response, the respondents can ask if they need clarity on any of the questions posed to them and the response rate is also higher than other research methods (Keller 2008). This was definitely noticed in the interviews conducted.

Mall-intercept interviews do not allow one to get a sample which represents a large geographical area from one mall (McDaniel and Gates 2007). McDaniel and Gates (2007) also suggest that malls attract different clientele, depending on their location, and the shops available to the consumer. Shoppers could be in a hurry, and data quality may not be at its best as a result of this. However,

the advantages are that there are many people in one location, and thus finding respondents is a less trying task.

Self-administered questionnaires have the disadvantage of no interviewer being available to elaborate on questions the respondent has, nor can the interviewer prod for further information to open-ended questions. However, the respondent can take their time in filling it in, and are not biased in any way by an interviewer (McDaniel and Gates 2007).

3.3 Population and sample

3.3.1 *Population*

For the consumer survey questionnaire, any person that was a prepaid mobile telecommunications consumer was approached as a respondent, as long as they were over 18. Thus, users were screened by asking whether they are eighteen years of age, or over, and were on a prepaid cell phone plan.

The executive interviews were conducted using managers that were involved in the retention strategy formation and implementation at cellular providers in South Africa, as well as independent customer retention experts.

3.3.2 *Sample and sampling method*

There were two different groups within the sample. The first sample was for the consumer survey questionnaire. This sample was a convenience sample, as people that happened to be in the vicinity and were available and prepared to answer a survey (Leedy and Ormrod 2005). The aim was to achieve 150 valid responses and respondents were sourced from various malls in the Gauteng area.

The second sample, that for the interviews with management at the mobile telecommunications providers (MTN and Cell C), with individuals responsible for customer retention strategies, and independent experts, consisted of 6

interviews. The interviews with customer retention experts were a necessity due to lack of response from some of the mobile network providers.

Table 2 – Table of Interviewees

Title	Organisation
Senior Manager: Customer Analytics	MTN, SA
Senior Manager: Customer Development and Retention	MTN, SA
GM: Customer Development & Retention	MTN, SA
Customer Operations Executive	Cell C
Customer Retention Expert - Telco	Independent Consultant
Independent Consultant	Director, ServiceMix

3.4 The research instrument

There were two instruments that were used in this research: a questionnaire for the cell phone consumers/subscribers, which can be found in Appendix A; a list of interview questions for the managers, which can be found in Appendix B.

The consumer questionnaire had a number of demographic questions, as well as questions enquiring about behaviour regarding airtime usage and purchases. It asked customers regarding constructs from the literature review. Respondents had to disagree or agree with statements, on a Likert scale of 1 to 5, with 1 representing strongly disagree and 5 strongly agree, to gauge the importance of these constructs. The constructs, to mention a few, included reliability of network, pricing, customer service. Some of the constructs, as per Keaveney's framework, as depicted in Figure 3, were the framework of this part of the survey.

The interviewer questionnaire had some questions relating to the person's position in the company, and how they fitted in with the customer retention strategy. It then posed a number of questions as the prepaid retention strategy

in their organisation. The interviews were fairly unstructured, even though there was a list of 10 questions to guide the interviewer.

Similar questions as those posed to management were presented to the independent expert consultants, but on a broader scale, drawing on their expert knowledge.

3.5 Procedure for data collection

All data for the study was collected by the author of the research paper.

Face to face interviews were conducted with management at the cell phone network providers, and the independent consultants, at a time and place agreed upon by interviewer and interviewee. This data was then transcribed by the interviewer.

The questionnaire survey was pretested, using 5 respondents for the pilot. The concerns were that the survey was too long, and that some of the questions were ambiguous. The results of the pilot were that the concern of the questionnaire length were unfounded; however there were some questions, especially in section C, the agreement matrix, which needed clarification. Galloway (1997) lists the following questions to pose to respondents when undertaking a pilot survey:

- How long did it take to complete (any negative feedback regarding length)?
- Were the instructions clear?
- Were any questions ambiguous?
- Did respondents object to answering any questions?
- Was the layout clear and aesthetically pleasing?
- Did respondents have any additional comments?

Feedback was that there were instances where questions were ambiguous, or where respondents did not know the answer, such as “what prepaid price plan they were on”, or “what is their average spend on airtime a month”. The

ambiguous questions were reworded for better clarity, and the questions that respondents could not answer were removed from the survey.

Questionnaire surveys were conducted at various malls in the Gauteng area (namely Lakeside Mall, Benoni; Meadowdale Mall, Edenvale; Eastgate Mall, Bedfordview; Sandton City, Sandton; The Glen Shopping Centre, Oakdene; Cresta Shopping Mall, Cresta) by the author of this research paper. The survey was also distributed to current MBA students and friends of the researcher to be completed by anyone they knew, be it themselves, a family member, a colleague or domestic worker, using prepaid mobile telephony. Results of these survey questionnaires were manually captured by the author of this report, in Microsoft Excel and were checked before data analysis and interpretation were carried out.

3.6 Data analysis and interpretation

Of the quantitative data, a correlation matrix was used to inform of the strength of the relationship between any two interval/ratio variables (Urminsky 2010a).

An exploratory factor analysis was then done on some of the quantitative variables, to establish whether there were specific dimensions that was responsible for customer satisfaction, and retention (Urminsky 2010a).

Factor analysis is a statistical method that “examines correlations among a number of variables that reflect underlying themes and factors within the data” (Leedy and Ormrod 2005: 278), and thus concealed factors in the data are found. Questions C1-14 used a 5 point Likert scale, and this data was thus ordinal data. Stacey (2005) reveals that statistical analysis may be done on ordinal data, and there is no need to rescale the data for it to have interval characteristics. However, the item means and standard deviations of ordinal data are not valid (Stacey 2005). For these to become valid, the distribution factor algorithm, developed by Stacey, was applied to the ordinal data to estimate better item means and standard deviations (Stacey 2006). The means and standard deviations were compared across the items of a factor, to interpret

the level of agreement amongst respondents. This then gave an indication of which factors were viewed more consistently by respondents. From this consistency, a taxonomy was applied to the factors.

Figure 7 illustrates the common factor model, where E1 to E5 are the unique factors, Measure 1 to Measure 5 are the observed responses, and F1 and F2 the underlying common factors that result from the data. A unique factor can influence multiple common factors.

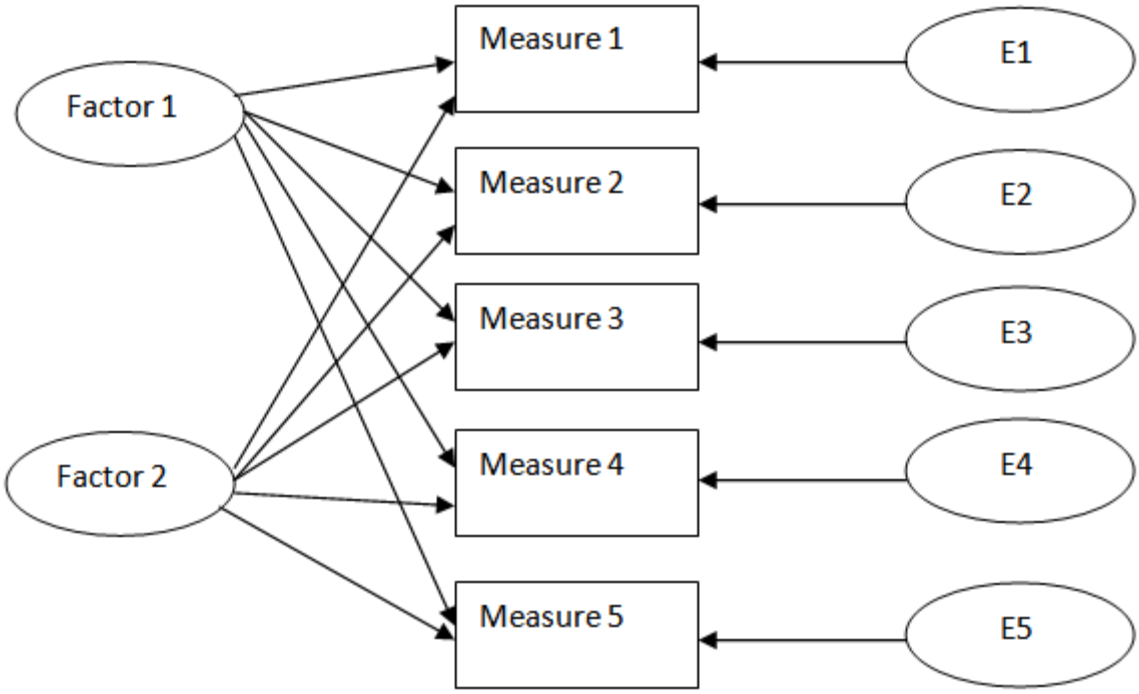


Figure 7: The Common Factor Model (DeCoster 1998)

The interviews were made up of open ended questions, and these had to be analysed for recurring themes, and similarities in answers. Any answers that did not fit in with these themes were noted. Hence, content analysis methodology was used, as it is ideal for analysing human interactions, and is defined as “a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes or biases” (Leedy and Ormrod 2005).

3.7 Limitations of the study

The purpose of sampling is so that one can draw conclusions about a population based on the sample through inference (Keller 2008).

The user questionnaire survey sample being a convenience sample was a limitation, as the outcomes were limited to a geographical area. Thus, if the whole population within South Africa were to be observed, results could differ to those of the sample as this was not a random sample.

The questionnaires that were answered via respondents through respondents resulting from the MBA class could be misinterpreted. The questionnaire at the malls was interactive, and therefore any misunderstanding on the part of the respondent should have been clarified.

Interviewer error or bias could affect the results, if the interviewer does not appear to seem neutral, the interviewer is inexperienced, or the respondent does not feel comfortable giving an honest answer (McDaniel and Gates 2007)

Questions that lead user responses, or are difficult to answer can compromise the data, thus the questionnaire needed to be pretested (McDaniel and Gates 2007), and this was done.

3.8 Validity and reliability

Validity of the research instrument refers to the degree to what the instrument measures what it was meant to measure (Leedy and Ormrod 2005), whereas reliability measures the consistency with which a measure gives the same results with a similar population (Leedy and Ormrod 2005; McDaniel and Gates 2007; Kalof et al. 2008).

Part of the research was qualitative. The researcher had to validate respondents, and for the management interviews this was done by validating the title of the person, and their responsibilities (Leedy and Ormrod 2005). The consumer survey had a question to screen respondents based on their age.

3.8.1 *External validity*

External validity questions whether the results from research based on a specific sample can be generalised to a whole population (Leedy and Ormrod 2005; Kalof et al. 2008).

This research interviewed managers from different companies, and surveyed customers of these 3 different service providers. We can therefore extrapolate results to the industry. Saying this, the sample for the consumer survey was geographically limited, and this was noted as a limitation.

3.8.2 *Internal validity*

This is the extent to which the design of the research instrument enable the researcher to find causation and other relationships in the data collected (Leedy and Ormrod 2005).

Triangulation was used, to see whether the consumers and the service providers agree with retention strategies for the prepaid market.

3.8.3 *Reliability*

If a person were asked the same questions in a second encounter without any recollection of the first encounter, the answers they provide should be the same as that of the first encounter.

It is important to note that “reliability is a necessary but insufficient condition for validity” (Leedy and Ormrod 2005:29).

4 PRESENTATION OF RESULTS

4.1 Introduction

This chapter describes both the statistical techniques used to answer the first research question pertaining to consumers, and the content analysis done on interview transcripts. The main findings resulting from the two methodologies will be presented.

4.2 Sample description of consumer survey questionnaire

The consumer survey was numbered, as in Table 3.

Table 3 - Survey Questionnaire question numbers.

Question	Question	Type
Age	A1	Single Selection
Gender	A2	Single Selection
Network	A3	Single Selection
When did you last change networks?	B4	Single Selection
Indicate which network you were with BEFORE you changed?	B5	Single Selection
You use your cell phone to:	B6	Multiple
Frequency of airtime purchase	B7	Single Selection
Reason for being prepaid	B8	Multiple
Your network is reliable.	C1	Likert Scale
The pricing of your network is easy to understand.	C2	Likert Scale
If another network offers better prices you will move.	C3	Likert Scale
Keeping the same cell phone number is important to you.	C4	Likert Scale
The image of your network is important. to you.	C5	Likert Scale
The network's involvement in projects uplifting the community is	C6	Likert Scale
Being able to buy low values of airtime for top up, such as R2, are important to you.	C7	Likert Scale
The rewards (free minutes, free SMSs, discounted calls) offered are important.	C8	Likert Scale
The rewards offered make it worth your while to stay with the	C9	Likert Scale
The network makes you feel like an important customer.	C10	Likert Scale
The network's customer care centre is always available when you need help.	C11	Likert Scale
You are happy with the customer service you are getting.	C12	Likert Scale
You will stay with this network for at least another 6 months.	C13	Likert Scale
Your cell phone makes a statement about who you are.	C14	Likert Scale

Appendix C contains the coding sheet of the questionnaire.

Section A of the survey required that the respondent identified what age bracket they fell into, as well as their gender and current cellular network. Section B then asked the respondents about behaviour, including last switching behaviour, what they used their cell phone for (internet, SMS/MMS), frequency of airtime purchases, the reasons for them having been on prepaid.

Of the 192 surveys that were collected, there were 160 that could be used, as the other 32 had some missing data.

Frequency of distribution of data from questions A1 – A3 for demographic data, and B4, B7 and B8 is depicted below.

Question A1: Age bracket

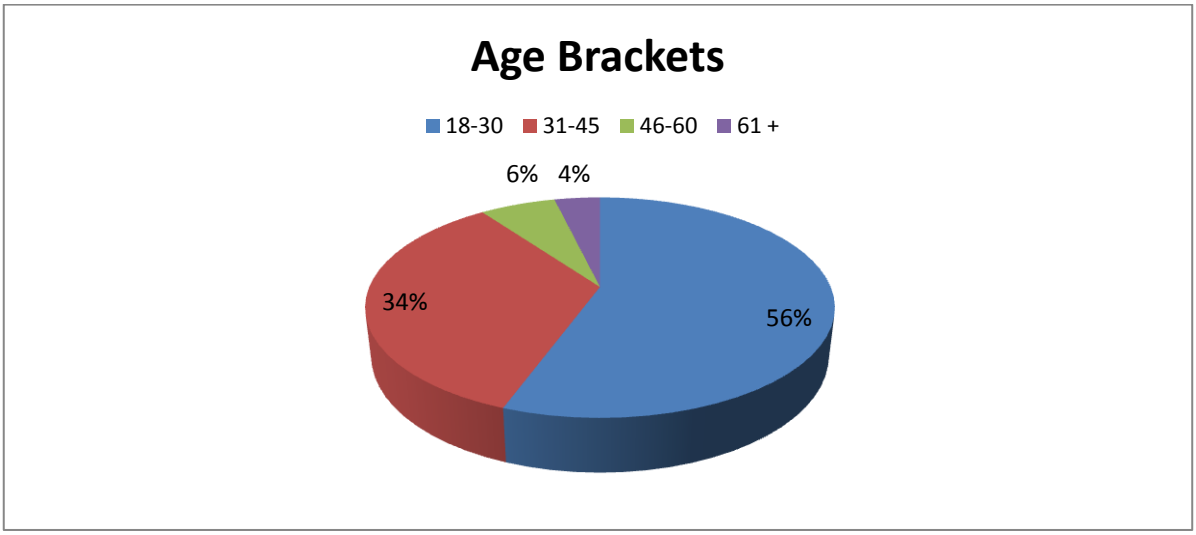


Figure 8: Age Brackets of Respondents

The majority of respondents, 56%, fell into the 18-30 age bracket. The next largest group of respondents was the 31-45 age bracket, having 34% of the respondents. 46-60 year age band made up 6% of respondents, and only 4% were 61 years of age or over.

Question A2: Gender

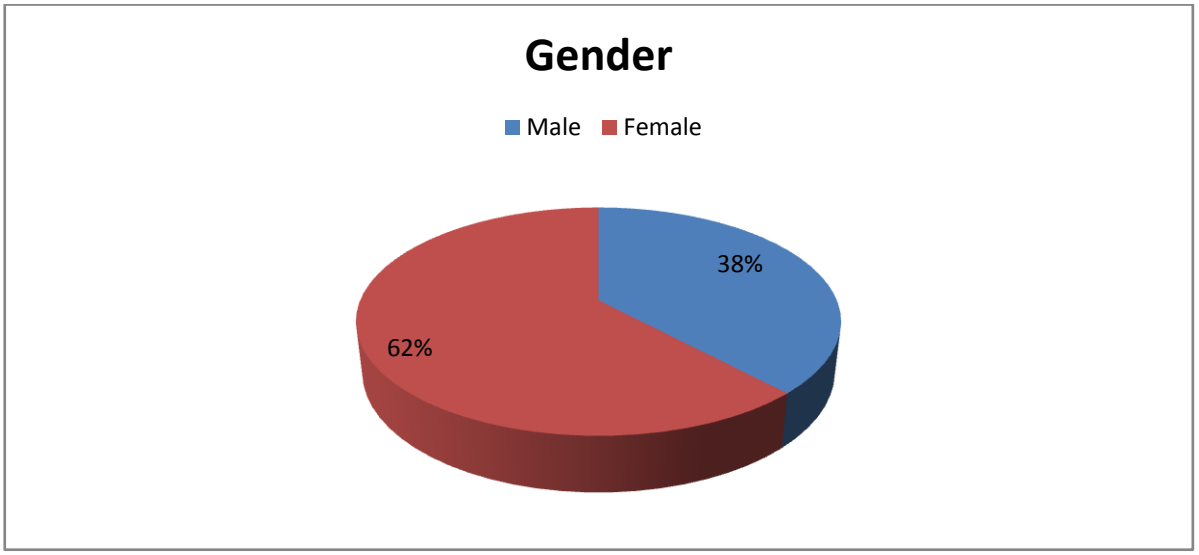


Figure 9: Gender of respondents

Women were the larger proportion of the respondents, accounting for 62%, with men making up the balance, at 38%.

Question A3: Current Network

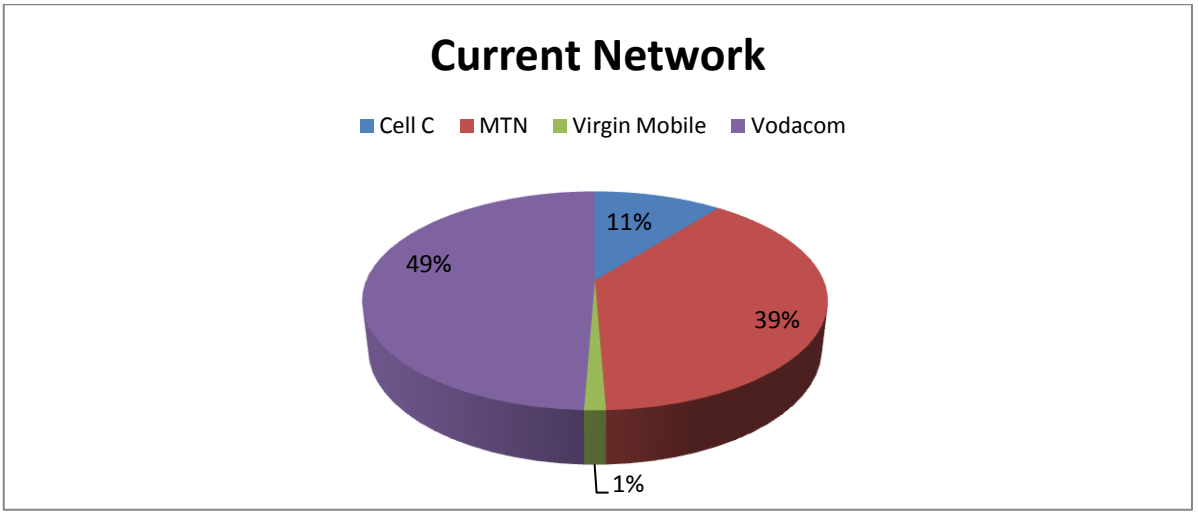


Figure 10: Current cellular network of respondents

Of the 160 respondents, 49% were Vodacom , 39% MTN ,11% Cell C and 1% Virgin Mobile customers.

Question B4: How long ago a subscriber changed networks

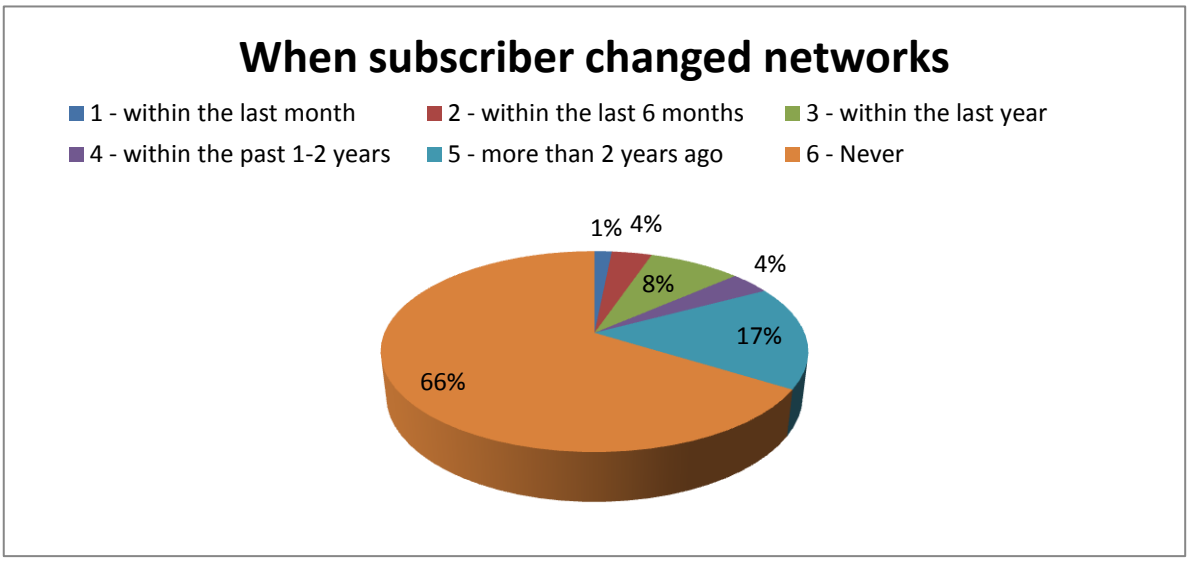


Figure 11: Respondent switching network behaviour

Of the 160 subscribers surveyed, 66% had never changed networks, with the greatest proportion, 17%, having switched more than 2 years ago. 13% had switched within the last year (cumulative), with the greater portion in the later part of the period. 4% switched networks in the past 1-2 years.

Question B7: Repurchase frequency of airtime?

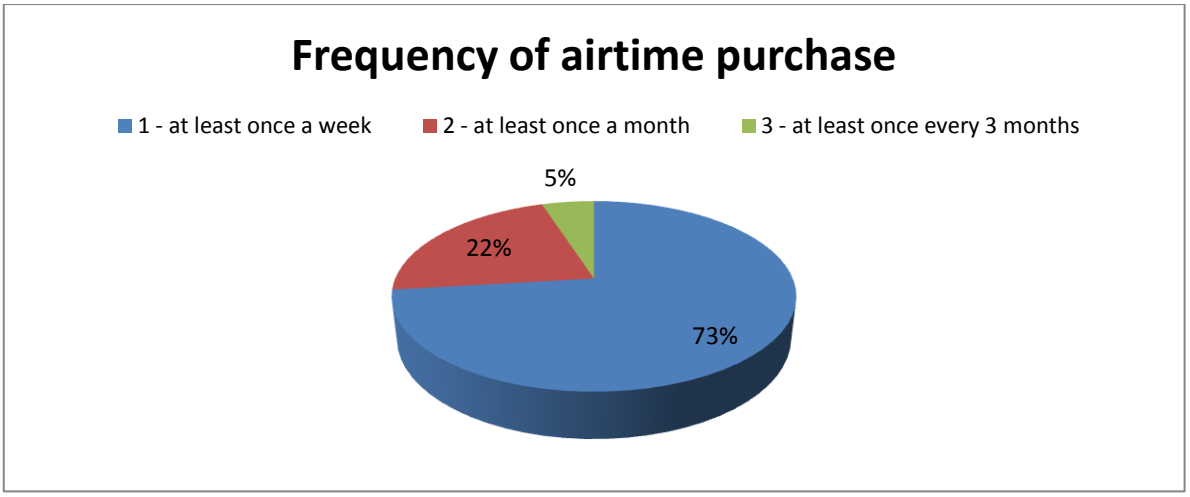


Figure 12: Frequency with which a respondent purchases airtime

Most subscribers (73%) purchase airtime at least once a week. An observation was that some subscribers would purchase airtime as often as twice or thrice a

week. However, when asked for an estimated monthly spend, subscribers did not have any idea what their spend was.

Question B8: Why did subscriber opt for prepaid?

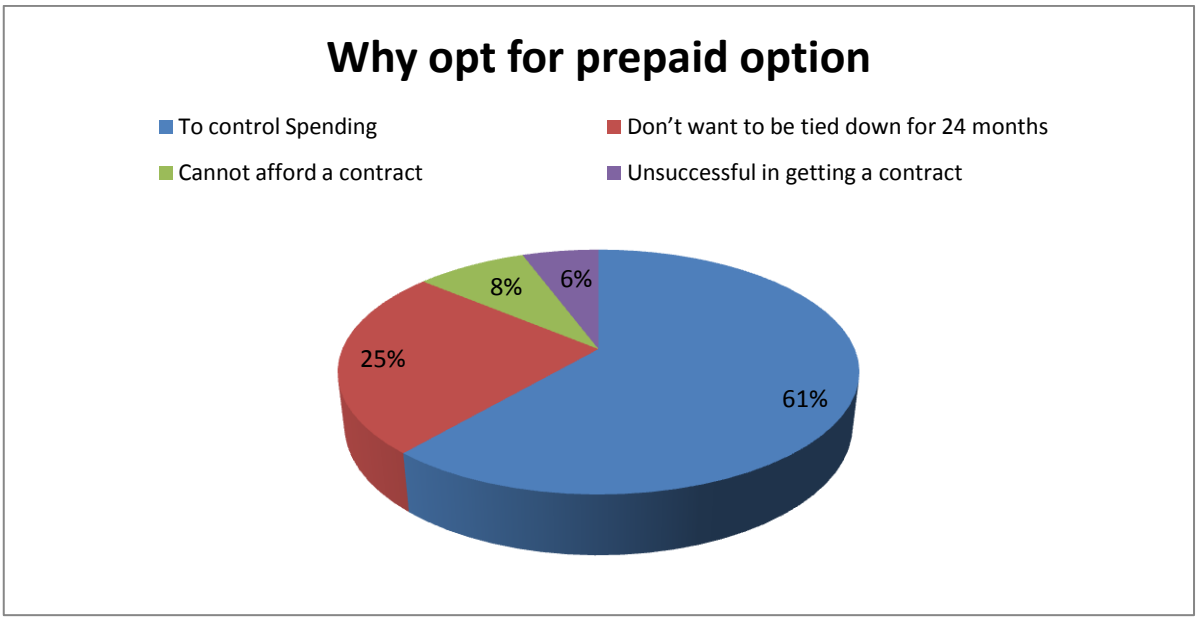


Figure 13: Why subscribers opt for the prepaid option

The subscribers could select more than one answer for this question. 61% mentioned they were on prepaid to control their spending, whereas the next most selected answer, making up 25%, was that they did not want to be tied in for 24 months. Of the remaining responses, 8% had been unsuccessful in getting a contract and 6% believed that they could not afford a contract.

4.3 Results pertaining to Research Question 1

What do consumers perceive to be the more important factors of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases?

This section displays some cross tabulations done between some of the demographic and customer behaviour variables, as well as list the output of the exploratory factor analysis done.

The variable that was used as the customer retention variable is C13, where a subscriber had to indicate their intention to stay with their current network for at least another 6 months.

4.3.1 *Cross Tabulations*

Table 4 – Switching behaviour of respondents

A3 - current Network	B5 - previous network	
1 - cell C	2 - MTN	25.00%
	4 - Vodacom	18.75%
	5 - No change	56.25%
2 – MTN	1 - cell C	12.90%
	3 - Virgin Mobile	3.23%
	4 - Vodacom	17.74%
	5 - No change	66.13%
3 - Virgin Mobile	4 - Vodacom	100.00%
4 – Vodacom	1 - cell C	7.59%
	2 - MTN	20.25%
	3 - Virgin Mobile	1.27%
	5 - No change	70.89%

Due to sample sizes for MTN and Vodacom being sufficiently large, it could be concluded that both operators enjoyed at least over 66% retention rate of the respondents surveyed.

Table 5 – Cross tabulation of switching period for MTN and Vodacom

A3 - Current Network	1 - within the last month	2 - within the last 6 months	3 - within the last year	4 - within the past 1-2 years	5 - more than 2 years ago	6 - Never
MTN Total	0.00%	3.23%	9.68%	4.84%	16.13%	66.13%
Vodacom Total	2.56%	3.85%	6.41%	1.28%	16.67%	69.23%

This cross tabulation in Table 5 represents the distribution of switching behaviour for MTN and Vodacom, showing that for the 30% of their customers that had switched to other networks, approximately 50% of these customers switched more than 2 years ago. In Vodacom's case, customers churn numbers seemed less than those from MTN respondents within in last 2 years.

Table 6 - Cross tabulation of cell phone usage vs age

Usage VS Age				
b6_1: Making Calls	**No**	**Yes**	**Total**	
18-30	3	86	89	**96.63%**
31-45	3	52	55	**94.55%**
46-60	0	10	10	**100.00%**
61 +	0	6	6	**100.00%**
B6_2 : Internet / GPRS	**No**	**Yes**	**Total**	
18-30	31	58	89	**65.17%**
31-45	43	12	55	21.82%
46-60	10	0	10	0.00%
61 +	6	0	6	0.00%
B6_3 : SMS / MMS	**No**	**Yes**	**Total**	
18-30	10	79	89	**88.76%**
31-45	5	50	55	**90.91%**
46-60	2	8	10	**80.00%**
61 +	1	5	6	**83.33%**
b6_4 : Banking (excluding notifications)	**No**	**Yes**	**Total**	
18-30	65	24	89	**26.97%**
31-45	45	10	55	18.18%
46-60	9	1	10	10.00%
61 +	6	0	6	0.00%
b6_5 : Buy / transfer airtime	**No**	**Yes**	**Total**	
18-30	51	38	89	**42.70%**
31-45	37	18	55	32.73%
46-60	7	3	10	30.00%
61 +	5	1	6	16.67%

Table 6 illustrates that cell phone usage across age groups is predominantly for making calls, and sending SMSs or MMSs. For internet usage, there is a large negative correlation to age -0.4692 (Table 7), indicating that only the younger base in fact access the internet from their cell phones. Saying this, the number of respondents in the 46-60 and 61+ age brackets was a lot less that other categories.

4.3.2 *Correlations*

Table 7 - Correlation matrix

	C1	*C2*	*C3*	*C4*	*C5*	*C6*	*C7*	*C8*	*C9*	*C10*	*C11*	*C12*
C5				0.3012								
C6					0.5658							
C7						0.3046						
C9		0.3154			0.3542			0.7278				
C10		0.4409						0.4140	0.4923			
C11										0.5120		
C12		0.3314								0.5129	0.6858	
C13	0.3828	0.3022	-0.3404	0.3354	0.3660			0.3420	0.3837	0.4812	0.3772	0.4899
C14					0.3085	0.3070		0.3117	0.3028	0.3874		
B6_1				0.3343								

	A1	*B6_1*	*B8_1*
B6_2	-0.4692		
B6_3		0.3462	
B7	0.3509		
B8_2		-0.3364	-0.3497

Urminsky (2010b) proposes that general correlation guidelines for survey data are:

Under 0.3: Low correlation

0.3 - 0.5: Strong correlation

0.5 - 0.8: Very high – same construct?

Over 0.8: Redundancy

Thus the correlation matrix in Table 7 only displays variables where correlations are either below -.0.3, or above 0.3. Negative correlations are depicted in red. The complete correlation matrix is in Appendix D.

The factor analysis done confirmed that the following variables are one and the same construct: C5 and C6 (image); C8 and C9 (rewards); C10, C11 and C12 (overall satisfaction. Thus the results from the factor analysis support Urminsky's correlation guidelines.

4.3.3 *Descriptive Statistics of Section C of survey*

Table 8 exhibits the frequency distributions of responses for each question, as per the agreement Likert scale, where 1=Strongly disagree, 2=Disagree, 3=Neither, 4=Agree and 5=Strongly agree.

Table 8 – Frequencies of questions in Likert Matrix (Section C) of survey

	Strongly disagree		Disagree		Neither		Agree		Strongly agree	
C1	6	3.75%	17	10.63%	16	10.00%	77	48.13%	44	27.50%
C2	5	3.13%	17	10.63%	11	6.88%	99	61.88%	28	17.50%
C3	36	22.50%	44	27.50%	10	6.25%	32	20.00%	38	23.75%
C4	2	1.25%	1	0.63%	4	2.50%	19	11.88%	134	83.75%
C5	8	5.00%	15	9.38%	27	16.88%	56	35.00%	54	33.75%
C6	6	3.75%	13	8.13%	13	8.13%	66	41.25%	62	38.75%
C7	25	15.63%	35	21.88%	21	13.13%	33	20.63%	46	28.75%
C8	4	2.50%	7	4.38%	13	8.13%	44	27.50%	92	57.50%
C9	4	2.50%	13	8.13%	20	12.50%	50	31.25%	73	45.63%
C10	7	4.38%	23	14.38%	31	19.38%	57	35.63%	42	26.25%
C11	3	1.88%	16	10.00%	28	17.50%	56	35.00%	57	35.63%
C12	4	2.50%	14	8.75%	21	13.13%	66	41.25%	55	34.38%
C13	1	0.63%	2	1.25%	7	4.38%	55	34.38%	95	59.38%
C14	21	13.13%	24	15.00%	16	10.00%	48	30.00%	51	31.88%

(Refer to Table 3 for the questions mapped to C1 through to C14.)

Due to the nature of the data being ordinal for questions C1 to C13, the mean and standard deviations for these questions had to be recalculated using Stacey's (2006) Normal Distribution Fitting algorithm, as in Table 9. The complete table is in Appendix G.

A high positive mean value suggests general agreement from the item / construct, whereas a negative value suggests disagreement. C4 has a very high mean compared to the rest of the constructs, and therefore many respondents agreed that 'Keeping the same cell phone number is important'.

C3 has a highly negative standardized mean of -0.68, showing customers are in disagreement regarding 'moving to a competitor for better prices'.

A large standard deviation demonstrates a lot of variance in the answers. Any t-value greater than 1.98 or less than -.198 implies a mean that is significantly different to that of the other variable distributions. This holds true for C1, C2, C3, C4, C7, C8, C10, C13 and C14.

Table 9 – Standardised means and Standard Deviations

	standardised parameters			
	μ	σ	t-value	p-value
C1	-0.15807	0.686372	-2.91	0.0041
C2	-0.25313	0.569332	-5.62	0.0000
C3	-0.68761	1.136246	-7.65	0.0000
C4	1.408735	1.217326	14.64	0.0000
C5	-0.12378	0.803622	-1.95	0.0531
C6	0.020242	0.782082	0.33	0.7438
C7	-0.45397	1.09532	-5.24	0.0000
C8	0.402283	0.925307	5.50	0.0000
C9	0.120612	0.842133	1.81	0.0719
C10	-0.26716	0.734103	-4.60	0.0000
C11	-0.07634	0.732734	-1.32	0.1895
C12	-0.05526	0.709606	-0.99	0.3261
C13	0.388017	0.665263	7.38	0.0000
C14	-0.26455	1.068605	-3.13	0.0021

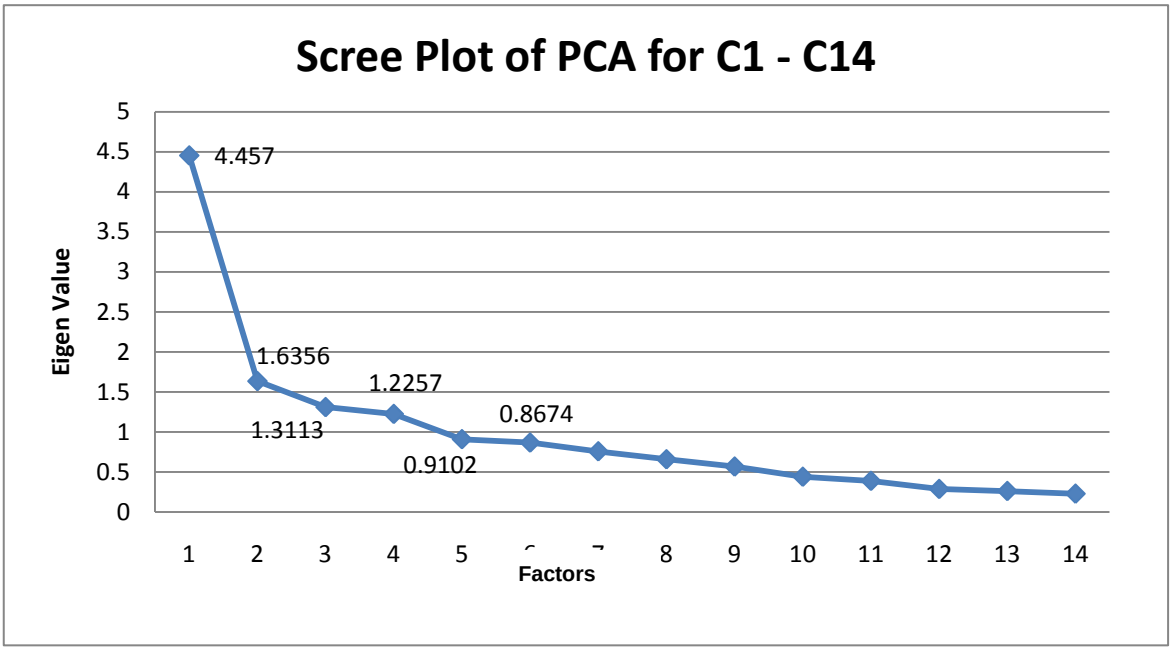
α-value	5%
Chi-test p-value	0.1858

4.3.4 *Factor Analysis Results*

All factor analyses were done in Minitab version 15. Initially, a principal component analysis (PCA) was carried out to try and establish the number of factors in the responses, and 4 factors were identified. Results of this analysis are in Appendix E.

The reason for it having been exploratory was that the number of factors was not determined or stipulated beforehand, but were determined by (Malhotra 1996; DeCoster 1998):

- a scree plot – determining number of factors before the elbow in the graph
- resulting Eigen values that were greater than 1
- results accounting for at least 60% of the variance.



.

Figure 14: Scree Plot of Principal Component Analysis (before Rotation).

From the scree plot, there are 4 factors with an Eigen value greater than 1. There is a distinct levelling out of the gradient of the graph from the 5th factor onwards. Maximum Likelihood (ML) factor analyses were carried out for 3, 4 and 5 factors, using varimax rotations. Varimax rotation was used because it is an orthogonal rotation, producing uncorrelated factors (Malhotra 1996; DeCoster 1998).

The 5 factor analysis reported a 5th factor with only one item, and therefore the 4 character factor analysis was deemed a better solution. The 3 factor ML analysis only accounted for a variance of 53.6%, whereas the 4 factor analysis for a 60.3% variance. The 4 factor solution was deemed the best of the

solutions. Results for the 4 factor analysis are in Appendix F. Any variables with communality less than 0.3 have been excluded from the analysis.

The factors resulting from the analysis are tabled in Table 10. Factor loadings signify the relative value of each item to a factor. Comrey and Lee (1992) give factor loadings the following rating scale, which was used in selecting items for the 4 factors:

> .70 – excellent

> .63 - very good

> .55 - good

> .45 – fair

> .32 – poor

Malhorta (1996) discounts factors with a loading less than 0.4, and therefore this study ignored any factor loadings less than 0.4.

Table 10 – Factors arising from exploratory factor analysis for four factors

Factor Interpretation (% variance explained)	**Factor Items**	**Factor Loading**	**Item Mean (from Table 9)**
F1 - Image Factor (33.6%)	C5 - Network provider Image is important. C6 - Company's involvement in uplifting community is important C10 - The network makes you feel like an important customer.	-0.817 -0.656 -0.510	-0.124 -0.020 -0.267
F2 - Rewards Factor (11.4%)	C8 - Rewards are important C9 - Rewards make it worthwhile to stay with network	0.897 0.777	0.402 0.121
F3 - Overall Service Factor (9%)	C11 - The network's customer care centre is always available when you need help C12 - You are happy with the customer service you are getting. C10 - The network makes you feel like an important customer.	0.862 0.749 0.447	-0.07 -.0006 -0.267
F4 - Reliability of service Factor (6.3%)	C1 – Your network is reliable. C13 – You will stay with this network for another 6 months. C3 – If another network offers better prices you will move.	-0.534 -0.558 0.540	-0.157 0.338 -0.688

Comparing the item mean of items across a factor determined the level of agreement of respondents. In F1, *the image factor*, there was slight disagreement amongst respondents. F2, *the rewards factor*, had strong agreement that rewards are important, and there was some agreement that rewards made it worthwhile to stay with a network operator. F3, *overall service factor*, showed slight disagreement from all 3 underlying items. F4, *reliability of service factor*, had a significantly high mean for price insensitivity at 0.688, and intent to stay, at 0.334. However there was slight disagreement as to the network's reliability.

Thus, forming a taxonomy from the above 4 factors: F4 was the one with most agreement, F2 had some agreement, whereas F1 and F3 both had some slight disagreement.

4.4 Results pertaining to Research Question 2

What do the main industry players consider to be the more important aspects of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases.

This section is an integrated transcript of the management and independent consultant interviews. The split between prepaid and postpaid customers seems to be 80/20 across the operators. Prepaid customers do not necessarily want to be moved over to contract, and therefore offerings need to entice profitable subscribers. There are definitely different retention strategies for prepaid and postpaid customers, with different offerings to differing segments within these bases. Current drivers of retention are a mature and saturated market, with decreasing tariffs, falling data price, the increase of voice over internet protocol (VOIP) and changes regarding the competition. Cell C is currently rebranding, and Telkom mobile is launching soon – thus there is a new entrant in the mobile market (although telecommunications is not new to them) as well as a small player looking for larger market share. These two players can only gain market share from MTN and Vodacom, and one another.

Most prepaid retention campaigns are done using above the line advertising, offering free airtime or SMSs. With the high value prepaid customers, very little is known of these subscribers, other than their cell phone number, the amount of spend on usage, spend behaviour, cell phone towers that service the majority of a subscriber's calls (to determine domicile and perhaps daytime location). Cell phone networks are not allowed to use the information obtained for RICA to add value to their customer analytics. Thus this makes retention campaigns that are below the line more difficult in the prepaid market.

4.4.1 *Champions of retention*

At the companies interviewed, retention strategies are driven primarily by marketing executives, and the segment managers within marketing. Some responsibility also falls on sales, with the sales channel managers. The call centres form part of the retention strategies, in that when a customer calls in, they are informed of various services available to them, enabling cross or up selling of products. The call centre is also involved in retention campaigns, calling customers who have been identified as possible churners. Retention strategy formulation, implementation and even measurement is not organisation wide. Saying this, organisations are realising that due to the nature of the market being mature, that retention is a better long term strategy rather than customer acquisition. As one of the managers interviewed put it 'business is now realising that retention is what is saving their bacon'.

Different functions have their own teams, staffed with similar competencies such as data analysts and statisticians, and although data is provided by Information Systems departments for campaigns, there is no drive by all departments towards customer retention, or CRM. There are currently very few IT system implemented to drive CRM. At one of the players, IT has implemented a CRM system, but the implementation is adding no value. Marketing is looking at what other systems are available in the market as CRM enablers.

There can be a conflict in KPIs between sales and marketing, in that sales is driven by new connections, and marketing by retention through upselling and cross selling. KPIs in IT are driven by delivery. Thus, in many instances the scope of projects excludes crucial value adds.

Responsibilities of customer analytics managers are to find trends in customer behaviour that lead to dormancy, which then lead to churn. Data is analysed and presented to the different segment managers within marketing and sales. Hindsight reporting gives the business insight to churn. Tenure and price plans are often used as analytical variables in measuring churn.

Even in the instance where IT resources and staff are centralised, marketing departments often have their own staff driving retention and marketing campaigns, and solutions are seldom holistic. The full scope of projects are not always discussed between functions, and therefore resources do not always add maximum value.

4.4.2 *Role of call centres in retention*

Retention strategies followed by call centre teams are both proactive, and reactive. Reactive strategies are used to try keep customers from churning, where customers have already selected to terminate a contract. In the case where customers want to terminate a contract due to financial constraints, for example, call centre agents urge them to stay with the network as a prepaid subscriber, ensuring the subscriber that this way they can retain the same cell phone number. If the customer takes up this option, although they are no longer a postpaid customer, they are not lost to the network. Proactive retention strategies of call centres involve mostly calling customers on contract who are due for an upgrade. Campaigns rules ensure that only profitable consumers are selected.

4.4.3 *Churn Prediction*

Predictive models exist that use behaviour patterns from data of customers who have already churned, and current subscribers, to predict possible future churners. Data also needs to be cross checked to see whether any promotions have been the cause of churn, as this is cannibalisation of a product, and not churn. This was more evident prior to RICA. Now that subscribers need to show proof of identity and domicile, total connections have decreased, but net connections have remained unchanged. A particular product does not necessarily decrease churn, especially where people can switch between prepaid products within one day. The fact that subscribers are switching between products is however positive, because subscribers are making cognitive decisions about their price plans.

Prediction algorithms try and predict churn based on usage over time, spend over time and general changes in customer behaviour. Frequencies at which subscribers recharge airtime, as well as the value of airtime loaded are taken into account. Changes in behavioural patterns, especially where there is a decrease in the value of airtime loaded, as well as frequency of these recharges, are churn triggers. Dormancy for x number of days is used on prepaid as a churn predictor. Once that dormancy has exceeded that number, the likelihood of retaining that customer is very unlikely.

Predictive models then create lists of customers to be contacted, depending on the segment they fall into, and their customer lifetime value, and current and predicted profitability, as well as the costs incurred in attempts to retain a customer.

4.4.4 *Customer Profitability*

The prepaid customer base is segmented based on average revenue per user (ARPU), average spend per user (ASPU), and average value per user (AVPU). These three measures are tracked over time, to enable customer segmentation,

and different segments are presented with different offerings. At one company, of the top 1 million customers, 40% are prepaid.

Mostly profitable customers are contacted in retention campaigns. In the case of non-profitable customers, if a customer's behaviour can be changed to make them profitable, these customers will also form part of the retention strategy and campaigns. These customers are offered on-net promotions to get them to use the network for chargeable SMSs and calls. On-net calls at least enables the network to avoid interconnect costs, as calls are not allowed between two different networks. Thus company X on-net promotions means that the caller can only call numbers on company X's network.

Customer profitability includes costs such as what it costs when a customer makes to a call centre; call centre calls in reaching a customer to retain them; off-net and on-net voicemail costs, costs of SMSs and airtime given as rewards; inter-connect costs; handset subsidies. Companies need to avoid giving additional free minutes and SMSs to these non-profitable customers, as this defeats the objective of creating a profitable customer. If a customer uses their phone mostly for inbound calls, and does not make calls or use SMSs, then this customer is not worth retaining. Abroad, such as in the USA, customers are charged for incoming calls if they are not on the same network as the caller, and thus the networks make money even from these non-calling customers. This is not the case in the South African market, as the caller pays for the whole call, and thus the caller's network pays for the interconnect fee.

4.4.5 *Measurement of Retention Campaigns*

Measurement of retention campaigns is essential for cost benefit analyses, as well as learning about which variables used in prediction models are better predictors, as well as which prediction models yield better results. It is also seen as a way to improve prediction models, as these change over time due the nature of the business.

Measurement from the call centre point of view also identifies which subscribers were retained directly as a result of the call centre, as well as subscribers who were called for retention, and perhaps only decided after a couple of weeks to stay with the network.

4.4.6 *Loyalty programmes and rewards*

Loyalty programs have reduced churn somewhat, and in a sense the user is trapped as to gain financially, the user has to redeem these rewards. However, only MTN and Vodacom have proper loyalty programs, where a subscriber has to register to qualify for rewards, whereas cell C offers freebies based on airtime purchases.

In one of the cases, there was an instance where an email was sent out to the public to register for rewards, however people did not know they had to use their identity number, and therefore were registering with another identity number. This was partly due to this organisation not communicating the program sufficiently and partly due to subscribers not investigating the loyalty programme further.

For the lower LSMs, these rewards are essentially cash in hand, and gives the subscriber instant gratification. Studies have shown that the reward redeemed most often is 1 SMS for low value prepaid customers, whereas for postpaid low value customers it is R1 of airtime. Vodacom allows customers to accumulate points towards a handset. Although the value proposition is perceived as great by the customer, it may be unattainable.

Organisations need to monitor churn based on customers that are on loyalty program versus those that are not. Subscribers that are no longer with the organisation but signed up for the loyalty program need to be noted, as the loyalty program was not incentive enough for them to stay with the company.

4.4.7 *Customer behaviour*

At one of the organisations, when introducing lower denomination airtime vouchers, the R15 voucher cannibalised the R30 and R60 voucher. However the R5 and R10 vouchers have added value overall. Thus, the price break it seems for a subscriber is in the R15 range. These new low value vouchers have increased the threat of mobile operators to organisations such as SAB, competing over share of wallet, and as a result SAB will not partner with mobile operators for promotions. Organisations need to take into account the cost of providing low value vouchers as well as the capacity of infrastructure to load these higher volumes of airtime vouchers.

Product cannibalisation is monitored from period to period, to determine whether cannibalisation is occurring. There has been an increase in the number of youths using data calls; however usage on the network has not increased due to applications such as MxIT. MxIT has therefore cannibalised SMSs. The networks have developed their own chat applications, however these have been a failure. MxIT being first entrant in the market definitely gave them the advantage, and now it is a matter of economies of scale. Increase in data usage is primarily in the 28-42 age bracket, rather than 13-20 age bracket. This could be due to the youth being very conscious about spend, and rather surfing the internet at home, using a parent's account.

High value spend customers have shorter queuing periods when calling the call centre, and are sent offers of better competitions. Better offers are offered to customers in more prominent segments.

4.4.8 *Regulation*

RICA has definitely decreased churn, and gross connections for cellular network companies. However some sales personnel do not see this connection. What is interesting is that RICA information is passed onto the government, and the cellular providers are not allowed to use this data to all at. This then causes frustration with the subscriber if they call in, as they cannot understand why they

get asked to identify themselves, as the cellular providers are still do not know who these customers are in the case of prepaid. This is a definite disconnect which is posing a challenge.

The Protection of Personal Information (POPI) will complicate marketing research efforts as respondents by default are not expected to be part of a study, or receive communication, but their permission needs to be received before they participate in any research. Thus reaching out to customers for retention can be a challenge. One of the companies said that it is against company policy to spam customers, and only engages with subscribers who have granted them permission to do so.

Each number on the network also incurs a licensing cost to ICASA, and therefore, if a number is dormant for more than 90 days on prepaid, the networks recycle these numbers, and the subscriber automatically loses this number, as well as any airtime that is loaded against this number.

4.4.9 *Offerings that affect churn*

In cases where a company offers a promotion on acquisitions, but not to existing customers, this causes churn. Even though the subscriber may remain on the network, they get a new number on the network, and this effects churn rate. This type of arbitrage is a problem. One of the companies interviewed ensures that if a promotion is launched for acquisitions that existing subscribers can also benefit from this offering. Shortage of airtime in the market could also result in a consumer purchasing a new SIM card with preloaded airtime. Thus organisations need to ensure a large distribution of airtime vouchers as this speaks to accessibility. This is a security risk in areas where there is no infrastructure for virtual airtime vouchers, as physical airtime vouchers represent money. Shops may not want to keep large numbers of vouchers which can amount to large sums of money.

One company does tariff analysis for high value subscribers, checking whether another package would be more suitable for a subscriber, saving a customer

money, and therefore advising them as such. This then breeds loyalty, as customers realise that the provider wants what is best for the consumer. For very high prepaid spenders, organisations offer them expensive handsets, such as a Blackberry, in return for their spend, and this can also lead to loyalty.

Organisations make use of vernacular radio and regional press in advertising new offerings, improvements to loyalty programs or even incentives to sign on to loyalty programs or use a service more frequently. This could be in the form of a competition, or backdating loyalty points if a subscriber signs on today.

One of the companies mentioned that due to the illiteracy rate of the South African population, it is difficult sending SMSs and MMSs for advertising, educating or retention efforts, and leaving a voicemail message has its disadvantages.

4.4.10 *Hybrid Contracts*

Hybrid contracts are popular amongst the more affluent client base, and are used in many cases by parents wanting to control their children's' spending. Retention is easier to control, as the customer is known as the model for these offerings is based primarily on a postpaid model. Prepaid users do not want to be tied in to a 24 month contract, even if the spending is monitored on the hybrid packages. Prepaid is really about having cash in hand, and many subscribers feel less pressurised using prepaid.

4.4.11 *Service Recovery*

One of the independent consultants' current view is that the ability of each network to effect service recovery in response to customer complaints, problems is a crucial factor in retaining customers and building long term relationships.

He felt that Keaveney (1995) downplays the importance of pricing, however he agreed that pricing and service are two main causes of defection. He stated that in any type of short term environment, such as insurance or prepaid services,

there is a loyal customer segment, and there will be those that switch as a result of pricing. These results are more prominent in consumers falling into lower living standards measures (LSMs). In higher LSMs it boils down to service: quality of the network; efficiency and effectiveness of billing.

Service recovery is the real start of retention. In the case of the cellular networks, subscribers contact the call centres. These centres are IT solutions that have been implemented with a whole lot of rules around efficiency, such as minimising call backs and ensuring calls do not exceed a maximum length. Complaints and queries need to be cross functional, as the call centre agents do not have the necessary knowledge to action billing related or infrastructure queries. This is usually where the process breaks down, resulting in customer defection.

Approachability of an organisation is determined by the length of time a subscriber is put on hold when calling the call centre; responsiveness is determined by following through of a query or complaint; trust is build when a customer gets closure, and feels satisfied that the that organisation does take their concerns seriously.

4.4.12 *Human resource management*

Problems exist with front desk support. Call centre staff are monitored for quality, and dedicated resources exist for this quality assurance. Call centres try for resolution within 3 calls. Call centre staff go through performance management processes to identify gaps in product knowledge, training issues on systems and mentoring. No service level agreements exist between functions for resolution of call centre queries. This makes it difficult for service recovery levels to be kept high if certain departments do not see the necessity of resolving customer queries within a short period, or shortage of resources exist. These cases do cause a break down in a customer's trust levels.

4.5 Summary of the results

In summary, the different parties interviewed all agreed that retention is a proactive process, as once those customers are lost, there is no way of contacting them. All interviewees mentioned that price was one of the main factors that affect the consumer. Other criteria leading to churn, according to the managers, are bad service experiences and network unreliability.

A single view of a customer spanning all channels and touch points is essential in managing the relationship with the customer. The more a customer is kept engaged, the greater the likelihood that they will remain with an organisation. It was also mentioned that brand image is a pull towards a network operator, however it has no effect on a customer leaving the network.

The results for the different research questions have been presented and described. For the consumer questionnaire, the factor analyses were documented, with some descriptive statistics of the sample. The main outcomes of management and independent consultant interviews have also been acknowledged. Chapter 5 will analyse these results, and try and align findings. These results will then also be used to formulate recommendations to marketing executives in the telecommunications sector regarding prepaid customer retention strategies.

5 DISCUSSION OF THE RESULTS

5.1 Introduction

In this chapter, the findings from the 2 research questions will be discussed, and an attempt made to align the outcomes, and highlight any anomalies. These results will be discussed with reference to the literature review.

5.2 Sample description of consumer survey questionnaire

There was no predetermined demographic profile of respondents for the consumer survey. The only requirement was that every respondent was over 18, and a prepaid mobile telephony consumer.

A1: Age Brackets

Table 11 – Age distribution of South African population (statssa.gov.za 2009b)

Age Bracket	Survey Age Bracket	Population %	Survey %	Difference %
15-29	18-30	46.4%	56%	9.6%
30-44	31-45	22.85%	34%	11.15%
45-59	45-59	18.94%	6%	(12.94%)
60+	60 and over	11.8%	4%	(7.8%)

On comparing the results with the age statistics of the population of South Africa, as in Table 11, the age brackets were not exactly representative of the population. A larger portion of people in the age brackets 18-30 and 31-45 were surveyed. The age brackets used in the survey and population statistics were almost on par.

A2: Gender

Population statistics by gender show that, across age categories, the population as 47% male and 53% female (statssa.gov.za 2009b), whereas the study had 38% respondents being male, and 62% female. This study does therefore not

represent the South African adult population. However, no reweighting was done on this variable.

A3: Current Network

In chapter 1, MTN's market share was reported as 33.6% and Vodacom 52.5%. The sample leaned slightly towards MTN, as in the sample, 49% of respondents were Vodacom customers and 39% MTN customers. The balance of the sample was made up of 11% Cell C subscribers and 1% Virgin Mobile.

B7: Repurchase frequency of airtime

Repurchase frequency showed availability and accessibility of airtime as not problematic, with 73% of subscribers purchasing airtime at least once a week. In rural areas this could pose a greater problem, unless the consumer's behaviour differed from this study, and airtime was bought using cell phone banking. From this study this behaviour could not be confirmed. Thus the inconvenience criteria for customer churn in Keaveney's model, as Figure 3 records, was not evident here. However, the Virgin customers did complain of availability of airtime, iterating that it could only be bought from ATMs, using cell phone banking or from Virgin mobile shops. Researching the Virgin mobile website, the study found that airtime was also available by buying on credit card, from selected retailers and petrol stations(virginmobile.co.za 2010). Thus, airtime was not available from informal vendors and spaza shops, unlike MTN, Vodacom and Cell C airtime vouchers. Recency and frequency of purchases are deemed by Jones and Sasser (1996; Kim et al. 2004) and Kim et al (2004) as good gauges of customer loyalty.

B8: Why did subscriber opt for prepaid?

61% of the sample opted for prepaid to control spending. Some of the subscribers had already had contracts, which lead to excessive spending. These subscribers would fall into the category who did not want to be tied down for 24 months. A number of people had also mentioned that their application for a contract had been unsuccessful.

The above results highlights the advantage of consumers being able to budget better, using it only when they have the disposable income available (Hommer and Krause 2004). What was a concern was that there were respondents that have no idea of how much they spent on airtime in a month, thus the question being removed from the pilot survey questionnaire. It seemed as if some respondents spent based on money in hand, and therefore had no aspiration towards building some form of savings.

5.3 Discussion pertaining to Research Question 1

What do consumers perceive to be the more important factors of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases?

5.3.1 *Cross Tabulations*

Of the respondents, Table 4 shows that Vodacom had the lowest churn rate, with MTN second. Cell C had only 17 respondents for the survey, and Virgin Mobile 2 therefore these samples were too small to enable any conclusions to be drawn. Currently Vodacom does hold the larger market share, and this lower churn rate from the survey results reinforces they are the market leader. The study showed the churn rate at 30% for Vodacom, however the Telecommunications Report for 2009 Q3 reported it as 40% for the prepaid base (Business Monitor International 2009) .

Table 5 shows the majority of respondents having churned more than 2 years ago, with the next set having churned 6-12 months from the time the survey was carried out. Overall, MTN had the greater percentage of subscribers moving to other networks. Saying this, the sample was insufficient to carry the same study out on Cell C and Virgin Mobile.

Table 6 shows that the majority of respondents, regardless of age, used their phones for making and receiving calls (96.25%) and sending SMSs and MMSs (88.75%). Thus, it seems that Kim et al's (2004) findings where customers

switch due to unavailable value added services (VAS) is not the case in this market, as SMS and MMS is the VAS most used, and all networks offer this service, with many giving free daily SMSs. There were only 12 respondents out of 71 over 31 years of age, representing 17%, having used their cell phones for the internet, whereas in the age group 18-30, 65.17% used the internet. This could be attributed to a) cell phones not being internet enabled; b) subscribers deem the costs of accessing the internet through the mobile network being too high; c) not understanding the difference in costs incurred in surfing the internet, and the lesser cost of using applications such as MxIT and Facebook; d) social behavioural differences: older people would choose to rather chat with a friend, whereas youngsters preferred MxIT and Facebook as a cheap medium of staying in touch. These methods offer a place of safety for the youth (Donner and Gitau 2009), allowing them to stay in touch with friends further afield, as well as enabling them to stay indoors when communicating with friends, and therefore having a lesser likelihood of having to deal with criminal elements.

5.3.2 *Correlations*

From Table 7 it is evident that questions C1, C2, C4, C5, C8, C9, C10, C11 and C12 had a strong correlation to C13 (intention to stay with current network for at least another 6 months), as these co-efficients were all between 0.30 and 0.50. C3 had a strong negative correlation with C13. The factor analysis in section 5.3.4 will expand further on these correlations.

The correlation matrix also suggested a strong negative correlation between A1 – ‘age bracket’, and B6_2 – ‘use of the cell phone for internet access’, which has already been discussed in section 5.3.1.. Thus older respondents use the internet less, if at all.

There was also a high correlation between B_1 – ‘using the cell phone for making and receiving calls’, and B_3 – ‘using the mobile for SMSs and MMSs’. Thus SMSs and MMSs are value added services that were important to the users.

B8_2 – ‘on prepaid due to being unsuccessful in getting a contract’ had a strong negative correlation with

- B6_1 – ‘subscriber uses mobile phone to make and receive calls’ because the subscriber would make and receive calls regardless of whether they were on prepaid or contract.
- B8_1 – ‘on prepaid to control spending’ as the subscriber was on prepaid because they have no choice, and not to control spending.

5.3.3 *Descriptive Statistics*

For the descriptive statistics, values for C1 to C14 are reviewed. It seems that overall the respondents identified all 5 ratings as having different meanings, and therefore there is no fear that respondents converted the scale to a dichotomous (Yes/No) response. When the study was undertaken, in some instances the researcher clarified that this was in fact the case, by asking respondents if they meant ‘agree’ or ‘strongly agree’, or on the opposite end of the scale, ‘strongly disagree’ or ‘disagree’.

For C1 to C14, all but C3 had a mode of 4 or 5, suggesting respondents mostly agreed or strongly agreed to these statements. However, looking at the frequency counts in Table 8, the following items scored greater than 50% for a ranking of 5 – ‘Strongly agree’:

- C4 – keeping the same cell phone number is important to you : 83.75% ($\mu = 1.41$)
- C8 – the rewards offered to you (free minutes, free SMSs, discounted calls) are important to you : 57.5% ($\mu = 0.40$)
- C13 – intend to stay with network for next 6 months : 59.38% ($\mu = 0.39$)

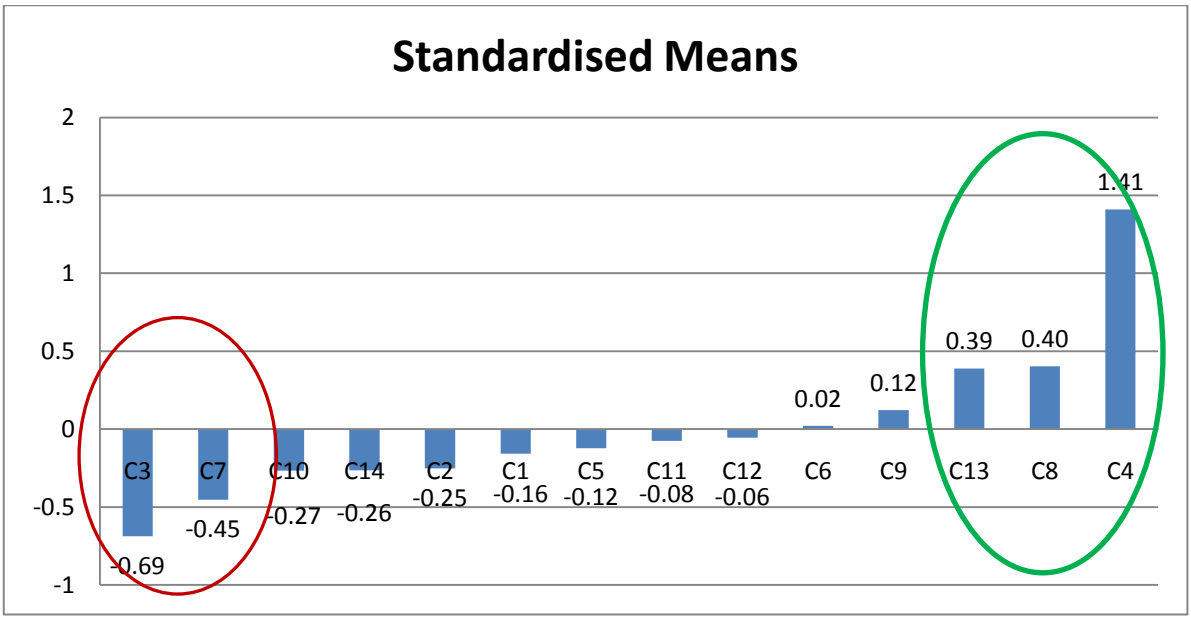


Figure 15 : Graph of Sorted Standardised Means of questions C1-C14

Looking at the standardised means, these 3 items had the highest mean values, in the same order of magnitude, as depicted by the green circle in Figure 15. C8 and C13 are discussed with the factor analysis interpretation. Although C4 – 'keeping the same cell number is important to you' was not really discussed in the literature, it can be linked with Keaveney's convenience construct. When people were asked why this was very important to them, they said that friends, family and business partners all new this as their number, and that this had been the case for years. This number therefore formed part of their identity, and people were thus emotionally attached to it. Thus this could be seen as a switching barrier. Regardless of Mobile Number Portability (MNP), which allows subscribers to move from one network to another and keep the same number, and was available for all operators in South Africa at no cost to subscribers, the factor analysis presents other reasons why MNP on its own does not necessarily encourage churn.

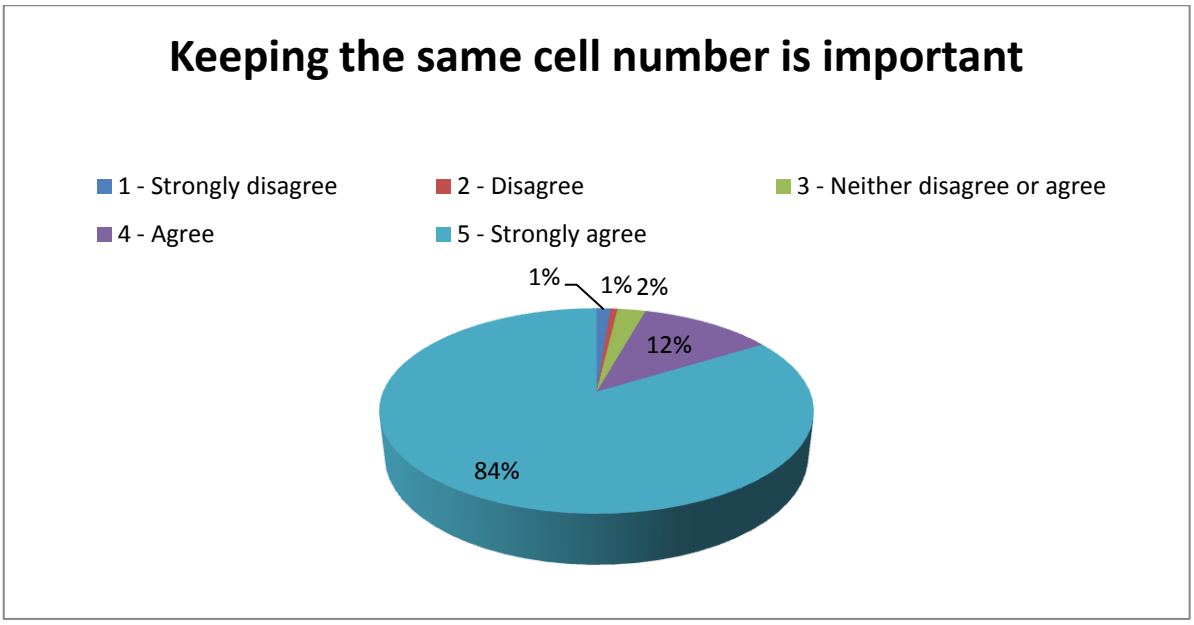


Figure 16 : Distribution of C4 – keeping the same cell number is important

C3 had the highest level of disagreement between respondents , and C7 the next highest disagreement, as depicted by the red circle in Figure 15.

In the case of C3, most customers disagreed that if another network were to offer better prices they would move, with the mode being 2. This showed therefore less price sensitivity, and that customers looked at the whole offering, and not just price.

Subscribers also disagreed on C7 – 'being able to buy small values of airtime such as R2 or R5, are important to you'. Many said that this amount of airtime was insufficient to engage in a conversation. However, it was highlighted that in cases of emergency, where subscribers were cash strapped, that this was a good idea to allow them to make contact. This is contrary Business Monitor International's (2009) finding that availability of lower denomination airtime vouchers leads to retention.

Now the study will move to interpreting the factor analysis results.

5.3.4 *Interpretation of factor analysis*

The factor analysis brought to light 4 factors, as listed in Table 10. These are discussed in order of most agreement to most disagreement in this section.

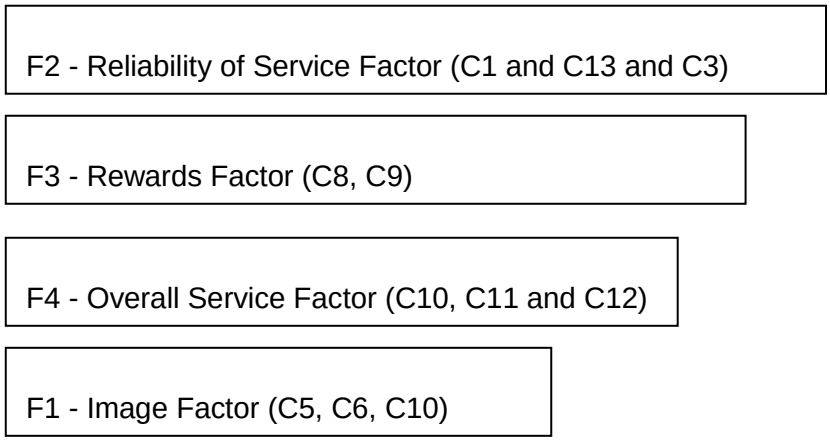


Figure 17: Ordering of factors bases on Standardised Means, from Most agreement to Most disagreement

a. *Reliability of Service Factor*

The factor with the most agreement was F2 which was labelled the '*Reliability of Service Factor'*, and includes items C1 – 'reliability of network' C13 - 'intent to stay for another 6 months with current network' and C3 – 'moving for better prices' (NOT). The three factors all had a good factor loading. There was some slight disagreement amongst respondents as to the reliability of the network. This factor accounted for 6.3% of the variance in the factor analysis. The subscribers therefore group a reliable network and intention to stay and price insensitivity in one factor.

Thus, this factor supports both Xevelonakis' (2005) finding that customers want solutions that are reliable, as well as results from the Nokia survey that network quality is a factor considered before switching (Ferguson and Brohaugh 2008) . Kim et al's (2004) research also found that one of the main reasons for customer switching was poor call quality. This is after all the core business of the network operators, and if consumers cannot trust the product or service that they are getting, and will be getting, as reliable, they will churn. This is in line

with Gartner research, that postulates that trust and usability, hand in hand with customer experience are primary proponents of customer loyalty in the telecom sector. As mentioned in the Ernst & Young Business Report (2009), if network infrastructure is inadequate, then the service central to the organisation's functioning cannot be provided for suitably, and customers will be forced to churn, regardless of brand equity or past loyalties. Another proponent that builds trust is the accuracy and credibility of the billing structures. If this credibility is breached, this creates another reason for consumers to churn.

b. *Rewards Factor*

The next most agreeable factor encompasses rewards, and was labelled '*Rewards Factor'*, making up 11.4% of the variance of the factor analysis. Both items have excellent factor loadings. Thus, C8 - Importance of rewards, C9 - Rewards being seen as a value add and incentive to stay with the operator by the consumer, are seen as one construct.

Here it is necessary to distinguish between freebies and rewards. Cell C gives many freebies away, in the form of free SMSs or free minutes, as do the other networks depending on promotions running at a point in time. Currently only MTN and Vodacom have a proper loyalty program, where the subscriber has to register for the rewards. Yet, there is no charge to belong to these loyalty programs, unlike many other loyalty programs that charge a yearly subscription. Thus, this already is a huge advantage to the subscriber. These offerings, whether freebies or rewards through the loyalty programs, incentivise the subscribers to stay with a network, as it makes them feel in most instances they are a) getting value for money b) accumulating rewards to use later to either buy themselves more airtime, SMS, MMS or data bundles, or even a new cellular phone (mtn.co.za 2010; vodacom.co.za 2010). Some respondents were disgruntled however, as free minutes awarded (not from the loyalty program) do expire if they have not been used within a certain time period. Loyalty plans and rewards are thus seen to be benefitting customers through value adds, and not entrapment (Ferguson and Brohaugh 2008). As Jones and Sasser mention, there is a chance that false loyalty can be created by such plans if an

organisation has a monopoly, and this could even be extended to an oligopoly, as is in the case of the South African market, where subscribers do not have a large choice of selection regarding network operators. Advantages of loyalty schemes is that not only do they provide customer behaviour data by use of the loyalty card, but firms also know the demographics about the customer (Business Monitor International 2009). Reading up on what is required to register for the loyalty plans, in MTN and Vodacom's case, this registration process does provides some value to the organisation as the organisation gains the ID number of a prepaid subscriber. The age and gender of the subscriber can then be determined. This id number can then be sent on for credit vetting information from companies such as TransUnion and Experian, however, this comes at an additional cost. This can then be combined with the frequency of airtime purchased, and other customer behaviours to profile and segment the customer.

c. *Overall Service Factor*

A third factor in the data was labelled the '*Overall Service Factor',* with a variance of 9% for the sample. Here, respondents were asked about C10 - the network made them feel important, C11 - the customer care centre was always available when they needed help , and C12 - they were happy with the customer service they were getting. This factor thus encapsulates availability of service, satisfaction and customer experience. C11 and C12 had excellent factor loadings, whereas C10 was at 0.447, based on Comrey and Lee (1992) rankings in section 4.3.4, this is borderline poor. This is also the point with the most disagreement between respondents. C11 and C12 have a standardised mean very close to zero. Thus, it seems that there was neither much agreement or disagreement for these items within this factor. However, there was some disagreement regarding C10, where subscribers felt that the network does not make them feel important. Thus, it's as if the respondents felt that the networks are not going out of their way regarding overall service, and service levels needed to be improved upon.

Figure 2 (Jones and Sasser 1996) describes the relationship between loyalty and satisfaction in a highly regulated environment, with few competitors, as is the case within the South African telecommunications market, as having the majority of customers being dissatisfied and being loyal by default, rather than out of choice. What may build on to this satisfaction, and perhaps build on the loyalty, making it less of a false loyalty, are brand equity and powerful loyalty programmes. Loyalty programmes and rewards have already been discussed in the *Rewards Factor*, and brand equity will be discussed as part of the *Network Image Factor*.

Jones and Sasser (1996) listed four criteria for customer satisfaction: the basic product or service, which is the minimum requirement for all competitors to deliver; customer assistance; recovery process; superior service that meets a customer's needs and expectations through customised solutions. For a completely satisfied customer a firm would have to meet all the above criteria. The importance of the basic service has been established. Within the prepaid subscriber base, it is rather difficult to deliver customised solutions due to the network operators not really knowing too much about their subscribers, other than usage, and their geographic positioning based on which cell phone towers service these subscribers most frequently. It has also been said that customers should be segmented based on their spend and economic values (Reinartz et al. 2004), and that in some instances that spend then reflects the quality of service a customer receives, as well as the quality of service recovery. Bearing this in mind, not every prepaid subscriber will therefore experience an optimal customer service experience.

Kim et al (2004) consider that an increase in customer satisfaction prevents churn, and makes customers less price sensitive. However, the results of the survey show that respondents are less sensitive to price, even though it seems they have resigned themselves to an average overall service experience. This once again begs the question of whether consumers really have a choice in the current telecommunications sector.

d. *Network Image Factor*

The last factor, which is the factor with most disagreement, is F1 - '*Network image'*, which accounts for 33.6% of the variance in the factor analysis. The three items : C5 - Network image is important to you, C6 - Company's involvement in uplifting the community is important, and C10 - network made them feel like an important customer, have very good factor loadings. The standardised mean for these items lean towards slight disagreement.

This factor shows how consumers categorise corporate social responsibility with brand image, and that how an organisation makes them feel is grouped with these two other items. Consumers want to be able to identify with an organisation's values and propositions. This is supported by the Nokia survey, that points out that brand image is considered by consumers when wanting to switch, over pricing and handset availability (Ferguson and Brohaugh 2008).

5.3.5 *Discussion of Subscriber comments*

Table 12 – Subscriber Comments

Subject	**Comment**
General	A large portion of respondents that selected buying airtime at least once a week commented that they bought airtime every 2nd or 3rd day.
General	Call rates are too high.
Prepaid	Contract will lead to excessive spending.
Prepaid	Currently holds a temporary position, and is not guaranteed long term employment.
Prepaid	Going on pension, and will not have a steady income.
Prepaid	Prepaid: no money, no usage
Cell C	Has better offers than competitors. MTN Zone is a great offering from MTN. Vodacom rates are ridiculous during peak and Talking Points from Vodacom are not enough.
Cell C	Very bad network reception -> cannot utilise rewards as service unreliable.

Cell C	Good free minutes offering, however free minutes should not only be on-net.
Cell C	Customer service was shocking and call centre staff rude. Much happier at Vodacom.
MTN	Why are free SMS's available only per day and do not roll over?
MTN	Internet is too expensive at R2 / MByte.
MTN	Customer care centre is always available, but slow to answer calls. Sometimes subscribers hold for long periods of time, and call centre staff are sometimes rude.
MTN	Network has improved over the past year.
MTN	Keeps people informed about other offerings and services. However, the details are not always explained.
MTN	Network quality is very poor – signal in some areas is poor. eg Dobsonville and Braam Fouche (RDP housing). Concern voiced by a number of subscribers.
MTN	Don't understand the free weekend airtime offering when one buys airtime during the week – needs to be communicated and explained better.
MTN	Vodacom has better offerings currently e.g. talk for 2 minutes and get 4 free minutes.
Vodacom	Even though talking points are very worthwhile, Cell C and MTN have great freebies – Vodacom need to up their game.
Vodacom	Innovative with new offering, keeping customers from switching.
Vodacom	Sometimes has network problems.
Vodacom	At one time there was option to purchase R5 airtime from cell phone banking, however minimum has changed to R12 – why?
Vodacom	Offering of free calls between 12 - 5am is impractical.
Vodacom	Level of customer service at Vodaworld is not very good.
Virgin	availability and accessibility of airtime is a problem as it is only available through ATMs and Virgin mobile shops.
Virgin	Poor benefits, and no marketing strategy.

The subscribers were given an opportunity to voice any complaints or compliments they had about their networks, and these have been tabulated in Table 12.

It seems that there is a lack of knowledge amongst subscribers of how some of the product offerings work, especially concerning free airtime or SMSs. The networks all seem to have customers experiencing poor reliability and quality. Subscribers feel they are paying too much for mobile telephony, and do see prepaid as a way of curbing usage. From some of the comments from subscribers pertaining to all three networks, the importance of rewards and free airtime and SMSs is highlighted, with comparisons often being made to other networks.

5.4 Discussion pertaining to Research Question 2

What do the main industry players consider to be the more important aspects of customer retention strategies that apply to the South African prepaid mobile telecommunications customer bases.

The split between prepaid and postpaid customers seems to be 80/20 across the operators. Prepaid customers do not necessarily want to be moved over to contract, and therefore offerings need to entice profitable subscribers. There are definitely different retention strategies for prepaid and postpaid customers, with different offerings to differing segments within these bases. Current drivers of retention are a mature and saturated market, with decreasing tariffs, falling data call prices, the increase of voice over internet protocol (VOIP) and changes regarding the competition. Cell C is currently rebranding, and Telkom mobile is launching soon – thus there is a new entrant in the mobile market (although telecommunications is not new to them), and secondly a small player looking for larger market share. There are only 2 mobile companies they can gain market share from, namely MTN and Vodacom.

Tenure and spend on prepaid are two of the main variables looked at when analysing customer churn and loyalty. Therefore high value spenders who have

been with an organisation for a certain time period need to be managed, and made to feel they are an important customers. Currently, the issue with the prepaid base is the approximately 10%-20% earns 80% of the revenue. Thus, the operators need to ensure that these customers do not defect. They also need to ensure that the customers that do generate profit, start generating even more profit. Non-profitable customers are not to be targeted in retention campaigns.

Organisations are realising more and more the need for great customer experiences as one of the keys to customer retention. This is one of the main motivations for Cell C's rebranding. The challenge is getting individuals to deliver on these experiences continuously.

5.4.1 *Champions of retention*

Ahmad and Buttle (2001), amongst others mention that where resources are limited, retention efforts should have a greater focus than acquisition. In the current market, it is not so much that marketing resources are limited, but that the market is saturated. Although retention strategy formulation, implementation and even measurement is not organisation wide, but left to marketing, retention is seen as imperative to an organisation's sustainability. There is a disconnect in that without the whole organisation knowing the intricacies of retention strategies, the value added by employees is not optimal. CRM solutions that are not implemented as holistic solutions across units and channels, result in customer and shareholder value being forfeited (Payne and Frow 1999). Although the organisations have the same understanding of CRM as Payne and Frow, implementing such a solution as in Figure 6 is a huge challenge in any organisation, and needs to be backed by top management. Having resellers as part of the sales force complicates the model, adding another dimension to relationship management. Overall, the organisations seem to have this framework, or part of it, in place. Once again, its is about how the different pieces of the diagram interact with one another, as a result of human relationships and dynamics within an organisation.

Measurement of campaigns is necessary to gauge whether these campaigns, and the strategies these campaigns result from, are in fact successful (Xevelonakis 2005; Pauty 2008). Ultimately, customer retention will affect the bottom line, as retention of profitable customers will increase an organisation's revenue.

5.4.2 *Churn Prediction and Profitability*

The organisations all have some form of churn predictive modelling, to proactively identify churn behaviour. Customer tenure and price plans are used to analyse predictive churn, as are various customer behaviours. The challenge is having processes in place to get the data required on time, so that there is no lost opportunity (Xevelonakis 2005; Pauty 2008). Most organisations have multiple systems that need to integrate together to collect this data into a central point. Due to the nature of business being dynamic, and system upgrades and changes taking place constantly, this challenge is very real. IT management need to be communicating with one another continually, as with other stake holders that use data from various systems, for possible issues and risks to be known beforehand, and mitigated.

Organisations cannot reach out to retain all customers, as it is nonsensical to retain unprofitable subscribers, unless customer behaviour can be changed. Thus prediction models need thresholds, which change based on the business cycle, and the market. An example is customer spend - within a recession, this measure cannot be expected to be the same as in previous periods, and thus thresholds need to be lowered, otherwise retention campaigns could overlook profitable customers. Segmentation of customers is often done based on economic value (Reinartz 2005), and better churn models would take this into account. Therefore CLTV models are used in allocation of market resources, and selection of customers in retention strategies (Haenlein et al. 2006).

5.4.3 *Loyalty programmes and rewards*

The organisations realise that the cost of loyalty programmes cannot exceed the value of the customer. Even though it does not cost a subscriber to join a loyalty program, in the case of an MTN subscriber, they need to first use at least R100 worth of airtime, to redeem R1 of airtime through loyalty points. Most freebies (excluding redemption of loyalty points) given are on-net, and therefore the network saves on interconnect costs for these freebies. The loyalty programs provide the networks with the customer's identity number for the prepaid base, thus adding little value to marketing research as very few demographics are known. There is some benefit, however small, for the organisation. These loyalty program in no way lead to copious amounts of data being gained about the customer (Dowling and Uncles 1997; datamonitor.com 2010). Thus, these loyalty programs can be seen as more of a value add to the customer, than to an organisation. Saying this, loyalty point give-aways are used to entice the customer to load more airtime, and spend more. As per a company's brand, loyalty points are seen as a pull factor rather than a push factor by consumers to an organisation.

5.4.4 *Customer behaviour*

Ferguson and Brohaugh (2008) mention that Gartner research found that customer loyalty can be determined by the availability, trust and reliability of a product, which lead to customer satisfaction and loyalty. Consumers want solutions that work, and meet their requirements. Customer behaviour can be forced to change by the availability, trust and reliability of a product. Thus churn prediction models can also be used to trend information regarding distribution of airtime, the quality and reliability of infrastructure supporting the business. Although very little is known of the prepaid customer demographic, overall behaviour can be trended. This can then be compared with that of the competitors where available.

5.4.5 *Regulation*

Monama (2010) states that RICA has had an unfavourable effect on prepaid customer bases, with gross activations having decreased. RICA has decreased churn, and nett connections have stabilised. The fact that its more difficult to buy a SIM card over the counter now makes the consumer that is always trying to get the best deal, hopping from one network to the next, think twice about moving on. From the networks' point of view, less gross connections does mean saving on certain operational costs. The question is whether revenue and overall profitability has been affected.

Government allowing for Telkom Mobile, and other new entrants in the future to enter into the market will have an effect on the profitability of the market (Ernst and Young 2009). ICASA allowing for interconnect fees to be lowered will also impact earnings. Organisations need to start selling total solutions talking to TMT (Technology, Media, Telecommunications) and ICT (Information and Communication Technologies), not just fixed line or mobile telecommunication solutions, and one ponders whether this is in fact Telkom's strategy.

5.4.6 *Service Recovery*

Service recovery is one of the four criteria that Jones and Sasser (1996) list as a requirement for customer satisfaction. There are service recovery processes in place for customers who have had a bad experience or service, including bad network service. Organisations realise the need for good and great customer experiences towards customer retention, and that without service failure recovery, a bad experience cannot be rectified. Consumers expect

a) good quality of the network and infrastructure, as these support the core products (making calls and loading of airtime) being offered;
b) efficiency and effectiveness of billing.

Therefore organisations are in agreement with the independent consultant, and Keaveney (1995) , that service recovery processes is a construct in retention, albeit reactive retention strategies rather than proactive. The

profitability of a customer, and their segment, tenure and CLTV is also taken into account in these instances. Another reality is that staff are not often empowered to make decisions, especially where there are financial implications. These instances then need to be escalated to higher management, taking time to be resolved, and this is also an hindrance to service recovery.

5.4.7 *Human resource management*

The dynamics between individuals within organisations, management, and their focus on customer satisfaction in the long run affects customer retention. Regardless of the amount of training an individual gets, they need to feel incentivised by an organisation, and that they identify with its values, to give of their best. Loyal, motivated and incentivised employees will tend to create a better customer experience (Reichheld and Sasser Jr 1990; Reichheld and Teal 1996; Reinartz et al. 2004). Employees represent a firm's brand, and need to reflect the value propositions correctly to customers (Keaveney 1995). Customers will not leave because of the brand, but due to bad customer experience, that is not as per their expectation of the brand. Employees can boost or break down a customer's trust in an organisation.

5.5 Aligning results from the customer survey questionnaire with those of management and experts

The study concludes that four main factors resulted from the consumer survey, with the respondents agreeing that 'Reliability of Service' and 'Rewards' factors are essential to them staying with a network provider. In addition, many respondents want to keep their cell phone numbers, as it forms part of their identity. It is also noted that customers are not price sensitive, although organisations seemed to disagree with this finding. Consumers also feel that communication of products and offerings in the market, including promotions, need further clarity. Due to lack of understanding, they feel that the networks are in some instances penalising them.

Organisations recognise the importance of loyalty programs, rewards and freebies in customer retention, as well as the reliability of not only their mobile infrastructure, but all systems core to the business, such as billing. They also realise that it is preferable to keep customers that are profitable; non-profitable customers are just given less priority overall. The prepaid bases are segmented, and high value customers are given preferential treatment, and more lucrative offers to gain further loyalty. However, not knowing who these customers are, and not being able to use RICA data to enrich data analytics does put organisations at a disadvantage as to offering the different segments even better targeted offerings, based on the consumer's life stage and LSM. Marketing and sales aim at customer satisfaction, however, where other functions and departments are not customer centric, and projects are not cross functional, organisations are more likely to fail at customer satisfaction.

Reflecting on Keaveney's model of 'Customer Switching Behaviour' portrayed in Figure 3, for customer retention in the prepaid mobile telecommunications sector the constructs that organisations need to focus on are Inconvenience, Core Service Failure, Service Encounter Failure and Response to Service Failure. Inconvenience leads to availability of airtime, SIM kits, and prepaid handsets in the market, and speaks to distribution channels, supply chain management and resources involved in delivery of these services. Relationships with wholesalers, retailers, resellers and third parties are essential here, and these products are usually sold through these channels.

Core service failure encompasses enabling loading of airtime correctly as well as enabling subscribers to communicate as and when they necessitate it, and correct billing. In case of infrastructure and billing failures, an organisation's credibility is questioned as a core competency is seen to have been a failure, and a consumer's trust is lost. Consumers can even feel that they have been cheated by an organisation. Service encounter failure looks at customer satisfaction resulting from interaction with staff at different touch points where a consumer has had a bad experience. What led to this bad experience, and what amends were made to rectify this, in other words, what responses are available

for service recovery failure. Different touchpoints include the internet, call centres as well as resellers.

5.6 Conclusion

The interpretation of results has highlighted what factors of customer retention that the subscribers deem important, and those that organisations and experts regard as important in customer retention campaigns.

Organisations definitely recognise the benefits of retention models and campaigns. Much effort is being put towards profiling customers, segmentation and directly engaging with most profitable customers. Organisations seem to understand what the consumers feel are retention enablers for them, inter alia, a reliable product and/or service and rewards, whether in the form of freebies or resulting from a loyalty program. With regards to customer service, no organisation admitted that they agreed with consumer perceptions that this was inadequate, or that certain touch points are weaker than others. The subscribers surveyed highlighted this as an area with much disagreement amongst them, meaning that there is no consistent level of customer service. This study has revealed that there is no common understanding of what customer service should be in the mobile telecommunication market. Although customers would like to keep their number, the operators did not regard this as a major churn or acquisition driver, and it definitely did not change the landscape of the market when it was launched. The organisations all believed that pricing was a consideration; however, this was not a finding from the survey and it definitely seems that branding has a greater pull than pricing.

All the organisations have the resources available to implement great retention strategies. The challenge rests in getting different functions and areas needing to be aligned regarding vision, values, process and strategy as a whole. Retention is successful where the whole firm is customer-centric, and not just marketing. It is also a proactive strategy, and it seems that most sales strategies in this market, are reactive to competitors, rather than innovative.

This is very evident in the past 6 weeks with Cell C rebranding, and Telkom Mobile (Heita) entering the market.

South Africa is an emerging market, and therefore parallels need to be drawn with the telecommunications sectors in countries such as Brazil, China and India, All these countries have both first and third world economies co-exisitng. Prepaid services are essential for this third world economy to be sustainable.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter emphasizes the main findings in this study. Recommendations to companies as to the way forward regarding customer retention strategies in the local prepaid market will be made, and ideas for further research will be put forward.

6.2 Conclusions of the study

Other than pricing, there is alignment between what consumers and what organisations consider to be important retention factors.

- Keeping the same number is possible with mobile number portability. This allows for consumers to switch to another network. The cell phone number forms part of a person's identity, whether using their phone to run a business, or as a means for friends and family to contact them. However, MNP has not had a huge impact regarding acquisition or churn figures.

- The quality of the network is a prime factor for customer retention, and should be a core competence of any network operator.

- Loyalty and rewards programs are seen as switching barriers as well as reasons for remaining with the current network operator due to instant gratification, as well as financial gain from these rewards.

- Customer service is another driver of retention recognised by the study, and a bad customer experience can cause a customer to switch. Price sensitivity was not identified as a factor of retention with the consumers surveyed, which is contrary to what some of the organisations believe.

- Brand image and CSR enable customers to identify with a network. A brand represents certain values to customers, and these values motivate a person to become a customer of that company. A firm's involvement in CSR shows a firm is in business not only for financial gains, but has an interest in uplifting the community. Consumers realise the necessity of big business contributing to society, and therefore would support these businesses over those not involved in CSR. Indirectly the consumers feel they are then contributing to society.

6.3 Recommendations

These suggestions are aimed at marketing executives at local telecommunication companies, and are not necessarily limited to prepaid customer bases.

- Operators need to have loyalty programmes affiliated to other companies, such that the consumer can redeem points for other products such as electricity, groceries, small appliances, movie tickets, all depending on different segments targeted. Different segments would require affiliations with different companies within each of these bases, based on wants and needs. An example of such retailers would be PEP and Shoprite. These types of loyalty programmes would then allow all firms involved to gain more insight into these customers' demographics, as well as purchasing behaviour across sectors. The operators already have trade relationships with many grocery and clothing retailers, with these retailers selling handsets and airtime for these operators, and gaining commissions from these sales. Thus it would be a case of developing these loyalty programs, implementing and measuring them.

- Customers with a tenure over a certain period, with an average revenue within certain bands should be rewarded through free airtime, a free handsets or perhaps even a voucher for particular clothing or food retailers. This needs to be done via direct marketing, where a customer

feels that they are being treated as special for their loyalty to the firm. Giving away a handset can once again be treated as a customer upgrade – it does not matter that the customer did not pay for the handset.

- Rewards could be tier based, allowing a customer to get greater rewards, or bonus rewards when they reach certain thresholds. Not all customers will be able to reach thresholds, but those that can will weigh up spending more to receive more. As part of the CSR strategy, firms can donate to selected charities based on every time a loyalty subscriber loads a certain amount of airtime, or uses the network. This way, subscribers will feel they are also giving back to the community, and this is another motivating factor for the customer to join the loyalty program.

- Call centre staff and IVRs can and should service customers in the language of their choice e.g. English, Afrikaans, Zulu for better communication and understanding.

  When setting up voicemail, a consumer can be given an option to select a preferential language of communication. This way, the consumer can be patched straight to an IVR in that language when calling in, rather than being prompted for a language of choice. This information can once again be used towards customer segmentation and campaign management. For each cell phone number, the operator knows which is a person's home cell phone tower and work cell phone tower. Based on this language selection, an organisation can put in leaflets at stores in proportion to the language of their customer base from the cell phone tower information. Anaylsis of frequency and values of airtime loaded at these stores can ensure that there are sufficient reload vouchers, and delivery of airtime vouchers can even be planned based on these customer behaviours. Customers low on airtime can then be SMSed to purchase airtime at a location close to work or home. Similarly, customers can be sent an SMS to be RICAed at a location offering the service close to their home or workplace.

- The network operators need to ensure that the network quality is at least on par if not superior to that of your competitors, especially in highly populated areas where competitors have greater share of the market. If this is not the case, then firms need to either sign agreements with the competitors allowing subscribers to roam on their networks. It is most frustrating having calls dropped, and customers feel they are being robbed of their airtime. Reliability of service is definitely a cause of churn, and therefore this is something that operators need to concentrate on.

- Simple to understand pricing and freebie strategies for customers not to get disillusioned, or have the perception that the operator they are a consumer of is doing them in. Now that Telkom Mobile has entered the market, and Cell C has rebranded this is more pertinent than ever. A way of educating subscribers is by sending SMSes regarding their prepaid price plan. This type of communication is allowed once a month, and is not seen as selling to the customer. If the operator knows the preferred language of the customer, the SMS can be sent in this language.

- Operators need to enable transfer of airtime between prepaid subscribers through their cell phones. The reality is that a person could be short of cash or not have access to an airtime vendor, and friends and family can them help them along with airtime. However, if friends and family are on prepaid, this is not currently an option as currently this can only be done from postpaid to prepaid.

- Allow for postpaid users to transact whereby monthly, a transfer for a pre-determined value to one or more prepaid subscribers can take place (airtime debit order). This can be added as a value added service on their contract. This could be used as an option for people to transfer money domestic staff, or even children. Currently there is an option to transfer airtime by a postpaid subscriber to a prepaid subscriber, but the transaction needs to be a cognitive and interactive one. The process being proposed would be seamless, and not require the postpaid

subscriber to remember every month to do the transaction, just as a debit order on a bank account goes off seamlessly. When the subscriber wants to terminate such an ongoing transaction, a call to the call centre will allow for this.

- Currently, the data in systems is not always sufficient for analytics and interpretation that management require. Thus, when systems are developed for sales and support, all functions should be asked as to what would add value later (finance, marketing, sales), considering the reality that the more data that is stored, the higher the cost to the business resulting from this storage. Thus the question one needs to ask is whether the data will enrich the business more than what it costs to keep it. e.g. currently for postpaid, add SIM does not distinguish who will be using that contract, thus direct marketing is essentially a waste of time, and can frustrate the consumer if not pertinent to their needs. Similarly, if RICA data can be used for analysis of prepaid customers, and their families, this would give companies an advantage. e.g. knowing that a person has so many dependants, and the dates of birth of these dependants can allow for direct marketing regarding the children. Knowing what LSM a person falls under will also allow for more targeted direct marketing. Once a company has an individual's id number, other than credit information from companies such as Experian, companies can buy data from the Deeds office to ascertain whether a person owns one of more properties, as well as get Company information regarding whether a person is a director of a business. The network operator needs to decide whether the cost of acquiring this data outweighs the cost of keeping the highly profitable base. This would then require direct marketing from the operator to these high value individuals.

- Operators need to review commissioning contracts with trade customers – what is incentivising them to sell to the prepaid base? Are these terms perhaps not contributing to churn? An example of this is where the commission for an acquisition is larger than that for a SIM swap. Thus as

a reseller would one push SIM swaps or the selling of a new number in the market. A firm does not know whether this is real churn, and not just the same customer getting another number, but still staying with the network. Prepaid customers are not seen as customers that upgrade, and it is time that network operators investigate this option. Thus, every time a customer buys a new handset, they should be asked whether they are an existing customer, and if so whether the new cell phone is going to be used with a new number, or old number. Business models for commissions expect a handset to be activated in some cases with a particular SIM it was packaged with. This is not of any advantage to anyone. The handset activates on the network with that SIM in the store. The subscriber then throws that SIM card away. The chance of the trade customer in this scenario earning commission on that number can be minimal. That cell phone number is now on the network, and expires only after at least 90 days if not used. No one else can use it for that number of days, and the network makes a loss as it needs to pay for that number being active on their network, regardless of it being dormant.

- Operators need to lobby to government to make RICA data available to the operators as these customers are after all the end consumers. Operators can justify this by showing how RICA has decreased gross connections, and at the same time customers get frustrated when phoning in, and the operator cannot identify them but supposedly has their personal details. Companies have also invested money to get customers RICAed, but paying authorised RICA store commissions for every person being RICAed.

- Certain operators are approaching the competition's customers, trying to get them to churn for a better deal. Operators need to interrogate their data for such calls, and then with as short a lag period as possible, contact their profitable subscribers from the results of this data interrogation, and reward them to ensure they are not churning. These subscribers should be used to collect research data, as to would they

churn or not, and what reasons are these decisions based on. These types of calls are easy enough to pick up as staff should be requested to inform particular areas within the companies of such happenings within their families.

6.4 Suggestions for further research

- What type of total converged solutions could be supplied to the prepaid market?

  Telkom is both a fixed line and soon to be mobile line operator. Therefore it would be very interesting to see whether their offerings include an amalgamation of the two types of telephony, for voice, voicemail, SMS and data. This would also include internet TV, which is another way in which the more capacity of a network can be utilised.

- How is VOIP perceived in the prepaid mobile market, especially with generation Y?

  This would require investigating how many of the prepaid customers have 3G enabled phones that can support applications such as Skype or Fring.

  Once the market is educated, what is that likelihood that VOIP would then become a substitute for prepaid telephony, even though the prepaid handset could be used as a means to connect to Skype or Fring.

- What types of affiliated loyalty programs would different prepaid segments be interested in?

  One could investigate whether these affiliations are feasible, and how these affiliations with other companies would then boost your own company's performance and analytics giving a lot more insight into customer lifestyle, spending, and needs. Relationships already exist with retailers such as PEP, Edcon, Pick and Pay, Clicks, Woolworths, Shoprite. Thus its a matter of building on to these relationships. Another program that should be looked at is the MySchool program, as this

program is used at various retailers, and additional customer behaviour can be drawn from it.

REFERENCES

Abratt, R. and Russell, J. (1999) Relationship marketing in private banking in South Africa, *Bank Marketing,* 5, p. 19.

Ahmad, R. and Buttle, F. (2001) Customer retention: a potentially potent marketing management strategy, *Journal of Strategic Marketing,* 9(1), pp. 29-45.

aikresearch.wordpress.com (2009, 23 January 2009) *South African Mobile Penetration Level Breaks 100% Mark,* (last accessed 09 October 2009, 2009), from http://aikresearch.wordpress.com/2009/01/23/south-africa-mobile-penetration-level-breaks-the-100-mark/.

Business Monitor International (2009) *Telecommunications Report Q4 2009 South Africa*, No. 1748-4820.

Buzzell, R., Gale, B. and Sultan, R. (1975) Market share-a key to profitability, *Harvard Business Review,* 53(1), pp. 97-106.

Chen, I. and Popovich, K. (2003) Understanding customer relationship management (CRM), *Business Process Management Journal,* 9(5), pp. 672–688.

Comrey, A. and Lee, H. (1992) *A first course in factor analysis*, Lawrence Erlbaum.

Creswell, J. (2003) *Research design: Qualitative, quantitative, and mixed methods approaches,* 2nd ed., Sage Pubns.

datamonitor.com (2010) UK retail loyalty schemes: an increasingly powerful weapon, *MarketWatch : Financial Services* 9(3), pp. 12-13.

DeCoster, J. (1998, 01 August 1998) *Overview of factor analysis,* (last accessed 15 July 2010, 2010), from http://www.stat-help.com/notes.html.

Donner, J. and Gitau, S. (2009) New paths: exploring mobile-centric internet use in South Africa, *Pre-Conference on Mobile Communication at the Annual Meeting of the International Communication Association*, Citeseer

Dowling, G. and Uncles, M. (1997) Do customer loyalty programs really work?, *Sloan management review,* 38, pp. 71-82.

Doyle, P. (2001) *Value-based marketing: marketing strategies for corporate growth and shareholder value*, John Wiley & Sons.

Ernst and Young (2009) *The 2009 Ernst & Young business risk report*.

Ferguson, R. and Brohaugh, B. (2008) Telecom's search for the ultimate customer loyalty platform, *Journal of Consumer Marketing,* 25(5), pp. 314-318.

Galloway, K. (1997, 25 August 1997) *Piloting Your Questionnaire,* (last accessed 03 June 2010, 2010), from http://www.tardis.ed.ac.uk/~kate/qmcweb/q11.htm.

Gupta, S. and Lehmann, D. (2003) Customers as assets, *Journal of Interactive Marketing,* 17(1), pp. 9-24.

Haenlein, M., Kaplan, A. and Schoder, D. (2006) Valuing the real option of abandoning unprofitable customers when calculating customer lifetime value, *Journal of Marketing,* 70(3), pp. 5-20.

hellkom.co.za *Rica Registration,* (last accessed 23 April 2010, 2010), from http://www.hellkom.co.za/pages/rica-sim-card-registration.php.

Hommer, M. and Krause, A. (2004) Profiting from prepaid phone customers, *McKinsey Quarterly*(2), pp. 12-14.

itu.int (2005) *International Telecommunication Union,* (last accessed 08 October 2009, 2009), from www.itu.int/osg/spu/imt-2000/SPU%20Mobile%20Glossary%202003.pdf

Jones, T. and Sasser, W. (1996) Why satisfied customers defect, *Journal of Management in Engineering,* 12(6), pp. 88-99.

Kalof, L., Dan, A. and Dietz, T. (2008) *Essentials of Social Research*, Open University Press.

Keaveney, S. (1995) Customer switching behavior in service industries: an exploratory study, *The Journal of Marketing,* 59(2), pp. 71-82.

Keller, G. (2008) *Managerial Statistics,* eight ed., South-Western, Division of Thomson Learning.

Kim, M., Park, M. and Jeong, D. (2004) The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services, *Telecommunications Policy,* 28(2), pp. 145-160.

Knox, S. (1998) Loyalty-based segmentation and the customer development process, *European Management Journal,* 16(6), pp. 729-737.

Leamer, E. (2009) *Macroeconomic Patterns and Stories: A Guide for MBAs*, Springer Verlag.

Leedy, P. and Ormrod, J. (2005) *Practical research: Planning and design*, Pearson/Merrill/Prentice Hall, Upper Saddle River, NJ.

Malhotra, N. (1996) 'Chapter 19: Factor Analysis ', In *Marketing Research: An Applied Orientation,* 2nd ed., Prentice Hall, Upper Saddle River, pp. 643-669.

McDaniel, C. and Gates, R. (2007) *Marketing Research,* 7th ed., John Wiley and Sons, Inc.

Minges, M. (1999) Mobile cellular communications in the Southern African region, *Telecommunications Policy,* 23(7-8), pp. 585-593.

Monama, M. (2010, 07 February 2010) *Rica gobbles cellular profits,* (last accessed 24 April 2010, 2010), from http://www.fin24.com/articles/default/display_article.aspx?ArticleId=1518-24_2570893.

MTN (2009) *MTN Group Limited : Integrated Business Report for the year ended 31 December 2008: Book 2 - MTN Financial Statements*.

mtn.co.za (2008) *MTN Zone,* (last accessed 27 April 2010, 2010), from http://www.mtn.co.za/FindaPlan/Pages/priceplan_new001.aspx?pkg=MTN%20Zone.

mtn.co.za (2010) *MTN Loyalty Programme,* (last accessed 30 July 2010, 2010), from http://www.mtn.co.za/Support/Legal/TermsAndConditions/Pages/MTNLoyaltyProgramme.aspx.

Pauty , G. (2008) Why retention programmes fail ... when they do, *Journal of Telecommunications Management,* 1(3), pp. 255-263.

Payne, A. and Frow, P. (1999) Developing a segmented service strategy: improving measurement in relationship marketing, *Journal of Marketing Management,* 15(8), pp. 797-818.

Payne, A. and Frow, P. (2005) A strategic framework for customer relationship management, *Journal of Marketing,* 69(4), pp. 167-176.

Reichheld, F. and Teal, T. (1996) *The loyalty effect*, Harvard Business School Press Boston, MA.

Reichheld, F. F. and Sasser Jr, W. E. (1990) Zero defections: Quality comes to services, *Harvard Business Review,* 68, pp. 105-111.

Reinartz , W. (2005) Balancing acquisition and retention resources to maximize customer profitability, *Journal of Marketing,* 69(1), p. 63.

Reinartz, W., Krafft, M. and Hoyer, W. (2004) The customer relationship management process: its measurement and impact on performance, *Journal of Marketing Research*, pp. 293-305.

Rouvinen, P. (2006) Diffusion of digital mobile telephony: Are developing countries different?, *Telecommunications Policy,* 30(1), pp. 46-63.

Rust, R., Zahorik, A. and Keiningham, T. (1995) Return on quality (ROQ): making service quality financially accountable, *The Journal of Marketing,* 59(2), pp. 58-70.

safe-sat3.co.za *sat-3/wasc/safe,* (last accessed 07 October 2009, 2009), from http://www.safe-sat3.co.za/.

seacom.mu (2009) *Seacom Overview,* (last accessed 08 October 2009, 2009), from http://www.seacom.mu/overview/overview.html.

southafrica.info (2008, October 2008) *South Africa's telecommunications,* (last accessed 09 October 2009, 2009), from http://www.southafrica.info/business/economy/infrastructure/telecoms.htm.

Stacey, A. (2005) The reliability and validity of the item means and standard deviations of ordinal level response data, *Management Dynamics: Journal of the Southern African Institute for Management Scientists,* 14(3), pp. 2-25.

Stacey, A. (2006) Estimating the means and standard deviations of rank ordered survey items, *Management Dynamics: Journal of the Southern African Institute for Management Scientists,* 15(3), pp. 26-35.

statssa.gov.za (2008, 4 March 2008) *Income and expenditure of households 2005/2006: Statistical release P0100,* (last accessed 20 April 2010, 2010), from http://www.statssa.gov.za/PublicationsHTML/P01002005/html/P01002005.html.

statssa.gov.za (2009a) *Latest Key Indicators,* (last accessed 20 April 2010, 2010), from http://www.statssa.gov.za/keyindicators/keyindicators.asp.

statssa.gov.za (2009b, 27 July 2009) *Mid-year population estimates: 2009 Statistical Release P0302,* (last accessed 20 April 2010, 2010), from http://www.statssa.gov.za/publications/P0302/P03022009.pdf.

statssa.gov.za (2010, 23 February 2010) *Gross Domestic Product 4th quarter 2009: P0441,* (last accessed 20 May 2010, 2010), from http://www.statssa.gov.za/publications/P0441/P04414thQuarter2009.pdf.

Steffes, M., Murthi, B. and Rao, R. (2008) Acquisition, affinity and rewards: Do they stay or do they go, *Journal of Financial Services Marketing,* 13(3), pp. 221-233.

Terblanche, N. and Boshoff, C. (2004) The in-store shopping experience: a comparative study of supermarket and clothing store customers, *South African Journal of Business Management,* 35(4), pp. 1-10.

Terblanche, N. and Boshoff, C. (2010) Quality, value, satisfaction and loyalty amongst race groups: a study of customers in the South African fast food industry, *South African Journal of Business Management,* 41(1), pp. 1-9.

Urminsky, O. (2010a) Commonly Used Research Techniques, *Lecture Notes: Marketing Research* Booth School of Business, University of Chicago

Urminsky, O. (2010b) Marketing Research Lecture Notes, *Lecture Notes: Marketing Research* Booth School of Business, University of Chicago

virginmobile.co.za (2010) *Anytime Airtime* (last accessed 30 July 2010, 2010), from http://www.virginmobile.co.za/airtime.html.

vodacom.co.za (2010) *Vodacom Talking Points: Introducing Loyalty Awards for Vodacom Prepaid Customers,* (last accessed 30 July 2010, 2010), from http://old.vodacom.co.za/pkgcr.do?action=getpkgmenus&pkgTypeId=2&pageId=8.

Willig, C. (2008) *Introducing qualitative research in psychology : adventures in theory and method,* 2nd ed., McGraw Hill, Maidenhead.

wizzit.co.za *WIZZIT,* (last accessed 24 April 2010, 2010), from www.wizzit.co.za.

Wong, K. (2009) Potential moderators of the link between rate plan suitability and customer tenure: A case in the Canadian mobile telecommunications industry, *Journal of Database Marketing & Customer Strategy Management,* 16(2), pp. 64-75.

Xevelonakis, E. (2005) Developing retention strategies based on customer profitability in telecommunications: An empirical study, *The Journal of Database Marketing & Customer Strategy Management,* 12(3), pp. 226-242.

APPENDIX A – CONSUMER SURVEY QUESTIONNAIRE

Introduction

This questionnaire is to be used for an MBA research project. It will take about 5 minutes of your time.

To complete this survey, you must be at least 18 years old, and a prepaid cell phone customer. Please answer truthfully.

Section A: Demographics

Please let us know something about yourself:

1. Age :☐ 18-30 ☐ 31-45 ☐46-60 ☐61 and over

2. Gender :☐ Female ☐ Male

3. Network :☐ Cell C ☐ MTN ☐ Virgin Mobile ☐ Vodacom

Section B: Behaviour

Please tell us about how you use your cell phone.

4. When did you last change networks?

☐ within the past month ☐ within the past 6 months ☐ within the past 1 yr

☐ within the past 1 to 2 yrs ☐ more than 2 years ago ☐ Never

5. Indicate which network you WERE with before you changed network:

☐ Cell C ☐ MTN ☐ Virgin Mobile ☐ Vodacom ☐ No change

6. You use your cell phone to (please select all that apply to you) :

☐ make and receive calls ☐ internet (facebook, MXit, google) / GPRS

☐ SMS /MMS ☐ banking (internet, cellphone, e-wallet, Wizzit)

☐ buy / transfer airtime

7. You buy airtime (please select ONLY ONE) :

☐ at least once a week ☐ at least once a month

☐ at least once every 3 months

8. You are on prepaid (you can select more than one):

☐ to control spending ☐ unsuccessful in getting a contract

☐ cannot afford a contract ☐ don't want to be tied down for 24 months

---

Section C: What makes you stay with your network

Please select from strongly disagree (1) to strongly agree (5).

If you cannot answer a question, please leave it blank.	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1. Your network is reliable.	1	2	3	4	5
2. The pricing of your network is easy to understand.	1	2	3	4	5
3. If another network offers better prices you will move.	1	2	3	4	5
4. Keeping the same cell phone number is important to you.	1	2	3	4	5
5. The image of your network is important.	1	2	3	4	5
6. The network's involvement in projects uplifting the community is important.	1	2	3	4	5
7. Being able to buy small values of airtime for topup, such as R2, are important to you.	1	2	3	4	5
8. The rewards (free minutes, free SMSs, discounted calls) offered to you are important.	1	2	3	4	5
9. The rewards offered make it worth your while to stay with your network.	1	2	3	4	5
10. The network makes you feel like an important customer.	1	2	3	4	5

11. The network's customer care centre is always available when you need help.	1	2	3	4	5
12. You are happy with the customer service you are getting.	1	2	3	4	5
13. You will stay with this network for at least another 6 months.	1	2	3	4	5
14. Your cell phone makes a statement about who you are.	1	2	3	4	5

Thank you for your time. Do you have any comments about your cell phone network you would like to share?

APPENDIX B - MANAGEMENT INTERVIEW QUESTIONNAIRE

Introduction

This questionnaire is to be used for an MBA research project, to determine criteria that affect customer retention on prepaid customers in your organisation.

Thank you for your time in participating in this interview. It should take at most an hour of your time. Please try and answer all questions as accurately as possible. Your responses will be treated with utmost confidentiality, and will be emailed to you for verification.

Names of organisations in research results will not be used.

Organisation : _____

Title : _____

1. What is your role in customer retention within the organisation?
2. Who drives the customer retention strategies, and are there different strategies for postpaid and prepaid, and therefore different teams to action these strategies?
3. What is/are the staff complement and competencies of this/these teams?
4. What is your understanding of CRM?
5. Are some of the members in this team involved in customer relationship management (CRM)?
6. How does the organisation identify churn for prepaid base?
7. How do you then keep the customers from churning?

8. How do you deal with your less profitable customers? Do your prepaid customers have negative profitability at all?
9. Do your loyalty programs increase the switching barrier, and if so, to what extent will a customer feel trapped?
10. How has regulation affected customer churn?

Please would you refer me to another person in your organisation who is crucial in the customer retention team, however if from another function area.

Many thanks

APPENDIX C – CONSUMER SURVEY CODING SHEET

Coding of Responses

Question	Question Nur	Type	Options 1	2	3	4	5	6
Age	A1	Single Selection	18-30	31-45	46-60	61 and over		
Gender	A2	Single Selection	Male	Female				
Network	A3	Single Selection	Cell C	MTN	Virgin Mobile	Vodacom		
When did you last change networks	B4	Single Selection	within the past mth	within the past 6 mths	within the past 1 yr	within the past 2 yrs	more than 2 yrs	Never
Indicate which network you were with	B5	Single Selection	Cell C	MTN	Virgin Mobile	Vodacom	No	
Cellphone used to	B6	Multiple Selection	make and receive calls	use the internet	SMS and MMS	banking	buy / transfer	
Frequency of airtime purchase	B7	Single Selection	at least once a week	at least once a month	at least once every 3 months			
Reason for being prepaid	B8	Multiple Selection	to control spending	was unsuccessful in getting a contract	cannot afford a contract	don't want to be tied down for 24 months		
Your network is reliable.	C1	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The pricing of your network is easy to understand.	C2	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
If another network offers better prices you will move.	C3	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
Keeping the same cell phone number is important to you.	C4	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The image of the network provider is important.	C5	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The network's involvement in projects uplifting the community is important	C6	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
Being able to buy low values of airtime for topup, such as R2 voucher, are important to you.	C7	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The rewards (free minutes, free SMSs, discounted calls) offered are important	C8	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The rewards offered make it worth your while to stay with your network.	C9	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The network's customer care centre is always available when you need help	C10	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The network makes you feel like an important customer.	C11	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
You are happy with the customer service you are getting.	C12	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
You will stay with this network for at least another 6 months.	C13	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
Your cellphone makes a statement about who you are.	C14	Likert Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	

APPENDIX D – CORRELATION MATRIX

	A1	A2	A3	B4	B5	B6_1	B6_2	B6_3	B6_4	B6_5	B7	B8_1	B8_2	B8_3	B8_4	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
A2	0.024																											
A3	-0.065	-0.051																										
B4	0.075	0.143	0.009																									
B5	0.103	0.066	-0.012	0.659																								
B6_1	0.021	-0.019	0.010	0.074	-0.007																							
B6_2	-0.469	-0.060	0.116	-0.177	-0.127	-0.091																						
B6_3	-0.039	0.046	0.054	-0.111	-0.110	0.346	0.075																					
B6_4	-0.164	-0.114	-0.044	0.012	0.052	0.104	0.265	0.093																				
B6_5	-0.132	-0.083	0.027	-0.066	-0.101	0.153	0.150	0.235	0.277																			
B7	0.351	0.102	0.131	-0.024	0.039	-0.005	-0.208	-0.115	-0.004	-0.163																		
B8_1	-0.040	-0.078	0.008	-0.085	-0.133	0.261	0.027	0.108	0.137	0.189	0.002																	
B8_2	0.019	0.061	0.004	0.017	0.047	-0.336	0.159	-0.138	-0.084	-0.108	-0.066	-0.350																
B8_3	-0.116	0.047	-0.005	0.041	0.046	-0.044	0.000	-0.079	0.025	-0.129	-0.041	-0.282	-0.091															
B8_4	0.126	-0.076	0.049	-0.031	0.022	0.057	0.000	0.104	0.082	0.000	0.041	-0.334	-0.070	-0.036														
C1	0.146	-0.026	0.039	0.038	0.037	0.128	-0.197	0.081	-0.054	0.000	0.028	0.079	-0.055	0.067	0.015													
C2	0.014	0.051	-0.106	0.093	-0.001	-0.041	0.079	-0.033	0.032	0.108	-0.091	-0.003	-0.073	0.026	-0.106	0.274												
C3	-0.013	0.016	-0.068	-0.077	-0.102	-0.093	-0.029	0.001	-0.052	-0.102	-0.018	0.131	-0.121	-0.016	-0.005	-0.249	-0.170											
C4	0.051	0.110	-0.060	0.198	0.085	0.334	-0.066	0.114	-0.016	0.025	-0.187	0.050	0.023	0.026	-0.013	0.167	0.105	-0.069										
C5	-0.159	0.019	-0.115	0.233	0.175	0.086	0.031	0.086	0.211	0.137	-0.286	0.039	0.040	0.068	-0.106	0.166	0.250	-0.152	0.301									
C6	-0.098	0.096	-0.054	0.085	0.047	0.037	0.057	0.103	0.112	0.087	-0.267	0.004	0.015	0.029	-0.032	0.116	0.216	-0.126	0.274	0.566								
C7	-0.129	0.064	-0.044	-0.061	-0.051	0.056	0.065	-0.088	-0.018	-0.132	-0.195	-0.066	-0.013	0.100	0.075	-0.028	0.049	-0.081	0.043	0.291	0.305							
C8	-0.157	0.029	-0.245	-0.070	-0.024	0.135	0.127	-0.082	0.100	0.015	-0.273	-0.006	0.009	0.015	0.071	0.115	0.273	0.070	0.214	0.253	0.135	0.276						
C9	-0.205	-0.052	-0.168	0.042	0.126	0.111	0.136	-0.081	0.096	0.065	-0.291	-0.016	-0.071	0.069	0.019	0.191	0.315	-0.063	0.160	0.354	0.158	0.267	0.728					
C10	-0.032	0.086	-0.163	0.163	0.215	-0.032	-0.061	-0.092	0.096	0.011	-0.206	0.008	-0.025	0.139	-0.146	0.288	0.441	-0.186	0.226	0.564	0.426	0.273	0.414	0.492				
C11	0.039	0.190	0.025	0.145	0.192	-0.046	-0.057	-0.044	-0.049	-0.068	-0.161	-0.028	0.043	0.044	-0.044	0.097	0.242	-0.140	0.131	0.241	0.176	0.212	0.153	0.198	0.512			
C12	0.043	0.097	0.018	0.064	0.115	-0.007	-0.054	-0.071	0.049	-0.009	-0.109	-0.035	0.058	0.053	-0.029	0.266	0.331	-0.290	0.043	0.182	0.133	0.173	0.226	0.257	0.513	0.686		
C13	0.022	-0.039	-0.035	0.123	0.116	0.190	-0.080	0.003	0.093	0.030	-0.140	-0.046	0.051	0.087	0.014	0.383	0.302	-0.340	0.335	0.366	0.164	0.109	0.342	0.384	0.481	0.377	0.490	
C14	-0.213	0.055	0.047	-0.052	0.069	0.050	0.146	0.034	0.017	-0.051	-0.180	0.005	-0.102	0.039	-0.021	0.045	0.106	0.012	0.117	0.309	0.307	0.225	0.312	0.303	0.387	0.176	0.144	0.188

APPENDIX E – PRINCIPAL COMPONENT FACTOR ANALYSIS

Principal Component Factor Analysis of the Correlation Matrix

Unrotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
C1	0.402	-0.400	0.038	-0.475	0.192	-0.084	0.230
C2	0.534	-0.196	-0.124	-0.160	0.213	-0.547	-0.321
C3	-0.308	0.512	-0.298	0.075	-0.446	-0.376	-0.082
C4	0.379	0.109	0.306	-0.459	-0.573	0.255	-0.166
C5	0.658	0.269	0.422	-0.052	0.036	-0.080	-0.078
C6	0.515	0.306	0.609	0.058	0.079	-0.189	-0.088
C7	0.401	0.361	0.082	0.415	0.325	0.411	-0.226
C8	0.589	0.391	-0.541	-0.191	0.011	0.128	-0.083
C9	0.657	0.297	-0.475	-0.194	0.151	0.105	-0.054
C10	0.838	0.007	0.023	0.106	-0.020	-0.194	0.026
C11	0.584	-0.330	-0.061	0.529	-0.360	-0.019	-0.060
C12	0.632	-0.495	-0.176	0.379	-0.117	0.008	0.018
C13	0.691	-0.314	-0.051	-0.222	-0.140	0.254	0.101
C14	0.462	0.417	0.024	0.146	-0.028	-0.116	0.692
Variance	4.4570	1.6356	1.3113	1.2257	0.9102	0.8674	0.7584
% Var	0.318	0.117	0.094	0.088	0.065	0.062	0.054

Variable	Factor8	Factor9	Factor10	Factor11	Factor12	Factor13	Factor14
C1	0.579	0.028	0.070	-0.080	0.060	0.019	0.048
C2	-0.179	0.344	-0.182	0.004	0.068	0.014	0.002
C3	0.390	-0.078	-0.161	0.112	-0.006	0.003	-0.073
C4	-0.034	0.298	0.055	-0.137	-0.005	-0.051	-0.071
C5	-0.047	-0.399	-0.201	-0.156	0.216	-0.157	0.043
C6	0.051	-0.001	0.303	0.335	-0.018	0.098	-0.014
C7	0.312	0.255	-0.199	-0.033	-0.028	0.003	-0.026
C8	-0.035	0.012	0.164	0.118	-0.003	-0.157	0.285
C9	-0.082	-0.157	0.156	-0.095	0.105	0.196	-0.256
C10	-0.003	-0.136	0.008	-0.209	-0.430	-0.010	-0.001
C11	0.048	-0.002	0.081	-0.129	0.150	0.234	0.171
C12	0.058	0.012	0.123	0.132	0.059	-0.301	-0.193
C13	-0.074	-0.128	-0.351	0.335	-0.068	0.124	0.004
C14	-0.132	0.263	-0.076	-0.026	0.069	-0.009	-0.013
Variance	4.4570	1.6356	1.3113	1.2257	0.9102	0.8674	0.7584
% Var	0.318	0.117	0.094	0.088	0.065	0.062	0.054
Variance	0.6589	0.5677	0.4404	0.3888	0.2877	0.2622	0.2288
% Var	0.047	0.041	0.031	0.028	0.021	0.019	0.016

Rotated Factor Loadings and Communalities
Varimax Rotation

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
C1	0.018	-0.029	0.113	-0.005	-0.965	0.110	0.068
C2	0.090	-0.102	0.954	-0.023	-0.117	0.068	0.026
C3	-0.044	-0.055	-0.064	-0.020	0.108	-0.973	-0.019
C4	0.043	-0.079	0.024	-0.034	-0.066	0.019	0.971
C5	0.079	-0.071	0.090	-0.125	-0.054	0.059	0.134
C6	0.052	-0.021	0.087	-0.135	-0.038	0.051	0.127
C7	0.084	-0.107	-0.004	-0.086	0.031	0.036	-0.001
C8	0.033	-0.895	0.114	-0.136	-0.031	-0.072	0.098
C9	0.059	-0.404	0.132	-0.125	-0.077	0.019	0.046
C10	0.266	-0.165	0.212	-0.188	-0.130	0.068	0.078

C11	0.928	-0.027	0.087	-0.063	-0.010	0.040	0.052
C12	0.419	-0.083	0.142	-0.043	-0.122	0.145	-0.025
C13	0.163	-0.138	0.109	-0.067	-0.183	0.175	0.169
C14	0.059	-0.116	0.023	-0.962	-0.005	-0.020	0.035
Variance	1.1701	1.0684	1.0585	1.0488	1.0394	1.0354	1.0339
% Var	0.084	0.076	0.076	0.075	0.074	0.074	0.074

Variable	Factor8	Factor9	Factor10	Factor11	Factor12	Factor13	Factor14
C1	-0.035	0.031	0.045	0.137	0.055	0.081	0.069
C2	-0.082	0.005	0.076	0.086	0.099	0.099	0.113
C3	0.045	0.035	-0.046	-0.128	-0.011	-0.093	-0.036
C4	-0.113	0.001	0.105	0.124	0.035	-0.013	0.042
C5	-0.279	-0.124	0.889	0.130	0.119	0.022	0.163
C6	-0.927	-0.140	0.241	0.020	0.020	0.024	0.108
C7	-0.127	-0.966	0.100	0.016	0.084	0.046	0.057
C8	-0.024	-0.127	0.063	0.122	0.317	0.066	0.100
C9	-0.027	-0.114	0.134	0.132	0.849	0.061	0.135
C10	-0.190	-0.104	0.259	0.166	0.184	0.184	0.765
C11	-0.051	-0.090	0.072	0.127	0.043	0.261	0.141
C12	-0.029	-0.066	0.024	0.199	0.065	0.830	0.143
C13	-0.026	-0.019	0.137	0.875	0.126	0.174	0.115
C14	-0.124	-0.087	0.102	0.052	0.092	0.031	0.098
Variance	1.0336	1.0309	1.0020	0.9594	0.9215	0.8589	0.7393
% Var	0.074	0.074	0.072	0.069	0.066	0.061	0.053

Factor Score Coefficients

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
C1	0.072	-0.024	-0.091	-0.017	-1.104	-0.080	-0.048
C2	-0.035	0.088	1.128	-0.027	0.087	-0.042	0.012
C3	-0.030	0.149	0.045	0.036	-0.082	-1.091	-0.001
C4	-0.059	0.108	0.012	-0.003	0.050	0.001	1.093
C5	-0.027	-0.034	-0.028	0.051	0.004	-0.021	-0.075
C6	-0.000	-0.026	-0.068	0.106	0.017	-0.034	-0.108
C7	-0.079	0.127	0.052	0.048	-0.050	-0.044	0.036
C8	0.060	-1.415	-0.074	0.087	-0.017	0.114	-0.082
C9	0.001	0.467	-0.067	0.054	0.038	-0.015	0.014
C10	-0.153	0.065	-0.104	0.091	0.058	-0.010	-0.005
C11	1.314	-0.065	-0.032	0.024	-0.062	0.024	-0.048
C12	-0.368	0.062	-0.071	-0.000	0.071	-0.093	0.074
C13	-0.083	0.109	-0.028	0.024	0.125	-0.134	-0.135
C14	-0.029	0.108	0.027	-1.105	-0.016	0.035	0.003

Variable	Factor8	Factor9	Factor10	Factor11	Factor12	Factor13	Factor14
C1	0.020	-0.050	-0.003	-0.168	-0.055	-0.114	-0.108
C2	0.073	-0.051	-0.031	-0.034	-0.083	-0.099	-0.198
C3	-0.039	-0.044	0.026	0.186	0.036	0.148	0.013
C4	0.124	-0.037	-0.096	-0.186	0.033	0.126	-0.003
C5	0.274	0.072	1.334	-0.132	-0.128	0.090	-0.303
C6	-1.234	0.119	-0.322	0.071	0.064	-0.000	-0.155
C7	0.134	-1.099	-0.089	0.037	-0.069	-0.031	-0.025
C8	-0.026	0.101	0.030	-0.116	-0.605	-0.080	-0.101
C9	-0.052	0.057	-0.111	-0.082	1.484	0.007	-0.170
C10	0.091	0.018	-0.185	-0.063	-0.123	-0.123	1.597
C11	-0.001	0.069	-0.024	-0.097	-0.001	-0.600	-0.280
C12	0.002	0.027	0.068	-0.182	0.010	1.510	-0.173
C13	-0.061	-0.027	-0.129	1.341	-0.079	-0.205	-0.084
C14	0.117	0.047	-0.062	-0.031	-0.065	0.007	-0.174

APPENDIX F – 4 FACTOR ANALYSIS RESULTS

Maximum Likelihood Factor Analysis of the Correlation Matrix

Unrotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
C1	0.309	0.072	-0.061	-0.453	0.309
C3	-0.213	-0.262	0.109	0.441	0.321
C5	0.582	-0.021	-0.630	0.070	0.742
C6	0.389	0.045	-0.525	0.123	0.444
C8	0.659	-0.578	0.228	0.056	0.824
C9	0.685	-0.446	0.091	-0.040	0.678
C10	0.787	0.102	-0.180	0.022	0.663
C11	0.622	0.543	0.206	0.239	0.781
C12	0.650	0.461	0.274	-0.102	0.721
C13	0.633	0.110	-0.003	-0.368	0.549
Variance	3.3650	1.1390	0.8993	0.6282	6.0315
% Var	0.336	0.114	0.090	0.063	0.603

Rotated Factor Loadings and Communalities
Varimax Rotation

Variable	Factor1	Factor2	Factor3	Factor4	Communality
C1	0.121	0.061	-0.079	-0.534	0.309
C3	0.090	-0.117	0.086	0.540	0.321
C5	0.191	0.087	-0.817	-0.173	0.742
C6	0.054	0.079	-0.656	-0.069	0.444
C8	0.897	0.098	-0.093	-0.002	0.824
C9	0.777	0.116	-0.202	-0.140	0.678
C10	0.366	0.447	-0.510	-0.262	0.663
C11	0.063	0.862	-0.169	-0.069	0.781
C12	0.158	0.749	-0.036	-0.367	0.721
C13	0.315	0.318	-0.193	-0.558	0.549
Variance	1.7341	1.6592	1.4880	1.1502	6.0315
% Var	0.173	0.166	0.149	0.115	0.603

Factor Score Coefficients

Variable	Factor1	Factor2	Factor3	Factor4
C1	0.001	-0.065	0.037	-0.285
C3	0.046	0.045	-0.023	0.292
C5	-0.064	-0.117	-0.641	-0.003
C6	-0.047	-0.025	-0.256	0.046
C8	0.689	-0.035	0.134	0.195
C9	0.299	-0.052	0.008	-0.042
C10	0.037	0.093	-0.206	-0.055
C11	-0.093	0.649	-0.023	0.308
C12	-0.016	0.342	0.168	-0.244
C13	0.036	-0.020	0.039	-0.377

APPENDIX G – DISTRIBUTION FITTING OF ORDINAL DATA

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
Observed														
Strongly disagree	6	5	36	2	8	6	25	4	4	7	3	4	1	21
Disagree	17	17	44	1	15	13	35	7	13	23	16	14	2	24
Neither	16	11	10	4	27	13	21	13	20	31	28	21	7	16
Agree	77	99	32	19	56	66	33	44	50	57	56	66	55	48
Strongly agree	44	28	38	134	54	62	46	92	73	42	57	55	95	51
	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Solver parameters														
μ	-0.01869	-0.08348	-0.3796	1.049166	0.00468	0.10284	-0.22036	0.36322	0.171247	-0.09304	0.037013	0.051378	0.353496	-0.09126
σ	0.467796	0.388028	0.774408	0.829667	0.547708	0.533028	0.746515	0.630642	0.573955	0.500327	0.499394	0.483632	0.453409	0.728307
Expected														
Strongly disagree	4.376275	2.529422	38.98901	1.421723	7.381019	4.448549	28.03393	3.382768	4.628358	7.95316	4.478263	3.612505	0.404979	20.53124
Disagree	18.39815	18.39127	29.56882	3.275526	19.72715	15.01045	27.08266	9.557748	13.69263	23.59758	16.75395	15.4367	3.936654	24.0164
Neither	22.74647	27.3458	19.21159	3.926098	20.63168	17.87941	19.35449	11.37413	15.80359	24.53524	20.2812	19.87822	8.378456	18.66216
Agree	68.71539	80.02587	38.67421	18.00029	59.46131	59.55912	42.93064	43.85253	54.12514	64.03704	64.39611	66.03797	52.23723	45.29675
Strongly agree	45.76372	31.70764	33.55637	133.3764	52.79885	63.10247	42.59827	91.83282	71.75027	39.87698	54.09047	55.03461	95.04269	51.49345
χ2 contributions														
Strongly disagree	0.602449	2.413102	0.229146	0.23521	0.051908	0.541076	0.328342	0.112622	0.085308	0.114233	0.487971	0.041565	0.874242	0.010703
Disagree	0.106251	0.105247	7.043196	1.58082	1.132749	0.269274	2.314554	0.684479	0.035036	0.015133	0.033929	0.133714	0.952745	1.12E-05
Neither	2.000962	9.770608	4.41678	0.001391	1.965689	1.331621	0.1399	0.232408	1.114293	1.703391	2.93769	0.063305	0.226789	0.379758
Agree	0.998827	4.498765	1.151804	0.055523	0.201486	0.696533	2.29714	0.000496	0.314397	0.773301	1.094704	2.18E-05	0.14612	0.161326
Strongly agree	0.067973	0.433542	0.588437	0.002916	0.027326	0.019261	0.271648	0.000304	0.021767	0.113028	0.156503	2.18E-05	1.92E-05	0.004729
	60.9175213	3.776463	17.22126	13.42936	1.87586	3.379159	2.857765	5.351584	1.03031	1.570802	2.719086	4.710797	0.238627	2.199915	0.556527
Solver thresholds						**Standardised thresholds**								
τ_1	-0.91743	τ_1				-1.47674								
τ_2	-0.51917	τ_2				-0.8924								
τ_3	-0.2851	τ_3				-0.54896								
τ_4	0.245635	τ_4				0.229757								
Standardised parameters														
μ	**-0.1581**	**-0.2531**	**-0.6876**	**1.40874**	**-0.1238**	**0.02024**	**-0.454**	**0.40228**	**0.12061**	**-0.2672**	**-0.0763**	**-0.0553**	**0.38802**	**-0.2646**
σ	**0.68637**	**0.56933**	**1.13625**	**1.21733**	**0.80362**	**0.78208**	**1.09532**	**0.92531**	**0.84213**	**0.7341**	**0.73273**	**0.70961**	**0.66526**	**1.06861**
t-value	**-2.91**	**-5.62**	**-7.65**	**14.64**	**-1.95**	**0.33**	**-5.24**	**5.50**	**1.81**	**-4.60**	**-1.32**	**-0.99**	**7.38**	**-3.13**
p-value	**0.0041**	**0.0000**	**0.0000**	**0.0000**	**0.0531**	**0.7438**	**0.0000**	**0.0000**	**0.0719**	**0.0000**	**0.1895**	**0.3261**	**0.0000**	**0.0021**
α-value	5%													
Chi-test p-value	0.1858													