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The reinforcing effects between flying as a core service and partners within a local loyalty programme

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

Johannesburg, 2015

ABSTRACT

This research replicated a dynamic model of cross-buying across loyalty programme partnerships and tested the model using data from a South African airline. The research sought to identify reinforcing mechanisms active between partners.

DECLARATION

I, Thabo Mosala, 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.

Thabo Mosala

Signed at …….

On the …….. day of …… 20…..

DEDICATION

Thabo and Palesa

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I would like to express gratitude to Neale Penman for his assistance on this research.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this research was to evaluate the existence of reinforcing effects in a multi-vendor loyalty programme. The research focused on South African Airways' loyalty programme, Voyager.

1.2 Context of the study

One of the key objectives in marketing is customer retention. Apart from merely offering a superior customer value proposition, over the years companies have developed loyalty programmes (LPs) with the main objective being retention as well as achieving a bigger share of wallet or increased customer spending.

A business model with customers making one-off purchases creates a major challenge in developing repeat customers. Companies with this type of model, such as retailers and other service-based companies, tend to develop LPs as a way of stimulating repeat purchases.

Customer loyalty is all about attracting customers and getting them to buy often or increase their purchase quantities. Over the years, the value created by LPs has been questioned. The questions focus on whether the LPs create value beyond the organisation's value proposition and if they really encourage repeat purchase behaviour.

Dowling and Uncles (1997) argued that the increased interest in LPs is driven by several beliefs widely held by marketing managers:

- Customers want to be part of the brand that is evolving;
- The majority of customers tend to be loyal to a single brand and
- The loyal customers are a profitable group since they are many and buy more.

Therefore, it should be possible to reinforce this group's allegiance to perpetuate such loyalty. Using data manipulation techniques, for example, marketers can employ personalised messages to reach this group.

These beliefs have been challenged through research. Nonetheless, the proliferation of LPs continues as companies strive to retain customers as well as gain market share.

1.3 Motive behind LPs

Earlier research on loyalty focused on supplier-customer relationships, in which customers tend to purchase more from suppliers with whom they have a better relationship (Dowling &Uncles, 1997). Following this, research sought to prove how loyal such customers are or could be. The major premise was that reduced servicing costs, reduced price sensitivity; increased volumes, and referrals drove the profitability by these loyal customers; as such, supporting the notion that it costs more to acquire a new customer than it does to retain existing ones.

The company needs to know its customers well in order to identify those who are loyal, which could be relatively easier in a business-to-business scenario than in the consumer space. In business markets, companies have used this data to determine profitability and the customer lifetime value of each customer; the process is costly and even more so in the consumer space.

As they launch their LPs, companies usually state their objectives, chiefly to retain customers, maintain profitability measures such as turnover, and margins, increase loyalty and improve cross-selling levels. The major driver is the notion that a few loyal customers contribute the bigger portion of the revenue. The additional benefit of the programmes is the data collected on customers, crucial for insights into future marketing activities. Other benefits may include pre-empting an introduction of a competing brand in the market as well as the introduction of a competing program.

1.4 Impact of LPs on consumer behaviour

Dowling and Uncles (1997) observe that the impact of LPs on consumer behaviour is measured along various dimensions:

- Percentage of buyers purchasing the brand in relation to the estimated total market;
- The share of wallet or number of purchases per buyer;
- The percentage of repeat buyers; and
- The split between those who are 100 percent loyal and those who are multiple brand buyers.

The companies use this data to establish segments and measure the level of service by the company to those segments.

Most consumers tend to adopt ‘polygamous loyalty’; hence, the difficulty companies face as they attempt to grow the category of 100 percent loyalists. Therefore, this category remains a small percentage of the total customer base. The generalised reasons for polygamous behaviour include the notion that buyers tend to purchase different brands for different occasions, and due to limited availability of other brands.

Research continues on the impact of LPs on consumer behaviour. In most competitive markets where copycat responses are likely, the impact could be minimal. Even a highly innovative scheme would have a positive impact in the short-run before competitors launch counter responses. More established brands tend to attract a larger pool of customers. Small brands experience sales from few buyers who buy less frequently.

Dowling and Uncles (1997) conclude that advocates of LPs argue that such schemes are profitable since:

- It costs less to service a loyal customer; however, this notion remains contentious as to why it would cost less to service a very regular customer than any other repeat customer.

- Loyalty correlates negatively to price sensitivity; nonetheless, regular customers tend to expect discounts as a reward for their loyalty, which may be perceived as price sensitivity.
- Companies gain a higher share of wallet from loyal customers. This could be a function of customers buying more of a product or service category than do less loyal customers.
- Loyal customers serve as advocates of the product or services of the company (word of mouth advertising).

1.5 Rewards and customer loyalty

Customers draw functional, economic and psychological benefits from the products and services they buy as a prime source of customer value (Dowling & Uncles, 1997). The customer value may be evaluated along three dimensions: loyalty to the brand, perceived value of the rewards, and the effect of timing. As an example of the perceived values, customers may perceive the rewards to be aspirational, such as flying, instead of a cash-back offer. Customers put more value on rewards that can be easily redeemable.

In some instances, the buyer may be more loyal to the deal on offer rather than to the core product or service. Mostly, this is dependent on the level of customer involvement. In the case of low involvement, the challenge is that it creates a temporary point of differentiation, which leads to companies in this situation having to run continuous promotions. In the case of high involvement, such as a frequent flyer programme, the product or service, not the incentive, is the draw card.

1.6 Market conditions

Dowling and Uncles (1997) further argue that the notion of loyal customers, in most cases, being more profitable as an oversimplification. The data collected by each company should be used to test this notion. Uncles, Enrenberg and Hammond (1995) suggest that the following market conditions should prevail to support an introduction of an LP:

- Open competition prevails within the particular industry;
- The products and services from competing companies are functionally substitutable;
- There is less likelihood that a particular brand may appeal to a particular subgroup of consumers; and
- Dynamic variation in competing brands is minimised over time.

Most companies would contest these elements by highlighting their various points of differentiation. In most cases, such differences are very trivial and these conditions do exist in general terms in most industries.

1.7 LP partnerships

As part of enhancing the value proposition for joining an LP, most LPs invite partners to draw mutual benefits. Historically, single-vendor LPs dominated the market; however, as Berman (2006) highlights, partnerships with other vendors have gained prominence in the market. Blatteberg, Kim and Neslin (2008) note that partnerships can be categorised into two main forms; first, the main company establishes a programme and allows members to earn or redeem points with complementary partners. A typical example is a frequent flyer programme that includes hotel and car rental companies. The second variation is a group of companies participating in an independently operated LP. Usually the group would comprise companies in frequently purchased sectors.

Members draw multiple benefits from multi-vendor LPs: faster accumulation of rewards as well as multiple options where rewards may be redeemed. The partners may experience spillover effects or draw other strategic benefits related to networking, cross-selling opportunities and cost advantages (Berman, 2006). Furthermore, in a multi-vendor LP, a loyalty card offers the convenience of carrying a single card, but with an opportunity to earn and redeem points at multiple providers. However, a risk exists that the benefits may not be well aligned to the focal product or service and this can be harmful to the vendor (Kivetz, 2005).

1.8 Voyager frequent flyer programme

Voyager is South African Airways' (SAA) LP that serves to reward frequent flyers on SAA. Voyager allocate points, called 'miles', to members based on the length of the flight. The miles can be redeemed for free flights, upgrades and other benefits.

The programme offers five tiers – Blue, Silver, Gold, Platinum and Lifetime Platinum – with each tier providing members with exclusive benefits. This means that each tier has a threshold. The threshold is reached in multiple ways such as flying specific sectors frequently enough to achieve the threshold. Members remain in a specific tier provided they accumulate enough miles within a stipulated period. If the member does not meet the requirement, they are relegated to a lower tier.

The voyager miles are valid for a stipulated period (approximately three years) after which the miles are forfeited. Voyager members may book seats allocated on specific flights to redeem miles. Various options are made available to afford members flexibility in redeeming miles, as indicated in Figure 1. However, some options cost more miles based on the level of flexibility afforded to a member.

Spending Miles

The Voyager Miles you earned ultimately allow you to reward yourself and to join our world of opportunities and enter into the land of horizons. You can exchange accumulated Miles for benefits, such as flights, car rental, leisure and lifestyle benefits. Your Miles can be used for flight awards as follows:

- ***AnyDay awards:*** require more Miles, but they have no restrictions. If a seat is available in the appropriate class you can reserve it for your Any Day award. Highly recommended for those urgent flights.
- ***SuperPlus awards:*** give you access to an economy reservation bucket, which contains 25- 30% of our total capacity. The SuperPlus award is applicable to **SAA operated flights only** and therefore excludes codeshare, SA Express and Airlink flights.
- ***MileageKeeper awards:*** as the term implies, less Voyager Miles are required for these awards. These awards are however subject to limited seat allocations and are capacity controlled.
- ***Upgrade awards:*** may only be used to the next higher class, by simply purchasing economy class tickets on qualifying fares (Y, B, M and K class) for example, from Economy to Business class. Members cannot upgrade further to First Class – neither with Miles nor cash.

Figure 1: Spending Voyager miles

(SAA, n.d.)

1.9 Voyager partnerships

Over the years, LPs have evolved from single vendor to multi-vendor programmes. Multi-vendor programmes are perceived to offer more value to the members than single vendor (Berman, 2006).

The Voyager programme started as a single-vendor program focused on rewarding frequent flyers of SAA. The program evolved to include other companies that are perceived to be in related industries such as car hires and hotels. In 2006, SAA became a member of Star Alliance (n.d.), as such extending the partnership of the Voyager programme to include airline members of Star Alliance. The alliance (Star Alliance, n.d.) brought various frequent flyer programs from various airlines together to offer member various options to generate as well as to redeem their points.

1.10 Problem statement

1.10.1 Main problem

As indicated, multi-vendor LPs have gained prominence and additional companies have come to participate in the Voyager programme. Recently Total (fuel/petrol company) joined the programme (Total, n.d.). Voyager allows its members to earn and redeem miles from participating companies. As companies continue to provide benefits by participating in multi-vendor programmes, this idea would become attractive to other companies for them to remain competitive; but could this lead to increased cross-buying behaviour among the participating companies? Given the prominence of Voyager in the market, what type of companies may be invited to join and what would drive other companies to participate?

1.10.2 Sub-problem 1

Do reinforcing effects exist to foster cross-buying of products and services among the vendors in a multi-vendor LP?

1.10.3 Sub-problem 2

The literature indicates that vendors in complementary industries (in this case other airlines, hotels and car hire companies) benefit from participating in a multi-vendor program (Lemon & Wangenheim, 2009). How do reinforcing effects compare among different categories of participating vendors?

1.11 Significance of the study

Lemon and Wangenheim (2009) conducted a similar study in Europe; hence, this study was significant in its challenge of some of these findings in a different environment.

In a LP that exhibits strong reinforcing effects in the core service in the programme, the study identified the factors that characterised the ideal partner.

As Voyager increased the number of participating vendors, the study provided an indication of what types of companies should be invited to participate.

1.12 Delimitations of the study

The research is a replica of the study conducted by Lemon and Wangenheim (2009). Although their data came from multiple programmes, in this study only one LP was considered due to the challenges of obtaining relevant data on other programmes. The selection of service provider partners used in this study represented proxies for the chosen categories and did not represent an exhaustive list of partners in the programme.

1.13 Definition of terms

- *Loyalty programme (LP):* a vendor programme aimed at rewarding recurrent users of the service.
- *Voyager:* the LP at SAA.
- *Cross-buying effect:* the influence of the use of one service on another service.

1.14 Assumptions

In order to conduct this research, the following assumptions were made:

- The sample data was representative of the typical programme member within different tiers; and
- All the rewards obtained in various categories in different years were included and the totals reflect the points accumulated before redemption.

CHAPTER 2. LITERATURE REVIEW

As companies come to the realisation that the source of competitive advantage rests on the interface with the consumer (Dawar, 2013), most companies have developed LPs to instil loyalty. Several definitions of LPs are adopted in the literature; The American Marketing Association's dictionary refers to a LP as "a continuity incentive program offered by a retailer to reward customers and encourage repeat business" (AMA, n.d.) Dorotic, Bijmolt and Verhoef (2012) extend the definition to include manufacturers. In some instances, the definition includes reward programs, frequent-shopper programmes, loyalty cards and frequent flyer programmes.

Managers have awakened to the importance of cultivating loyalty as the competition intensifies and points of differentiation become eroded over time. It has become important for managers to cultivate loyalty to drive sales and maintain market share (Zeithaml, 2000). As a result, a wide variety of programs has been launched throughout the world (Kumar & Reinartz, 2006).

Various studies have demonstrated that frequent flyer programmes have a significant impact on how travellers choose an airline (Suzuki, Crum & Audino, 2003). These have led to a proliferation of LPs and improving the relative attractiveness of such programmes has been a major issue for airlines globally in an attempt to retain and attract travellers (customers) (Kumar & Reinartz, 2006). In 2002 The Economist (2002) projected that LPs are growing at 11 percent per year and that frequent flyer points (miles) could well be the second largest currency after the US dollar; further, the points generated approximately US$4 billion in annual revenue for approximately seven top legacy airlines (Beirne, 2008)

Customer loyalty can be attributed to various elements of a company; it might be towards the brand (Yi & Jeon, 2003), towards the LP (Dowling & Uncles 1997; Yi & Jeon, 3003), employees (Reynolds & Beatty, 1999) or channel intermediaries (Verhoef, Langerak & Donkers, 2007). In particular, Yi and Jeon (2003) define program loyalty as having a positive attitude towards the benefits

the programme has to offer, whereas brand loyalty can be attributed to having a positive attitude towards the company's brand.

Company loyalty is a function of the customer's emotional state that includes the underlying psychological state and reflects the nature of the relations between an individual and the provider that leads to a positive attitude (Kumar & Shah, 2004). Program loyalty, on one side, is economic or financial in nature. Customers who are loyal to the programme may not necessarily develop affinity towards the provider but be in it for the benefits offered by the programme. Dick and Basu (1994) have termed it 'spurious loyalty' since it is devoid of emotional elements. Uncles, Dowling and Hammond (2003) argue that the attractiveness of the programme leads to customers building a relationship with the programme instead of the brand. When a programme offers tangible benefits, customers tend to continue to be loyal to the programme, even when competing providers are participating within the same programme, but would not necessarily buy from the same company. Customers may switch between competing providers to gain the benefits offered by the programme (Evanschitzky et al., 2012).

A strong loyalty to the company offering the programme rather than the programme itself may impose challenges to the companies participating in multi-vendor programmes (Evanschitzky et al., 2012). It makes it tough for the other partners to manage their affiliation to the programme. Hence, spillover effects remain a big motivation for other partners to continue participating in such a programme. If however, there is a stronger loyalty to the programme, competing partners may participate in the same programme. All participating partners should drive the attractiveness of such a scheme. Not all partners would benefit equally from such a scheme, as such; some partners may even terminate their participation given the costs involved (Evanschitzky et al.,, 2012).

Evanschitzky et al. (2012) concludes that once a customer has been attracted to a particular provider, an LP and its economic factors may lead to cross- and up-selling opportunities. However, Evanschitzky et al. (2012) cautions that managers should not assume that LPs automatically induce loyalty to the

company. Managers should continue to deliver emotional and economic benefits to the customer to sustain the relationship. Since it is not always clear where customer allegiance resides (with the company or the programme), managers should continue to enhance the benefits offered by the LP and engage in activities that create brand affinity; as such, both the company and the programme loyalty have proven to be drivers for future sales.

2.1 Drivers behind introducing LPs

Various factors motivate companies to introduce LPs, such as retention, increased sales and brand building (Dorotic et al., 2012). The motives behind introducing a loyalty program are evident in the design of such a programme and would typically have the following elements (Blattberg et al., 2008):

- *Foster loyalty:* reward members to enhance attitudinal and behavioural commitment that leads to increased retention, repeat purchases and share of wallet (SOW);
- *Long-term relationship:* that can be exploited through cross-selling and up-selling;
- *Ongoing marketing:* programme offers opportunities for targeted promotions and marketing; and
- *Management:* long-term value for the customers, beyond segment level to individual level, leading to computation of customer lifetime-value.

All these factors are taken into consideration when designing a LP, while simultaneously driving the objective behind the programme.

In essence LP has a positive effect on lifetime duration and customer SOW at the store level in retail setting (Meyer-Waarden, 2006). Therefore a positive relationship exist between SOW and life time duration which means the more customer spend with a service provider the more likely they would stay longer with that provider, further the impact of SOW on life time duration increases with time (Meyer-Waarden, 2006). East, Harris, Wilson and Hammond (1995) also observed that in some instances, customers ignore deals and stick to a particular store as a way to simplify their shopping. Companies strive to

encourage customers to pay a premium for their products and services. SOW is a good indicator of where customers are willing to spend their money.

Ultimately, from the company's perspective the major objective is to retain loyal profitable customers through creating high switching costs. So LPs functions as barriers that have proved to influence customers positively (Evanschitzky & Wunderlich, 2006; Jones, Mothersbaugh & Beatty, 2000). Nonetheless, the question remains whether the customer is loyal to the company or to the programme itself (Meyer-Waarden, 2006).

2.2 LP design

The design of an LP can be characterised by various factors, including the programme structure, rewards and programme partners, among other things (Blattberg, et al., 2008). The design plays a major role in attaining membership to the programme. The design also determines the effectiveness of achieving a positive impact on customer behaviour and attitude towards the provider. Factors as mundane as allocation of points may influence purchase choice and the performance of the LP (Dréze & Nunes, 2007).

Blattberg et al. (2008) identify two prevalent structures; frequency reward and customer tier. In frequency reward structure, the customer is encouraged to purchase a certain amount and thereafter receive a reward; all customers who reach the threshold receive the rewards. The customer tier system, on the other hand, segments the customer base and allocates rewards based on the customers/segments' value to the company. The value may be actual sales or projected sales (employing the customer-lifetime-value approach) (Kumar & Shah, 2004). As such, the provider creates point-pressure for customers who are close to qualifying for the next tier or negative pressure for those close to being downgraded (Kumar & Shah, 2004). Wagner, Hennig-Thurau and Rudolph (2009) demonstrated that customers in higher tiers are likely to be more sensitive to service failures and loss of status such that the negative effects of being downgraded may seem more motivating than the positive effects of being upgraded to the next tier.

Providers offer rewards in multiple ways, directly and indirectly. Direct rewards relate to products or service offered by the provider (e.g. buy ten cups of coffee and get one free), whereas the indirect rewards could be linked to the partners in the programme (e.g. buy ten products and get a movie ticket free) (Roehm & Roehm, 2002). Kivetz (2003) argues that direct rewards tend to influence positive behaviour towards the provider and cement the attitudinal commitment.

Rewards can be grouped into economic rewards such as discounts, coupons, rebates or cash, and psychological rewards such as preferential treatment, special events or entertainment. Kim, Shi and Srinivasan (2001) contest that cash rewards are practical and appropriate only if the higher-user segment is small and price sensitive. Otherwise, the reward may be too costly rendering the higher-user segment unprofitable. The downside with economic rewards is that customers may become more attached to the reward than the brand (Dholakia, 2006).

On the other hand, the psychological rewards tend to enhance the attitudinal commitment that in turn perpetuates sustainable loyalty (Phillips,Noble &Noble, 2010). Bridson, Evans and Hickman (2008) demonstrated that preferential treatment has a positive impact on customer's commitment, satisfaction and repurchase likelihood.

Furthermore, customers that are not inherently motivated to build a long-term relationship with the company prefer immediate rewards. However, markets that are prone to variety seeking behaviour tend to prefer delayed reward (Keh & Lee, 2006). Roehm and Roehm (2010) demonstrated that customers respond positively to long-term rewards if such rewards are in line with their long-term personal values and goals.

Over the years, providers have included partners in their programmes to enhance the benefits, which allow customers to redeem points at complementary partners (Blattberg et al., 2008). Providers tend to select partners in frequently purchased sectors since they offer convenience and more redemption options.

As part of enhancing the value proposition for joining an LP, most LPs invite partners to draw mutual benefits. Historically single-vendor LPs dominated the market, however, as Berman (2006) highlights, partnerships with other vendors have gained prominence in the market. Blatteberg et al. (2008) notes that partnership can be categorised into two main forms; first, the main company establishes a programme and allows members to earn or redeem points with complementary partners. A typical example is a frequent flyer programme that includes hotel and car rental companies. Second, a group of companies participate in an independently operated LP; usually the group would comprise companies in frequently purchased sectors.

Members draw multiple benefits from multi-vendor LPs: faster accumulation of rewards as well as multiple options where rewards may be redeemed. The partners may experience spill over effects or draw other strategic benefits related to networking, cross-selling opportunities and cost advantages (Berman, 2006). In the airline industry many points (miles) are not redeemed, therefore multi-vendor LPs provides more opportunities to redeem the miles (Martin, Roman & Espino, 2011).

However, Dowling and Uncles (1997) questioned the causal direction of effects; they doubt if LPs modify the purchase behaviour; it is simply a matter of heavy users are generally more loyal customers. Meyer-Waarden (2006) addressed this issue by demonstrating that LPs reduced the risk of attrition. The customer behaviour within certain segments tends to change after joining the LP. It may discourage them from shopping at competitors.

In the airline industry the attractiveness is also generally driven by how the scheme is designed; how travellers accumulate and redeem the points (Suzuki, 2003). The design affects the attractiveness since it drives the benefits a traveller can draw from the programme such as a ticket for a round trip. Clearly most airlines would strive to achieve a design that provides maximum benefit to their customers.

2.2.1 Usage of core service (flying)

Lemon and Wangenheim (2009) define a core service as the usage of the primary service, in this case flying offered by the main partner (SAA). The main partner earns direct revenue using their service and indirect revenue when members earn points with the partner services. The increased use of the core service reflects loyalty to service provider

Linked to the concept of pressure points, increased usage of the core service to attain a threshold and subsequently access the benefits can increase perceived switching costs. Customers tend to purchase more when they are closer to reaching the points necessary to claim the reward (Kivetz, Urminsky, & Zheng, 2006).

- *Hypothesis 1:*Cross-buying activity among the participating vendors increases as the members increase the usage of the core service (flying).

2.3 Attaining membership in LPs

The motivation for a customer to enrol in an LP is based on the customer's perceived value of the program; potential benefits versus the cost of joining (Demoulin & Zidda, 2009).

The benefits offered by LPs can be grouped into economic and symbolic (Furinto, Pawitra & Balqiah, 2009). Customers with a strong economic benefit orientation are likely to join multiple programmes to reap the economic benefits; they exhibit low levels of loyalty to any specific LP provider (Leenheer, Van Heerde, Bijmolt & Smidts, 2007). Some studies have shown that although economic benefits are a huge motivation for enrolment, their impact declines soon after enrolment (Leenheer et al., 2007). Once a customer has been a member for a while, the perceived benefits tend to have less influence on the purchase behaviour of the member. This also applies to the attitudes and the feelings towards the provider, which in turn influences the behaviour (Steyn, Pitt, Strasheim, Boshoff & Abratt, 2010).

The customer assesses the effort required to join an LP against the offered benefits or rewards to make a decision to join. Various reasons contribute to customers' reluctance to join an LP, including low frequency of shopping (Stauss, Schmidt& Schoeler, 2005). Therefore, reducing the perceived cost of participating in an LP is a key factor to increasing the level of enrolment. The downside is that, as the cost of participation drops, it may encourage customers to participate in multiple programmes, which reduces the usage of a specific LP (Allaway, Gooner, Berkowitz & Davis, 2006)

The costs may include transportation and convenience costs, which depend mainly on the distance from the store or location of the offering. Customers are also usually concerned about privacy issues; how the collected information could be used outside the programme (Demoulin & Zidda, 2009). Participation requirements may also add to the perceived costs; for instance, in some LPs, an invitation or certain level of performance to qualify is required (Kim et al., 2009).

Steffes, Murthi, Rao and Ram, 2008) argue that customers who join voluntarily exhibit a higher level of loyalty. Therefore, intrinsically motivated customers tend to be more loyal. The chosen acquisition channels; direct mail, Internet or telesales tend to influence the likelihood of enrolment (Steffes et al., 2008).

The early adopters of the LP tend to be ultimately the heavy users of the programme and invariably already exhibit high loyalty to the provider comparatively. In most cases, they happen to live close to the source (Demoulin & Zidda, 2009). Early adopters tend to be high-income earners who would ultimately spend more to gain the benefits and they tend to participate in multiple LPs (Allaway et al., 2003). These heavy buyers are also influential in recruiting new members through social interactions such as word-of-mouth.

Companies strive to improve their relationships with their customers through various strategies. Reichheld and Sasser (1990) observed that long-term relationships tend to be more profitable than short-term ones, due to the reduced cost of maintaining the relationship as well as the increase in revenue

driven by loyalty. However, such a proposition has been contested (Dowling &Uncles, 1997).

For the purpose of this research, it could be argued that as the membership duration increases, the cross-buying activity would also tend to increase; this would be a manifestation of the customer loyalty. However, Bolton, Lemon and Verhoef (2004) observed that the cross-buying may plateau as the membership duration increases, suggesting a ceiling effect.

- *Hypothesis 2:* Cross-buying activity increases with the duration of the customer relationship.

2.4 LP quality

Vesel and Zabkar (2010) argue that the quality of the LP has an impact on the quality of the relationship with the organisation as well as the customer loyalty. Various factors are attributable to the quality of a program. In particular, customers experience different kinds of problems with LPs such as qualification barriers, the difficulties relating to claiming rewards, or additional costs incurred in an attempt to enjoy the benefits of the programme (Stauss et al., 2005).

Omar and Musa (2010) note that customer satisfaction of an LP is mostly post-experience, and its evaluation is a function of how well the LP exceeds the customers' expectation. Studies conducted in retail context suggest that satisfaction with the service has a positive influence on the future usage (Demoulin & Zidda, 2008). Therefore, service quality is a factor in determining satisfaction and loyalty (Vesel & Zabkar, 2010)

Omar and Musa (2010) further observe that merely calculating points and purchasing volume is not sufficient since point accumulation and redemption choices may ultimately counter the original objective of increasing loyalty as highlighted by Liu and Yang (2009). Therefore, the LP should be service oriented with member interaction at the heart of their design (Omar & Musa, 2010).

Programme loyalty is driven by multiple factors; social relationship concepts have found to play a significant role in development of loyalty (Goodwin & Gremler, 1996). Social benefits positively influence customer's commitment to the relationship. De Wulf, Odekerken and Iacobucci (2001) argued that social programmes designed around personalising customer relationships tend to generate more sustainable competitive advantage.

Special treatment offered by the programme such as access to the lounge or boarding first in case of frequent flyer programmes, has also been identified to entrench positive attitudes towards the programme (Gwinner et al., 1998). Hennig-Thurau, Gwinner and Gremler (2002) further suggest that special treatment benefits may have indirect impact on word-of-mouth communication. However, customers motivated by special treatment may be loyal as long as the provider offers higher reward (Fournier, Dobscha & Mick, 1998).

Perceived value of the programme, which is the customer's overall assessment of the utility of the product or service based on the benefits received, also play a major role in loyalty (Zeithaml, 2000). Value refers to cost-benefit balance as well as comparing the value among competing providers (Yang & Peterson, 2004). Therefore, perceived value can induce loyalty (Parasuraman & Grewal, 2000) and influence intentions to purchase in future (Yang & Peterson, 2004).

2.5 Customer behaviour and attitudes

Cigliano, Georgiandis, Pleasance and Whalley (2000) argue that overall LPs create small positive changes in aggregate performance measures such as penetration levels, average purchase frequency and average share-of-wallet. They demonstrated that retail stores achieved an average growth of between one and three percent in the first year of launching an LP or an average increase of about four percent in purchase frequency.

Various factors contribute towards the performance of an LP; these include the level of competition and the company's market share. As the market reaches saturation, the impact decreases (Liu & Yang, 2009). Providers counter these by extending the category within which the LP operates (Kopalle & Neslin,

2003). Nonetheless, companies with huge market share tend to benefit more from LPs as they strive to increase purchase frequency and share-of-wallet since they have more buyers and stronger brand loyalty (Liu & Yang, 2009).

Furthermore, LPs increase the level of customer retention since they create psychological switching costs (Wendlandt & Schrader, 2007). Economic switching costs exist, which capture the benefits a customer will forgo by switching to another provider (Mimouni-Caabane & Volle, 2010). For example, Carlsson and Lofgren (2006) argue that the economic switching costs associated with the frequent flyer program are estimated between 8 and 12 percent of the ticket price.

It can be argued that not all members who participate in a LP have a strong fit with the core service. Therefore, different partners would have diverse impacts on the future customer behaviour. Some partners would have a much stronger positive impact than others might have (Washburn, Till, & Priluck, 2004).

The multi-partner LP offers various benefits such as networking, spillover effects from partner's brands and cross-selling opportunities (Rese, Wilke and Schimmelpfening, 2008). Customers who are happy with the core provider tend to increase their purchases with the complementary partners. Nonetheless, the collaborating partners should actively promote and encourage cross-purchasing, attaining full potential, which tends to be high among complementary partners (Derotic, Fok, Verhoef & Bijmolt, 2010).

- *Hypothesis 3:* The increase in cross-buying will be higher for the vendors that exhibit a stronger fit with the core service (Voyager).

Literature presents some mixed results with respect to reinforcing effects among complementary providers. Sharp and Sharp (1997) found no spillover effects among complementary providers, whereas Meyer-Waarden (2006) and Benavent, Crie and Meyer-Waarden (2000) found significant spillover or network effects in retail stores in a multi-vendor LP. Further, Dorotic, Fok, Verhoef and Bijmolt (2010) found that cross-purchasing does not respond significantly to individual participants' promotions.

Psychological switching barriers are hard to quantify but have a positive impact on the attitudinal and behavioural response particularly in the long-term (Steyn et al., 2010).Bolton, Kannan and Bramlett (2000) identify the indirect effect of LP participation on customer retention as the customers who experience high psychological barriers tend to discount any negative experiences.

In general, unlike non-members, LP members exhibit increased levels of behavioural loyalty (Meyer-Waarden, 2008). The change in the average size of the expenditure is dependent on the type of LP. In most cases, the absolute increase in purchase behaviour tends to be high in short-term LPs such as customers targeting benefits attached to level of purchase within a specified period (Lal & Bell, 2003). These types of LPs resemble sales promotions aimed at increasing purchase frequencies and volumes during the promotional period. Long-term LPs experience the sharpest purchase frequency spikes within the first few months of enrolment (Liu, 2007).

Intuitively, customer segments are likely to react differently to LPs similar to sales promotions (Mela, Gupta & Lehmann 1997). Consumer characteristics such as shopping orientation and sensitivity to sales promotions play a major role in the strength and direction of the impact of LPs on consumer behaviour. This ultimately calls for an analysis of LPs at an individual level. Customer segmentation is important in such an analysis. Benavent et al. (2000) attest that LPs tend to drive profitability when applied to a selected few customers, hence most programmes are destined to fail since they lack proper targeting.

Meyer-Warden (2006) then suggests that LPs should extend beyond rewarding usage and include rewarding customers according to future-oriented measures such as estimated customer lifetime value. Kumar and Shah (2004) argue that LPs can drive positive behaviour simultaneously with profitability. This implies that companies should reward different aspects for different segments based on dimensions already discussed and objectives they sought to obtain.

In the airline industry, travellers can be categorised as business or leisure. Generally, business travellers pay more especially during what is regarded as prime slots such as early in the morning and late in the afternoon. On the other

hand, leisure travellers tend to shop around for cheaper flights. However, business travellers would redeem their points for leisure travel (Suzuki, 2003). This implies that business travellers generally pay more for their points than leisure travellers for the same benefit. Therefore, the benefits to the business traveller may be deemed less than that of leisure travellers.

Suzuki (2003) concludes that for a scheme similar to Voyager, where points are gained based on miles flown, the scheme would be more attractive to high-mile travellers. The low-mile travellers would have to make multiple trips to gain enough miles to enjoy the benefits.

Since the impact or effects of LPs vary across customer segments, the impact is higher among low to moderate buyers in both the short- and long-term (Lal & Bell, 2003) and it could be as a result of the fact that high buyers have limited room to increase their purchase volumes (Bolton et al., 2000). Therefore, the overall impact or profitability of an LP is dependent on the growth in purchase frequencies and volumes among the light and moderate buyers (Liu, 2007).Therefore, the ultimate design and benefits from the LP should be tailored for different segments (Verhoef, van Doorn et al., 2007).

- *Hypothesis 4:* Cross-buying activity is stronger at high tiers, in a tiered LP similar to Voyager.

As a relationship building tool a LP should enhance the customers' attitude towards the provider, which would result in commitment and satisfaction (Kim et al., 2009), otherwise the customer might just stay with the provider because they lack alternatives (Hansen, Deitz & Morgan, 2010). The attractiveness of the LP or its rewards may be increased to achieve high levels of customer commitment and satisfaction (Demoulin & Zidda, 2008). The attractiveness includes the quality of the customers' interaction with the employees. The LP management should include empowerment of employees to enhance customer experience (Vesel & Zablkar, 2010).

2.6 Points-pressure and reward behaviour mechanisms

Some LP rewards are based on achieving a threshold in accumulated purchases, thus creating point-pressure where customers are encouraged to increase purchases in order to earn the reward (Kivetz et al., 2006). In most cases, companies manipulate the customer's perception regarding their proximity to the reward as a way of stimulating purchases, such as awarding customers initial points. The process could be divided into sub-goals, having different value rewards attached to the milestones, which could result in increased purchases (Kivetz et al., 2006). The perception of proximity to the reward is important in avoiding a situation where customers are discouraged to buy if they believe that they still have a long way before they reach the threshold target (Phillips et al., 2010).

In short-term LPs (e.g. buy ten and get one free or buy one and get twice the points), the point's pressure effect is evident (Kivetz et al., 2006). However, in long-term LPs, customers earn points over a long period that serves as a currency to redeem for the rewards, products or services. Blattberg et al. (2008) show that the points-pressure tends to disintegrate in instances where there is no deadline to reach the threshold.

As the rewards are geared towards influencing customer behaviour, the provider hopes that this behaviour would continue beyond the point at which the customers receive the rewards (Blattberg et al., 2008). Differences exist between long- and short-term LPs with regard to reward redemption. The reward redemption is geared toward building a long-term relationship with the provider (Taylor & Neslin, 2003). When the reward is geared towards increasing or enhancing the customers' attitudinal commitment, the increased purchase pre-reward redemption tends to continue post-redemption (Liu, 2007). Nonetheless, the behaviour is dependent on what value the customer attaches to the reward. In some instances, the rewards go unredeemed perhaps due to perceived low value (Liu & Brock, 2010).

Furthermore, a positive correlation exists between the prior use and the future use of the service (Bolton & Lemon, 1999). As indicated, continued use of a

service fosters loyalty, which suggests a positive association between cross-buying and future patronage (Venkatesan & Kumar, 2004). A longitudinal approach may then demonstrate that LPs are profitable in the long-term. The customer experience with LP may cement commitment to the core service.

- *Hypothesis 5:* Higher cross-buying (in time t) leads to higher core service usage (in t+1).

The future usage may be attributed to a customer's level of satisfaction with the provider or the benefits of the programme. Anderson and Sullivan (1993) define satisfaction as an overall evaluation based on both purchase and consumption experience with good service over time, and explored the link between satisfaction and loyalty.

2.7 Marketing and promotions

As companies are under pressure to improve their segmentation techniques to lower the costs of promotions while increasing the likelihood of a successful sale, LPs provide rich data on customer' buying patterns (e.g. purchases, responses to marketing communications). The data can be utilised to personalise marketing and promotions (Berman, 2006). Companies are using personalised marketing and promotions to influence the behaviour positively as well as create strong loyalty to their brands. Personalised marketing also increases the chance of successfully cross-selling and up-selling (Berman, 2006).

Personalised marketing comes at huge cost, as companies tend to lose the economies of scale. Another important issue is the customer's reaction to personalised marketing and if they perceive such initiative to be discriminatory. Recruiting new members by offering a perceived better reward than those offered to existing members may create an overall negative perception (Zhang & Wedel, 2006).

As already stated, the data could be used for personalised promotions. Zhang et al. (2000) demonstrated that promotions with immediate reward have a

greater impact than delayed incentives. As such, LPs' impact on behaviour and attitudes is increased if the LPs are combined with other marketing mix elements (Liu & Yang, 2009). Therefore, companies strive to employ promotions and rewards that enhance and reinforce each other's growth of the brand (Kivetz et al., 2006). The multi-partner LP offers various benefits such as networking, spillover effects from partner's brands and cross-selling opportunities (Rese et al., 2008). Customers who are happy with the core provider tend to increase their purchases with the complementary partners. Nonetheless, the collaborating partners should actively promote and encourage cross-purchasing attaining full potential, which tends to be high among complementary partners (Dorotic, et al., 2010).

However, Dorotic et al. (2010) conclude that in general, sales promotions in a multi-vendor LPs do not change aggregate patterns of members' purchase behaviour. Customers maintain the regular pattern and collect points. The point is also highlighted by Leenheer et al. (2007) that discounts or savings features of LPs do not materially affect members' behaviour, If customers do not perceive the promotion to be valuable then such a promotion would not encourage customers to change their usual patterns of behaviour as a response to the promotion. The direct sales promotion in LPs such as the one featuring additional points for additional spend may not encourage members to spend more. Joint promotion in a multi-vendor LP are relatively less effective that promotions that feature individual providers (Dorotic et al., 2010).

- *Hypothesis 6:* Bonus points accumulated through promotion have insignificant or no positive correlation with the increased normal usage.

2.8 Literature conclusion

LPs can be viewed from three angles, the company perspective, the consumer perspective, and the market perspective.

In case of the company perspective, factors that play a role include the LP design, type of market, competition etc. LPs in general, enhance customer loyalty and company profitability. Moreover, this can be a source of competitive

advantage especially through manipulation of the collected data to gain insights about the customers. Nonetheless, profitability is hard to quantify, as the cost of running an LP is usually not readily available. In the end, the company may not realise the return on investment.

The profitability issue is even more important in a case where a company introduces a scheme to imitate its competitors or a company that may determine that the scheme is not profitable and it is forced to continue running it because of the backlash it might experience by terminating it (Cigliano et al., 2000). Despite a proliferation of LPs, the evidence is still limited on whether the LPs are beneficial to a wide range of companies especially if the scheme is not linked to the long-term strategy of the company or when the data is not really being exploited as part of the marketing strategy.

In the case of the consumer, LPs can be beneficial since they offer rewards for purchases and other benefits such as better service or preferential treatment. However, some customers may not reap the benefits; in a few cases the points remain unredeemed perhaps due to the customer not meeting the threshold required for a particular benefit such as a return ticket in the case of a frequent flyer programme (Dekay, Toh & Raven, 2009). Customers can also benefit from customisation of service because of data manipulation by the provider (Rowley, 2005). LPs tend to claim high switching costs resulting in the customer becoming discouraged to look for best offers (Klemperer, 1995). Providers are pressured to develop well-targeted services to well-defined customer segments to increase the benefits drawn from the LPs.

Companies with huge market share remain in business longer. Big companies have more incentives to introduce LPs and benefit from relationship marketing than smaller competitors (Verhoef & Hoekstra, 1999). Companies that have already established a competitive advantage in the market and are successful, are well positioned to benefit from LPs (Leenheer et al., 2007). However, even though large companies may be inclined to benefit from LPs, no evidence exists that this is reserved for large companies; any company large or small may introduce an LP (Leenheer & Bijmolt, 2008). Nevertheless, smaller late entrants to the market without a true value proposition behind their LPs, run the risk of

an LP failure. Liu and Yang (2009) found that LPs had limited impact on sales for companies with low market share or those that reached LP saturation level.

In general, companies use multiple techniques to build competitive advantage, LPs remain one of such techniques, and strong value propositions could be another factor. Market dimension determine what would benefit the company in the end (Singh, Jain & Krishnan, 2008). As an example, airlines like Kulula have managed to remain competitive against other smaller airlines such as Airlink and SA Express (both of which participate in Voyager). Porter (1980) argued that an LP may be inconsistent with the concept of the 'no frills' strategy of low cost airlines. This point is further evident in discount retailers that have sustainably performed well without LPs. However, other big retailers, such as Tesco, reap rewards from their LPs (Turner & Wilson, 2006).

Consumption levels remain a concern in different countries and LPs may be perceived to increase such levels. However, LPs are designed to increase loyalty not consumption levels. Though LPs can be beneficial, their total welfare consequences remain a continued area of research interest.

This research seeks to prove the following hypotheses:

- *Hypothesis 1:* Cross-buying activity among the participating vendors increases as the members increase the usage of the core service (flying).
- *Hypothesis 2:* Cross-buying activity increases with the duration of the customer relationship.
- *Hypothesis 3:* The increase in cross-buying will be higher for the vendors that exhibit a stronger fit with the core service (flying).
- *Hypothesis 4:* Cross-buying activity is stronger at high tiers, in a tiered LP similar to Voyager.
- *Hypothesis 5:* Higher cross-buying (in time t) leads to higher core service usage (in t+1) (longitudinal view).
- *Hypothesis 6:* Bonus points accumulated through promotion have insignificant or no positive correlation with the increased normal usage.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Research methodology /paradigm

The research was based on the Voyager programme and its partners as a case research. The regression analysis was adopted to detect any cross-buying effects among partners in the Voyager programme.

3.2 Research design

The research adopted regression analysis techniques to test the hypotheses (Lemon & Wangenheim, 2009).

The model investigates cross-buying activity between the core product (flying) and various partners. The partners are split into four different categories as indicated in Table 1.

Table 1: Partner categories

Airlines in Star Alliance partnership **CBUY (A)**	**Airlines outside Star Alliance partnership** **CBUY (B)**	**Complementary partners (Car hire, hotel)** **CBUY (C)**	**Less complementary partners (Credit card)** **CBUY (D)**
• Swiss • Lufthansa • Turkish	• SA Express • Virgin • Airlink • Jetairways	• Budget • Avis • Europacar • Radisson	• Diners Club • Total • Seef

The model investigated activity within a category represented by the most popular partners within that category.

$$CBUY(A)_{it} = f\ (CORE_{it}, DUR_{it}, , CBUY(A)_{it-1}, CBUY(AB)_{it}) \quad (1)$$

$$CBUY(B)_{it} = f\ (CORE_{it}, DUR_{it}, , CBUY(B)_{it-1}, CBUY(BB)_{it}) \quad (2)$$

$$CBUY(C)_{it} = f\ (CORE_{it}, DUR_{it}, , CBUY(C)_{it-1}, CBUY(CB)_{it}) \quad (3)$$

$$CBUY(D)_{it} = f\ (CORE_{it}, DUR_{it}, , CBUY(D)_{it-1}, CBUY(DB)_{it}) \quad (4)$$

$$CORE_{it} = f\ (CBUY(A)_{it}, CBUY(B)_{it}, CBUY(C)_{it}, CBUY(D)_{it}\ CORE_{it-1},) \quad (5)$$

Where:

$CBUY(A)_{it}$ = Cross-buying (in miles) for customer i in time t of partner service (A)

$CBUY(B)_{it}$ = Cross-buying (in miles) for customer i in time t of partner service (B)

$CBUY(C)_{it}$ = Cross-buying (in miles) for customer i in time t of partner service (C)

$CBUY(D)_{it}$ = Cross-buying (in miles) for customer i in time t of partner service (D)

$CBUY(AB)_{it}$ = Cross-buying (in bonus miles) for customer i in time t of partner service (A)

$CBUY(BB)_{it}$ = Cross-buying (in bonus miles) for customer i in time t of partner service (B)

$CBUY(CB)_{it}$ = Cross-buying (in bonus miles) for customer i in time t of partner service (C)

$CBUY(DB)_{it}$ = Cross-buying (in bonus miles) for customer i in time t of partner service (D)

$CORE_{it-1}$= Core service usage (in miles) for customer i in time t

DUR_{it} = Duration of the customer's relationship with the core service at t -1

$CORE_{it}$= Core service usage (in miles) for customer i in time t

Figure 2: Model

3.3 Data sampling

As the model in Figure 2 indicates, the data was drawn from the Voyager program database. Passenger miles data for the past five years was drawn to populate the model. The data represent points (miles) accumulated before redemption. It should also be noted that the company did not provide the formula for allocation of points except to state it in broad terms that it is based on the distance travelled and the value of the ticket.

3.4 Population and sample

3.4.1 Population

The data was reduced to select only passengers who have accumulated miles from all the chosen categories. However, this sample proved to be much smaller, therefore to test the various hypotheses, different samples were used since each formula requiresd different data, except for the core service and the duration data.

3.4.2 Sample and sampling method

The sample was extracted using a query with the condition that the selected members had accumulated miles in all categories. The records that had zero miles accumulated were eliminated. Zero figures distort the picture as the sample is processed for modelling.

3.5 The research instrument

The model was built into three statistical tools, Excel, SPPSS and Eviews. Various tests were conducted to test the suitability of the data for modelling purposes.

3.6 Procedure for data collection

Based on the request made by the researcher, the data was supplied by Voyager personnel as an extraction from their system.

3.7 Data analysis and interpretation

The data was tested for suitability for regression analysis. Descriptive statistics analysis was performed on the variables to be used as the sample (Table 2).

Table 2: Descriptive statistics analysis

N = 856	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CBUYA	6362.44	7346.288	2.687	.084	12.928	.167
CBUYAB	685.69	1442.740	2.759	.084	10.305	.167
CBUYB	4132.06	5236.155	2.790	.084	9.618	.167
CBUYBB	2193.66	3997.557	4.118	.084	23.162	.167
CBUYC	754.85	1321.253	4.388	.084	29.052	.167
CBUYCB	96.26	2000.483	25.390	.084	676.798	.167
CBUYD	41595.95	84376.060	5.388	.084	39.650	.167
CBUYDB	4812.71	18679.790	8.731	.084	105.465	.167
CORE	34327.69	28432.885	1.270	.084	1.570	.167
COREB	26909.84	34973.625	1.836	.084	2.974	.167
DUR	15.6530	6.14617	-.287	.084	-.660	.167

A three-stage Least squares method was adopted as the limited information methods such as ordinary least squares methods would be inefficient do to the correlated nature of the error terms of the equations as stated (Lemon & Wangenheim, 2009).

3.8 Limitations of the study

In order to avoid missing values and zeros, it was decided that the sample should consist of members who have accumulated miles in all selected categories. This approach creates limitations regarding the validity of the model. The approach reduces the sample significantly since there is a strong case to demonstrate reinforcing behaviour between categories even if some customers do not use all services.

3.9 Validity and reliability

3.9.1 External validity

The research could be regarded as a case study as only a single programme was used for the study. The results may not represent a high level of external

validity, such that the findings may not apply to other LPs that have diverse partners, or with similar structures.

3.9.2 Internal validity

Since the sample was significantly reduced to customers who had accumulated miles in all categories, the results cannot be generalised nor provide reliable internal validity, especially in the case of multiple regression. The analysis proved that the number of records played a significant role (Mikulic & Prebezac, 2011).

3.9.3 Reliability

In order to improve the level of reliability, multiple samples were drawn to increase the sample size. This meant that to prove any reinforcing effects between the core service and the related providers (car hire, hotel) only customers who used these services were considered. The same procedure was performed to prove any reinforcing effect between the core service and other categories.

To test reliability further, it was important to utilise a sample that comprised customers who used all services, even though the sample was comparatively small. The results proved to be reasonably consistent, which demonstrated reliability of the findings.

3.10 Demographic profile of respondents

The data was extracted from the national airline's LP. The data shows miles accumulated by members between 2009 and 2015 in the different categories. Most customers were domiciled in South Africa, with average membership duration of 15 years.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

The results are presented in multiple tables since the data was broken into subsets with one column listing the relevant hypothesis. The subsets of data achieved a certain level of internal validity and tested if any differences in effects exist within subsets of data.

4.2 Results pertaining to Hypotheses 1 to 6

The results are presented in Tables 3 to 9. Each column represents a specific model as outlined in the formulae in Figure 2, Section 3.2. It should be noted that each model (formula) was represented using a different sample of data since not all members used all the services. To combine all miles accumulated from flying (i.e. core, Star Alliance partners and other partners), an extension of the model was created and Equation 6 was added.

$$COREfly_{it+1} = f\,(CBUY(C)_{it}, CBUY(D)_{it}, COREfly_{it-1},) \qquad (6).$$

Table 3 presents the results of cross-buying relationships as depicted running multiple regression models.

Table 3: Cross-buying relationships between A, B, C and D

Hypothesis	Independent	Dependent variables (Standard error in parenthesis)			
		N = 36,338	N = 168,710	N = 51,574	N = 34,597
		$CBUYA_t$	$CBUYB_t$	$CBUYC_t$	$CBUYD_t$
	Constant	4815.16 (165.02)*	3518.50 (42.28)*	235.5 (17.16)*	2818.62 (1088.1)*
Hypothesis 1	$CORE_{t-1}$	0.003 (0.0043)	-0.05 (0.003)*	0.015 (0.0008)*	0.3033 (0.0246)*
Hypothesis 2	$DURation_{t-1}$	-78.41 (10.42)*	-36.29 (2.83)*	-1.51 (1.19)	-106.48 (64.14)
	$CBUYAB_t$	2.83 (0.031)*			
Hypothesis 6	$CBUYBB_t$		1.29 (0.012)*		
	$CBUYCB_t$			-0.006 (0.018)	
	$CBUYDB_t$				-0.0005 (0.008)
control	$CBUYA_{t-1}$	0.23 (0.0067)*			
	$CBUYB_{t-1}$		0.20 (0.0063)*		
	$CBUYC_{t-1}$			0.54 (0.005)*	
	$CBUYD_{t-1}$				0.814 (0.004)
	Adjusted R^2	0.55	0.58	0.33	0.63
	VIF	2.3	2.38	1.49	2,7

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 4: Cross-buying relationships between A, B, C, D and core

Hypotheses	Independent	Dependent variables (Standard error in parenthesis) n= 856				
		$CBUYA_t$	$CBUYB_t$	$CBUYC_t$	$CBUYD_t$	$CORE_{t+1}$
	Constant	6032.79 (1498.06)*	1462.18 (707.27)**	257.18 (271.70)	15652.28 (19788.58)	23423.57 (3276.69)*
Hypothesis 1 and 3	$CORE_{t-1}$	-0.0266 (0.013)**	-0.017 (0.006)**	0.001 (0.002)	0.692 (0.188)*	0.103 (0.045)**
Hypothesis 2	$Duration_{t-1}$	-88.90 (72.93)**	-2.98 (37.17)	5.35 (14.06)	-1375.302 (1050.95)	-412.13 (159.19)**
Hypothesis 5	$CBUYA_t$					-0.358 (0.116)*
	$CBUYB_t$					-0.031 (0.15)
	$CBUYC_t$					-0.992 (0.70)
	$CBUYD_t$					0.008 (0.0074)
Hypothesis 6	$CBUYAB_t$	0.277 (0.297)*				
	$CBUYBB_t$		0.995 (0.067)*			
	$CBUYCB_t$			-0.0072 (0.018)		
	$CBUYDB_t$				-0.078 (0.273)	
	COREB					0.065 (0.036)*
control	$CBUYA_{t-1}$	0.207 (0.044)*				
	$CBUYB_{t-1}$		0.0207 (0.05)*			
	$CBUYC_{t-1}$			0.4385 (0.048)*		
	$CBUYD_{t-1}$				0.721 (0.049)*	
	Adjusted R^2	0.43	0.77	0.31	0.59	0.87;
	VIF	1.75	4.43	1.45	2,43	7,69

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 4 presents the results of a sample of customers who accumulated miles in all categories. Given the selected categories, this sample proved small in comparison to the samples used to obtain the results in Table 3.

Table 5: Cross-buying relationships between C, D and COREfly

Hypothesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
	Constant	232.60 (265.77)	215561.88 (19509.20)	27815.25 (3718.87)
Hypothesis 1and 3	$COREfly_t$	0.0012 (0.001)	0.288 (0.082)*	0.1329 (0.051)*
Hypothesis 2	$Duration_t$	2.783 (14.20)	-1598.01 (1063.72)	-399.8 (176.8)
Hypothesis 5	$CBUYC_t$			-0.71 (0.79)
	$CBUYD_t$			0.0062 (0.0082))**
Hypothesis 6	$CBUYCB_t$	-0.0062 (0.018)		
	$CBUYDB_t$		-0111 (0.2756)	
	COREFLYB			0.618 (0.039)*
control	$CBUYC_{t-1}$	0.432 (0.0489)*		
	$CBUYD_{t-1}$		0.7247 (0.0498)*	
	Adjusted R^2	0.32	0.59	0.85
	VIF	1.47	2.43	7.14

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 6: Cross-buying relationships between C, D and COREfly on Blue level

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
Blue				
	Constant	-39.81 (543.2)	63181.68 (35940.65)	25890.46 (9044.11)*
Hypothesis 1 and 3	$COREfly_t$	0.0076 (0.0067)	-0.0029 (0.391)**	0.5566 (0.089)*
Hypothesis 2	$Duration_t$	2.783 (14.20)	-4288.15 (1778.09)	-910.22 (465.39)**
Hypothesis 5	$CBUYC_t$			4.16 (2.09)
	$CBUYD_t$			0.012 (0.022)
Hypothesis 6	$CBUYCB_t$	-2.81 (1.62)**		
	$CBUYDB_t$		2.14 (1.797)	
control	$CBUYC_{t-1}$	0.629 (0.117)*		

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
	$CBUYD_{t-1}$		0.7247 (0.0498)	
	Adjusted R^2	0.39	0.67	0.48
	VIF	1.63	3,03	2,08

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 7: Cross-buying relationships between C, D and core on Silver level

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
Silver				
	Constant	352.33 (364.84)**	21359.65 (11742.05	34918.72 (15025.29)**
Hypothesis 1 and 3	$COREfly_t$	-0.0022 (0.00309)**	-0.0399 (0.0906)	0.4450 (0.0701)*
Hypothesis 2	$Duration_t$	-0.240 (19.26)	-825.28 (625.46)	-203.59 (799.68)
Hypothesis 5	$CBUYC_t$			-1.99 (6.28)
	$CBUYD_t$			-0.037 (0.054)**
Hypothesis 6	$CBUYCB_t$	-0.0049 (0.0079)		
	$CBUYDB_t$		-0.34 (0.33)	
control	$CBUYC_{t-1}$	0.3314 (0.071)*		
	$CBUYD_{t-1}$		1.095 (0.048)*	
	Adjusted R^2	0.41	0.63	0.55
	VIF	1.69	2.7	2,22

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 8: Cross-buying relationships between C, D and core on Platinum level

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
Platinum				
	Constant	-850.29 (441.89)	18241.53 (9035.72)	33251.43 (16464.13)**
Hypothesis 1 and 3	$COREfly_t$	0.0085 (0.0027)*	0.0316 (0.056)	0.685 (0.127 *
Hypothesis 2	$Duration_t$	22.95 (21.67)	-923.90 (467.87)	-176.14 (874)
Hypothesis 5	$CBUYC_t$			9.75 (4.78)
	$CBUYD_t$			0.0459 (0.088)
Hypothesis 6	$CBUYCB_t$	-		
	$CBUYDB_t$		0.077 (0.147)	
control	$CBUYC_{t-1}$	0.302 (0.075)*		
	$CBUYD_{t-1}$		0.8433 (0.0418)*	
	Adjusted R^2	0.58	0.63	0.72
	VIF	2,38	2.70	3.57

Note: * p statistically significant at the .05 level, ** p statistically significant at the .01 level

Table 9: Cross-buying relationships between C, D and COREfly on LT Platinum level

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
LifetimePlatinum				
	Constant	515.77 (976)	10504.18 (67274.91)**	159486.8 (57308.92)*
Hypothesis 1 and 3	$COREfly_t$	-0.00102 (0.0019)	0.1002 (0.1375)**	0.5345 (0.1085)*
Hypothesis 2	$Duration_t$	11.03 (37.43)	-2575.29 (2556.97)	-3873.68 (2305.42)
Hypothesis 5	$CBUYC_t$			1.845 (10.81)
	$CBUYD_t$			0.0901 (0.0443)**
Hypothesis 6	$CBUYCB_t$	-		
	$CBUYDB_t$		0.0049 (0.221)	

Hypo-thesis	Independent	Dependent variables (Standard error in parenthesis)		
		$CBUYC_t$	$CBUYD_t$	$COREfly_{t+1}$
control	$CBUYC_{t-1}$	0.141 (0.180)		
	$CBUYD_{t-1}$		1.111 (0.057)	
	Adjusted R^2	0.03	0.62	0.49
	VIF	1,03	2.6	1.96

*p statistically significant at the .05 level, ** p statistically significant at the .01 level

4.3 Model robustness checks

As not all passengers use all the services in selected categories, multiple samples were used to test various hypotheses. In Table 3, for each regression, cross-buying behaviour was tested, between a specific category and the core service a specific sample was extracted; hence, the sample sizes were different for each model, and each column represents a different formula and specific sample.

Another sample was extracted comprising all customers that used services in all categories and the results are presented in Table 4. Though the sample is small, this serves to test the robustness of the model. In both Table 3 and 4 the results are consistent and support the hypotheses; some elements are highlighted and discussed in Chapter 5, such as a negative correlation where duration is concerned.

A three-stage least squares method was adopted as the limited information methods such as ordinary least squares methods would be inefficient due to the correlated nature of the error terms of the equations as stated (Lemon & Wangenheim, 2009). Variance-based partial least squares, which is preferred over covariance-based structural equation modelling, provided fewer stringent requirements regarding indicator data but in turn allowed for building of more complex models and could also be applicable to smaller sample data (Hanseler, Ringle & Sinkovics, 2009). An attempt was made to combine all the flying miles (COREfly) as a single category. Again, the results remained consistent as can be seen in Tables 5 to 9. It should also be noted that the model fit improved.

In all instances, the R^2 ranges from 0.3 to 0.77, which shows a good approximation of the data through the model and indicated a predictive relevance of the explanatory variables (Henseler et al., 2009). The model was also tested for multicollinearity using the variance inflation factor (VIF) test. The VIF in all cases was below 10, which indicated no or minimal multicollinearity (Hair, Black, Babin, Anderson & Tathan, 2006).

4.4 Summary of the results

Overall, the results support the hypotheses (see Tables 3 to 5). The positive effect exists between the usage of the core service and the usage of services in other categories. However, a few points need to be highlighted.

[1] The effect of the usage of the core service on other services is much stronger than the use of other services on the core service.

[2] The results show negative effects between the core service and the other flying related categories, which perhaps reflect the competition and substitutive nature of the relationship with these specific categories.

[3] Duration of membership tends to have a negative effect, which possibly supports the ceiling effect (inverted-U response).

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter presents the discussion of the results. The discussion is broken into the six hypotheses. Each hypothesis is restated upfront in each section.

5.2 Discussion pertaining to Hypothesis 1

- *Hypothesis 1:* Cross-buying activity among participating vendors increases as the member increases the usage of the core service (flying).

The results presented in Tables 3 and 4 indicate that the miles earned using the core service, which is flying on SAA, had a positive effect on other services (category C: complementary service with a coefficient of .015, $p < .01$ and category D: non complementary, with a coefficient of 0.30, $p < .01$), with the exception of the use of other airlines (categories A and B: both members and non-members of the Star Alliance).

In the case of Star Alliance members, category A results showed a negative relationship between an increased use of the core service and partners in Star alliance (coefficient of .0266, $p < .05$). This could be explained by the fact that the sample used consisted predominantly of passengers who were domiciled in South Africa and would tend to fly SAA on most routes.

Another reason could be that SAA is in a code-share relationship with the other operators in Star Alliance and the miles would have been recorded as earned on an SAA flight.

In the case of partner airlines, category B results showed a negative relationship (coefficient of -017, $p < .05$). Although these are regional operators and may also be regarded as feeders to SAA, on most routes SAA is a direct competitor. While the traveller would be happy to earn miles when flying on

these operators; this raised questions about whether these operators should be participating in the scheme. Another factor to consider is whether SAA offers more points on flights that compete with its smaller regional partners. Although not all the costs of running the scheme were disclosed, it was safe to assume that points offered on regional partners came at a cost without consummate benefits. However, participating in the scheme might be beneficial on routes with competitors other than SAA who were not participating in the same scheme.

Table 4 presents the results from a sample of customers who accumulated miles across all categories. The results were in line with the findings in Table 3. Increased usage of the core service (SAA) had a positive effect on category D (coefficient of .0705, $p < .01$). Although the relationship with category C was positive, it was not statistically significant.

All the above points formed a strong motivation to consolidate all miles obtained from flying (COREfly) and establish effects between flying and other services (Table 5). The results showed a positive relationship between an increase in flying and non-complementary services (category D) with a coefficient of .288, $p < .01$. Although category C exhibited a positive relationship, it was not statistically significant.

Linked to the concept of pressure points, increased usage of the core service to attain a threshold and subsequently access the benefits could increase perceived switching costs. Customers tend to purchase more when they are closer to reaching the points necessary to claim the reward (Kivetz et al., 2006).

Customers would patronise other providers hoping to accumulate more points in order to reach the threshold. However the impact of the other service (categories A to D) on the core service (flying) is statistically insignificant (see Table 4, category A: -.041, category B: 0,141, category C: -.071, category D: .047). In addition, Dowling and Uncles (1997) questioned the causal direction of effects. One of the members of Category (D), Diners Club (credit card), had customers that would accumulate points on using the card for their purchases, however they would rather only fly when they redeem their points. This goes to

the heart of how the scheme is designed. As Dreze and Nunes (2007) argued, the design determines the effectiveness of the impact on the customer behaviour. Although flying may earn a member on average more points than from purchases from partners, a condition could be introduced to get the customer to fly on a paid ticket on SAA for a pre-determined number of times, or the condition can be based on the number of miles accumulated from flying SAA.

Another consideration, although not part of the study, was to adjust the structure of the scheme regarding where miles may be redeemed. As an example, a customer earns miles using their credit card and in turn redeems their points at another participant. This would not achieve the results of a scheme based on a core service design. This point is partly supported by Suzuki (2003); the way the points are accumulated impacts on the overall effectiveness of the scheme.

5.3 Discussion pertaining to Hypothesis 2

- *Hypothesis 2:* Cross-buying activity increases with the duration of the customer relationship.

Duration of membership was found to have a mixed effect on the usage of other services including the core service, in most categories the effect is negative (Table 4: coefficients category A: -88.9, category B: -2.98, category C: 5.35, category D: -1375,3, Core: -412.13) and all are statistically insignificant. It could be expected that the lower tiers exhibit a positive relationship, but the results present a mixed effect (Tables 5 to 8).

The negative effect supports the finding made by Bolton, Lemon and Verhoef (2004), that cross-buying may plateau as the membership duration increases, suggesting a ceiling effect. It is possible that customers who have been members for extended periods have accumulated very low miles. Although it was not part of the study, expired miles should be one of the variables to investigate.

5.4 Discussion pertaining to Hypothesis 3

- *Hypothesis 3:* The increase in cross-buying will be higher for the vendors that exhibit stronger fit with the core service (flying).

It was argued that not all members who participate in a LP had a strong fit with the core service. As discussed in section 5.2, categories A and B (both airline partners) proved that a negative effect existed with the core service. This was possibly driven by competition or code sharing, which included the element that most customer data is predominantly for customers residing in South Africa, hence they would tend to fly SAA. This led to the decision to consolidate all flying related miles into one pool (corefly). Therefore, two categories remain that depict complementary partners (category C - cbuyc) and non-complementary partners (category D- cbuyd).

Logic dictates that most customers would book a hotel and rent a car at their final destination, which means that such partners were expected to have a much stronger positive impact on the usage of the core service (Washburn, Till, & Priluck, 2004).

The results show that a positive effect existed between the usage of complementary services and the usage of the core service; the effect is weak and the results are not statistically significant (Table 5: coefficients 2,005). However, the effect is strong and statistically significant between non-complementary services (Table 5: coefficient .094, $p < .01$) and core service usage, rendering the hypothesis null.

The results confirmed that in a multi-partner LP, networking or spillover effects from partner's brands and cross-selling opportunities exist (Rese et al., 2008). The results did not give strong evidence that customers who are loyal to the core service provider (flying) also tended to increase their purchases with the complementary partners (hotel and car rental). Nonetheless, the collaborating partners should actively promote and encourage cross-purchasing thus attaining full potential, which tends to be high among complementary partners (Dorotic et al., 2010).

The result raised questions about the chosen partners or perhaps the design of the LP. It was possible that business travellers who predominantly make day trips dominated the sample; flying out in the morning and returning in the afternoon.

Since the rewards are generated directly from flying SAA or indirectly from patronising the participating partners, Kivetz (2003) argues that the direct rewards tend to influence positive behaviour. In addition, this further supports Dowling and Uncles (2009) who questioned the causal direction of effects. The results show that increased usage of flying drives positive behaviour towards other partners but the reverse is not conclusive.

The results also confirmed a conflicting finding. Sharp and Sharp (1997) found no spillover effects among complementary providers, whereas Meyer-Waarden (2006) and Benavent et al. (2000) found significant spillover or network effects in retail stores in a multi-vendor LP.

5.5 Discussion pertaining to Hypothesis 4

- *Hypothesis 4:* Cross-buying activity is stronger at high tiers, in a tiered LP similar to Voyager.

The results show that the effects are mixed within different user segments (Tables 8 and 9: Platinum and Lifetime Platinum). This is in line with the findings by Wangenheim and Bayon (2007); differences exist between high-value and low-value customers with regard to benefits offered by the programme. This is further supported by an observation made by Lal and Bell (2003), that impact is higher among moderate buyers in the short-term as high buyers have limited room to increase their purchase volumes (Bolton et al., 2000). Furthermore, the overall impact or profitability of an LP is dependent on the growth in purchase frequencies and volumes among the light and moderate buyers (Liu, 2007). Therefore, the ultimate design and benefits of the LP should be tailored for different segments (Verhoef, van Doorn et al., 2007).

Suzuki (2003) made a point that for airlines with predominantly long distance flights or city pairs, the customer would benefit more if the points were awarded based on miles flown. On the other hand, for shorter flights, which would mostly be the airlines in category B, as per this research's model, the points should perhaps be based on the number of flights flown. The lesson from Suzuki's (2003) study is that inequity of awarding points (miles) could ultimately affect the attractiveness of the scheme to different segments, or types of traveller.

- Travellers with low average flight miles per trip may be receiving considerably lower benefits than travellers with a high average miles per trip; and
- The scheme based on the number of trips or lower number of miles in case of shorter trips may be more beneficial to travellers with lower average miles per trip.

5.6 Discussion pertaining to Hypothesis 5

- *Hypothesis 5:* Higher cross-buying (in time t) leads to higher core service usage (in t+1).

In all categories, the prior use of services had a positive effect on the future use confirming that a positive correlation existed between the prior use and the future use of services (Bolton & Lemon, 1999) (Table 4: categories coefficients A: .226, $p < .01$; B: .0207, $p < .01$; C: .43, $p < .01$; D: .72, $p < .01$; core: .705, $p < .01$). .As indicated, continued usage of partner services fosters loyalty, which suggests a positive association between cross-buying and future patronage (Venkatesan & Kumar, 2004). This longitudinal approach demonstrates that LPs are profitable in the long-term. The customer experience with the LP may cement commitment to the core service.

The longitudinal view supports the notion that in general, companies use multiple techniques to build competitive advantage, LPs remain one such technique; strong value propositions could be another factor. Market dimensions determine what would benefit the company in the end (Singh et al., 2008). As the competition intensifies in the airline industry, the LP becomes

instrumental in the retention of customers and the differentiation of the company from its competition.

5.7 Discussion pertaining to Hypothesis 6

- *Hypothesis 6:* Bonus points accumulated through promotions have insignificant or no positive correlation with an increase with the normal usage and increased usage of the core service.

Except in categories related to flying (Table 4 category coefficients A: 2.7, $p < .01$; B: .995 , $p < .01$), bonus or promotion points accumulated had a negative relationship with the points accumulated through normal usage (categories coefficient C -.007; D: .078). This fact demonstrates limitations in the notion that companies employ promotions and rewards to enhance and reinforce each other's impact and grow the brand (Kivetz et al., 2006).This result further highlighted low responsiveness of members to LP induced promotions (Dorotic et al., 2010).

The multi-partner LP offers various benefits such as networking, spillover effects from partner brands and cross-selling opportunities (Rese et al., 2008). Customers who are happy with the core provider also tend to increase their purchases with the complementary partners. Nonetheless, the collaborating partners should actively promote and encourage cross-purchasing to attain full potential, which tends to be high among complementary partners (Dorotic et al., 2010).

5.8 Conclusion

In general, the results proved that reinforcing effects exist between partners in a multi-partner LP. However, the impact across different tiers was not evident, nor conclusive. Furthermore, promotions appeared to achieve low responsiveness from members.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

Multi-vendor LPs have gained prominence, Locally, LPs have become popular and a few have multiple vendors participating. This study focussed on Voyager LP, operated by SAA. Over the years, numerous partners were invited to participate in the programme in an attempt to enhance the value derived by the member. Recently Total joined the programme; members can accumulate miles when buying fuel at Total filling stations. Since a filling station falls into the category of a non-complementary service, unlike a hotel, this prompted a need to research the existence of cross-buying effects between flying (SAA) and non-related services.

Voyager allows its members to earn and redeem miles from participating companies. As companies continue to benefit from participating in multi-vendor programmes, the concept would become attractive to other companies in order for them to remain competitive. Would this lead to increased cross-buying behaviour among participating companies? Given the prominence of Voyager in the market, what type of companies could be invited to join and what would drive other companies to participate?

6.1.1 Sub-problem 1

Do reinforcing effects exist to foster cross-buying of products and services among the vendors in a multi-vendor LP.

6.1.2 Sub-problem 2

Lemon and Wangenheim (2009) found that vendors in complementary industries (in this case other airlines, hotels and car hire companies) benefit from participating in a multi-vendor program. How do reinforcing effects compare among different categories of participating vendors?

6.2 Conclusions of the study

The research was a replication of a study performed in Europe, with the core service also being an airline. The results proved that reinforcing effects do exist between the core service (flying) and other services provided by participating vendors.

Lemon and Wangenheim (2009) concluded that providers who offer a service that is complementary to the core service would exhibit stronger cross-buying effects. The results of the research indicated that although the effect is positive it is much stronger between providers who offer non-complementary services. Furthermore, the bonus points do not seem to induce increased usage of the services across the providers.

The literature has highlighted that duration of membership induces cross-buying behaviour but this could not be conclusively proved in this research. The results supported the notion that initially the cross-buying increased as the membership duration increased, but it reaches a ceiling. Instead of membership duration, the rate at which a member accumulated the miles could be an ideal measure. This could reduce the ceiling effect of customers who have been members for a long time but hardly ever fly, or use other related services.

The results did not support the notion that members in different tiers behave differently. The cross-buying behaviour was not found to be significantly different across different tiers. However, the small sample size may have imposed a limitation to the model since this test was performed on the data reflecting members who have accumulated points across all categories.

6.3 Recommendations

As Lemon and Wangenheim (2009) indicated, what truly makes a great LP partner remains a very important question. As more service providers introduce their own LPs, convergence is bound to happen since consumers would prefer to hold fewer membership cards.

This research may have proved that not only members that exhibit a strong fit induce good cross-buying; but also other factors should be taken into consideration. For example, members flying short flights could return home on the same day, eliminating the use of a hotel. Business people could be using a corporate credit card to pay for services and in some instances, points obtained may not accrue to the member.

The results confirmed that it was a good idea for Total to participate in the Voyager programme and other service providers could find it lucrative to participate in existing LPs.

6.4 Suggestions for further research

This study analysed a single multi-vendor LP, though Voyager's design represents a typical multi-vendor scheme further research through replication of this study is still necessary to identify ideal partners for an LP. Another point to explore is the nature of promotions to be run in collaboration with the members.

Further studies should also be carried out to evaluate the impact of the points redemption method on the overall attractiveness of the scheme. This should be coupled with the overall accumulation of points that vary with different segments of members.

REFERENCES

Allaway, A., Gooner, R., Berkowitz, D, &Davis, L. (2006). Driving and exploring behavior segments within a retail loyalty card program. *European Journal of Marketing*, *40*(11/12), 1317-1339.

AMA (American Marketing Association). (n.d.). *Frequent shopper programme*. Retrieved 17 May, 2015 from https://www.ama.org/resources/Pages/Dictionary.aspx?dLetter=F

Anderson, E. & Sullivan, M. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science,* 12(2), 125-143.

Beirne, M. (2008, 22 August). Hotel loyalty programs increase in popularity. *Adweek,* Retrieved 27 July 2015, from http://www.adweek.com/news/advertising-branding/hotel-loyalty-programs-increase-popularity-104476

Benavent, C., Crie, D. & Meyer-Waarden, L. (2000). *Analysis of the efficiency of loyalty programs*. Paper presented at 3rd AFM Conference about Retailing. St. Malo, France.

Berman, B. (2006). Developing and effective loyalty program. *California Management Review*, *49*(1), 123-148.

Blattberg, R., Kim, B. & Neslin, S. (2008). *Database Marketing: analyzing and managing customers*. New York, Springer.

Bolton, R. & Lemon, K. (1999). A dynamic Model of customer's usage of services; Usage as an Antecedent and consequence of satisfaction. *Journal of Marketing Research, 36*(2)*, 171-186.*

Bolton, R., Kannan, P. & Bramlett, M. (2000). Implications of loyalty program membership and service experiences for customer retention and value. *Journal of the academy of Marketing Science*, *28*(1), 95-108.

Bolton, R., Lemon, K., & Verhoef, P. (2004). The Theoretical Underpinnings of Customer Asset Management. *Journal of the academy of Marketing Science, 32*(3), 271-292.

Bridson, K., Evans, J. & Hickman, M. (2008). Assessing the relationship between loyalty and program attributes, store satisfaction and store loyalty. *Journal of Retailing and consumer Services*, *15*(5), 364-374.

Carlsson, F. & Lofgren, A. (2006). Airline choice, switching costs and frequent flyer programmes. *Applied Economics, 38*(13), 1469-1475.

Cigliano, J., Georgiandis, M., Pleasance, D. & Whalley, S. (2000). The price of loyalty*. McKinsey Quarterly*, *4*, 68-77.

Dawar, N. (2013). When marketing is strategy. *Harvard Business Review, 91*(12), 100-108.

De Wulf, K., Odekerken-Schroder, G. & Iacobucci, D. (2001). Investments on consumer relationships: a cross-country and cross-industry exploration. *Journal of Marketing, 65*(4), 33-50.

Dekay, F., Toh, R. & Raven, P. (2009). Loyalty programs: airlines outdo hotels. *Cornell Hospitality Quarterly, 50, 371-382.*

Demoulin, N., & Zidda, P. (2008). On the impact of loyalty cards on store loyalty: does the customer's satisfaction with the reward scheme matter? *Journal of retailing and consumer services, 38*(4), 71-82.

Demoulin, N., & Zidda, P. (2009). Drivers of customers' adoption and adoption timing of new loyalty card in the grocery retail market. *Journal of Retailing, 85*(3), 391-405.

Dholakia, M. (2006). How Customer self-determination influences relational marketing outcomes: evidence from longitudinal field studies. *Journal of Marketing Research, 43*(1), 109-120.

Dick, A. & Basu, K. (1994). Customer loyalty: toward an integrated conceptual framework. *Journal of the academy of Marketing Science, 22*(2), 99-113.

Dorotic, M., Bijmolt, T. & Verhoef, P. (2012). Loyalty programmes: Current knowledge and research directions. *International Journal of Management reviews, 14*(3), 217-237.

Dorotic, M., Fok, D., Verhoef, P. & Bijmolt, T. (2010). Do vendors benefit from promotions in a multi-vendor loyalty program? *Marketing Letters, 22*(4), 341-356.

Dowling, G. R. & Uncles, M. (1997).Do customer loyalty programs really work? *Sloan Management Review, 38*(4), 71-82.

Dréze, X. & Nunes, J. (2007). *Recurring goals: the effect of divisibility and goal attainment on self-efficacy and effort*. Marshal Research Paper Working paper. Los Angeles, Marshal School of Business.

East, R., Harris, E., Wilson, G. & Hammond, K. (1995). Correlates of First-Brand Loyalty. *Journal of Marketing Management, 11*(5), 487-497*.*

Evanschitzky, H. & Wunderlich, M. (2006). An examination of moderator effects in the four-stage loyalty model. *Journal of service Research, 8*(4), 330-345.

Evanschitzky, H., Ramaseshan B., Woisetschlager, M., Richelsen, V., Blut, M. & Backhaus, C. (2012). Consequences of customer loyalty program and to the company. *Journal of the Academy Marketing Science, 40*(5), 625-638.

Fournier, S., Dobscha, S., & Mick, D. (1998) Preventing the premature death of relationship marketing. *Harvard Business Review, 76*(1), 42-45.

Furinto, A., Pawitra, T. & Balqiah, T. (2009). Designing competitive loyalty programs: how type of program affect customer equity. *Journal of Targeting, Measurement and analysis in marketing, 17*(4), 307-319.

Goodwin, C. & Gremler, D. (1996). Friendship over the counter: How social aspects of service encounters influence consumer service loyalty. *Advances in services marketing and management, 5*(1), 247-282.

Gwinner, K., Gremler, D., & Bitner, M. (1998). Relational benefits in services industries: the customer's perspective. *Journal of the Academy of Marketing Science, 26*(2), 101-114.

Hair, J., Black. W., Babin, B., Anderson, R. & Tathan, R. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Hansen, J., Deitz, G. & Morgan, R. (2010). Taxonomy of service based loyalty program members. *Journal of Services Marketing, 24*(4), 271-282.

Hennig-Thurau, T., Gwinner, K., & Gremler, D. (2002). Understanding relationship marketing outcomes: an integration of relational benefits and relationship quality. *Journal of service Research, 4*(3), 230-247.

Henseler, J., Ringle, C. & Sinkovics, R. (2009). The use of partial least squares path modelling in international marketing. *Advances in International Marketing, 20*(1), 277-320.

Jones, M., Mothersbaugh, D. & Beatty, S, (2000). Switching barriers and purchases intentions in services. *Journal of Retailing*, 76(2), 259-274.

Keh, H. & Lee, Y. (2006). Do reward programs build loyalty for service? The moderating effect of satisfaction on type and timing of rewards. *Journal of Retailing, 82*(2), 127-136.

Kim, D., Shi, M. & Srinivasan, K. (2001). Reward programs and tacit collusion. *Marketing Science,* 20(2), 99-120.

Kivetz, R. (2003). The effects of effort and intrinsic motivation on risky choice. *Marketing Science, 22*(4), 477-502.

Kivetz, R. (2005). Promotion reactance: the role of effort reward congruity. *Journal of Marketing Research*, *31*(4), 725-736.

Kivetz, R., Urminsky, O. & Zheng, Z. (2006). The goal gradient hypothesis resurrected: Purchase acceleration, illusionary goal progress, and customer retention. *Journal of Marketing Research, 43(1), 39-58.*

Klemperer, P. (1995). Competition when consumers have switching costs: an overview with applications to industrial organisation, macroeconomics and international trade. *Review of Economic Studies, 62*(4), 515-539.

Kopalle, K. & Neslin, A. (2001). *The economic viability of frequency reward programs in a strategic competitive environment* (Working Paper 01-02). Tuck School of Business, Dartmouth.

Kumar, V. & Reinartz, W. (2006). *Customer relationship management a databased approach*. New York, Riley.

Kumar, V. & Shah, D. (2004). Building and sustaining profitable customer loyalty for the 21st century. *Journal of Retailing, 80*(4), 317-329.

Lal, R. & Bell, D. (2003). The impact of frequent shopper programs in grocery retailing. *Quantitative Marketing and Economics*, *1*(2), 179-202.

Leenheer, J. & Bijmolt, T. (2008). Which retailers adopt a loyalty program? An empirical study. *Journal of Retailing and Consumer Services, 15*(6), 429-442.

Leenheer, J., Van Heerde, H., BIjmolt, T. & Smidts, A. (2007). Do loyalty program really enhance behavioural loyalty? An empirical analysis accounting for self-selecting members. *International Journal of Research in Marketing, 24*(1), 31-47.

Lemon, K. & Wangenheim, F. (2009). The reinforcing Effects of Loyalty Program Partnerships and Core service Usage. *Journal of Service Research, 11*(4), 210-228.

Liu, Y. (2007). The long-term impact of loyalty programs on consumer purchase behavior and loyalty*. Journal of Marketing, 71*(4), 19-35.

Liu, T. & Brock, L. (2010). Antecedents of redemption of reward points: credit card market in China and international comparison. *Journal of Marketing,* 22(1), 33-45.

Liu, Y. & Yang, R. (2009). Competing loyalty programs: impact of market saturation, market share, and category expandability*. Journal of Marketing, 73*(1), 93-108.

Martin, J., Roman, C., & Espino R. (2011). Evaluating frequent flyer programs from the air passengers' perspective. *Journal of Air Transport Management,* 17, 364-368.

Mela, C., Gupta, S. & Lehmann, D. (1997). The long-term impact of promotion and advertising on customer brand choice. *Journal of Marketing Research, 34*(2), 248-261.

Melancon, J.P., Noble, S. & Noble, C. (2010). Managing rewards to enhance relational worth. *Journal of the Academy of Marketing Science, 39*(3), 341-362.

Meyer-Waarden, L (2006). The effects of loyalty programs on customer lifetime duration and share of wallet. *Journal of Retailing, 83*(2), 223-236*.*

Meyer-Waarden, L. (2008). The influence of loyalty programme membership on customer purchase behavior. *European Journal of Marketing, 42*(1/2), 87-114*.*

Mikulic, J., & Prebezac, D. (2011). What drives passenger loyalty to traditional and low-cost airlines? A formative partial least squares approach. *Journal of Air Transportation Management, 17*(6), 237-240.

Mimouni-Chaabane, A. & Volle, P. (2010). Perceived benefits of loyalty programs: scale development and implications for relational strategies. *Journal of Business Research, 63*(1), 32-37*.*

Omar, N. & Musa, R. (2010). Measuring service quality in retail Loyalty Programmes (LPSQual) – Implications for retailers' retention strategies. *International Journal of Retail & Distribution Management, 39*(10), 759-784.

Parasuraman, A. & Grewal, D. (2000). The Impact of technology on the quality-Value-Loyalty chain: A research agenda. *Journal of the Academy of Marketing Science, 28*(1), 168-174.

Porter, M. (1980). *Competitive Strategy.* New York: Free Press.

Rechinhheld, F. & Sasser, E. (1990). Zero-defections: quality comes to Service, *Harvard Business Review, 68*(5), 105-111.

Rese, M., Wilke, A. & Schimmelpfening, H. (2008). *Customer loyalty through reward programs: the economic perspective*. Working paper. Ruhr-UNiversität Bochum, Germany.

Reynolds , K. & Beatty, S. (1999). A relationship customer typology. *Journal of Retailing*, *75*(4), 509-524.

Roehm, M. & Roehm, H. Jr. (2010). The influence of redemption time frame on responses to incentives. *Journal of Academy of Marketing Science, 39*(3), 363-375.

Rowley, J. (2005). Building brand webs: customer relationship management through the Tesco Clubcard loyalty scheme. *International Journal of Retailing and Distribution Management, 33*(3), 194-206.

SAA (South African Airways). (n.d.). *Spending Miles*. Retrieved 17 May 2015, from https://www.flysaa.com/za/en/voyager/AboutVoyager/flysaa_VoyagerProgrammeOverview.html

Sharp, B. & Sharp A. (1997). Loyalty programs and their impact on repeat-purchase loyalty patterns. *International Journal of Research Marketing. 14*(5)*,* 473-486*.*

Singh, S., Jain, D. & Krishnan, T. (2008). Research Note-Customer loyalty programs: are they profitable. *Management Science, 54*(6), 1205-1211.

Star Alliance. (n.d.). *About*. Retrieved 17 May 2015, from http://www.staralliance.com/en/about/

Stauss, B., Schmidt, M. & Schoeler, A. (2005). Customer frustration in loyalty programs. *International Journal of Service Industry Management,* 16(3), 229-252.

Steffes, M., Murthi, E., Rao, B. & Ram, C. (2008). Acquisition, affinity and rewards: do they stay or do they go? *Journal of financial services Marketing, 13*(3), 221-233.

Steyn, P., Pitt, L., Strasheim, A., Boshoff, C. & Abratt, R. (2010). A cross-cultural study of the perceived benefits of retailer loyalty schemes in Asia. J*ournal of Retailing and consumer services*, *17*(5), 355-373.

Suzuki, Y. (2003). Airline frequent flyer programs: equity and attractiveness, *Transportation Research Part E: Logistics and Transportation review, 39*(4), 389-304*.*

Suzuki, Y., Crum, M. & Audino, M. (2003). Airport choice, leakage, and experience in single-airport regions. *Journal of Transportation Engineering, 129*(2), 212-218.

Taylor, G. & Neslin, S. (2003). The current and future sales impact of a retail frequency reward program. *Journal of Retailing, 81*(4), 293-305.

The Economist. (2002). Frequent-flyer economics, May 2, 62.

Total. (n.d.). *Fill up at Total and earn SAA voyager miles*. Retrieved 17 May 2015, from http://www.total.co.za/service-stations/loyalty-programme/SAA-voyager.html

Turner, J. & Wilson, K. (2006). Grocery loyalty: Tesco clubcard and its impact on loyalty. *British Food Journal, 108*(11), 958-964.

Uncles, M., Dowling, G. & Hammond, K. (2003). Customer loyalty and customer loyalty Programs. *Journal of Consumer Marketing, 20*(4), 294-316.

Uncles, M., Enrenberg, A. & Hammond, K. (1995). Pattern and buyer Behaviour: regularities, models and extensions. *Marketing Science*, *14*(3), 71-78.

Venkatesan, R. & Kumar, V. (2004). A customer lifetime value framework for customer selection and resource allocation strategy. *Journal of Marketing, 68*(4), 106-125.

Verhoef, P. & Hoekstra, J. (1999). Status of database marketing in Dutch fast moving consumer goods industry. *Journal of Market-focussed Management, 3*(3-4), 313-332.

Verhoef, P., Langerak, F., & Donkers, B. (2007). Understanding brand and dealer retention in the new car market: the moderating role of brand tier. *Journal of Retailing*, *83*(1), 97-113.

Verhoef, P., van Doorn, J. & Dorotic, M. (2007). Customer value management: an overview and research agenda. *Journal of research and management, 3*(2), 105-120.

Vesel, P. & Zabkar, V. (2010). Relationship quality evaluation in retailers' relationships with consumers. *European Journal of Marketing, 44*(9/10), 1334-1365.

Wagner, T., Hennig-Thurau, T. & Rudolph, T. (2009). Does customer demotion jeopardize loyalty? *Journal of Marketing, 73*(3), 69-85.

Wangenheim, F. & Bayon, T., (2007). Behavioral consequences of overbooking service capacity. *Journal of Marketing, 71*(4), 36-47.

Washburn, J., Till, B. & Priluck, R. (2004). Brand alliance and customer-based brand equity effects. *Psychology & Marketing, 21*(7), 487-508.

Wendlandt, M. & Schrader, U. (2007). Consumer reactance against loyalty programs. *Journal of consumer Marketing*, *24*(5), 293-304.

Yang, Z. & Peterson, R. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology and Marketing, 21*(10) 799-822.

Yi, Y. & Jeon. H, (2003). Effects of Loyalty programs on value perception, program loyalty, and brand loyalty. *Journal of the Academy of Marketing Science, 31*(3), 229-240.

Zeithaml, V. (2000). Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science, 28*(1), 67-85.

Zhang, J. & Wedel, M. (2009). The effectiveness of customized promotions in online and offline stores. *Journal of Marketing Research*, *46*(2), 190-206.

Zhang, J., Krishna, A. & Dhar, K. (2000). The optimal choice of promotional vehicles: front-loaded or rear-loaded incentives? *Management Science, 46*(3), 348-362.

APPENDIX A: Results

Dependent Variable: CORE

Method: Panel Generalized Method of Moments

Date: 09/24/15 Time: 05:15

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

2SLS instrument weighting matrix

Instrument specification: C CORE(-1) COREB CBUYA CBUYB CBUYC CBUYD DUR

Constant added to instrument list

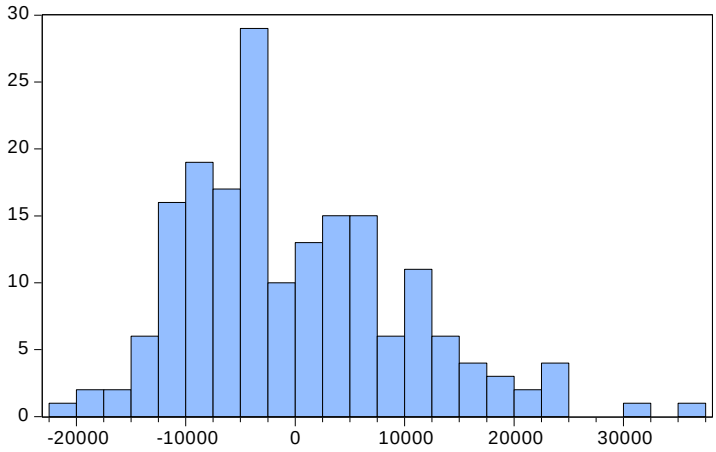
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23423.57	3276.691	7.148545	0.0000
CORE(-1)	0.103539	0.045381	2.281569	0.0238
COREB	0.650766	0.036451	17.85315	0.0000
CBUYA	-0.358135	0.116655	-3.070035	0.0025
CBUYB	-0.031346	0.150951	-0.207659	0.8357

CBUYC	-0.992779	0.705493	-1.407213	0.1612
CBUYD	0.008296	0.007427	1.116998	0.2656
DUR	-412.1398	159.1925	-2.588940	0.0105

Effects Specification

Period fixed (dummy variables)

R-squared	0.886831	Mean dependent var	43703.82
Adjusted R-squared	0.878843	S.D. dependent var	30346.97
S.E. of regression	10563.05	Sum squared resid	1.90E+10
Durbin-Watson stat	1.901343	J-statistic	3.51E-25
Instrument rank	13		



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	-4.37e-13
Median	-2536.053
Maximum	37249.83
Minimum	-20692.33
Std. Dev.	10208.88
Skewness	0.745283
Kurtosis	3.585379
Jarque-Bera	19.55396
Probability	0.000057

	CORE	CORE(-1)	COREB	CBUYA	CBUYB	CBUYC	CBUYD	DUR
CORE	1.000000	0.746421	0.924964	-0.113549	0.020838	0.070265	0.362211	0.132977
CORE(-1)	0.746421	1.000000	0.788390	-0.033860	0.026333	0.106065	0.268124	0.202134
COREB	0.924964	0.788390	1.000000	-0.043521	0.048228	0.145066	0.355035	0.234669
CBUYA	-0.113549	-0.033860	-0.043521	1.000000	-0.079665	0.020649	0.023247	-0.116219
CBUYB	0.020838	0.026333	0.048228	-0.079665	1.000000	0.216224	-0.145076	0.156604
CBUYC	0.070265	0.106065	0.145066	0.020649	0.216224	1.000000	-0.025224	0.006952
CBUYD	0.362211	0.268124	0.355035	0.023247	-0.145076	-0.025224	1.000000	0.015925
DUR	0.132977	0.202134	0.234669	-0.116219	0.156604	0.006952	0.015925	1.000000

Dependent Variable: CBUYA

Method: Panel Generalized Method of Moments

Date: 09/24/15 Time: 04:35

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

2SLS instrument weighting matrix

Instrument specification: C CORE CBUYA(-1) CBUYAB DUR

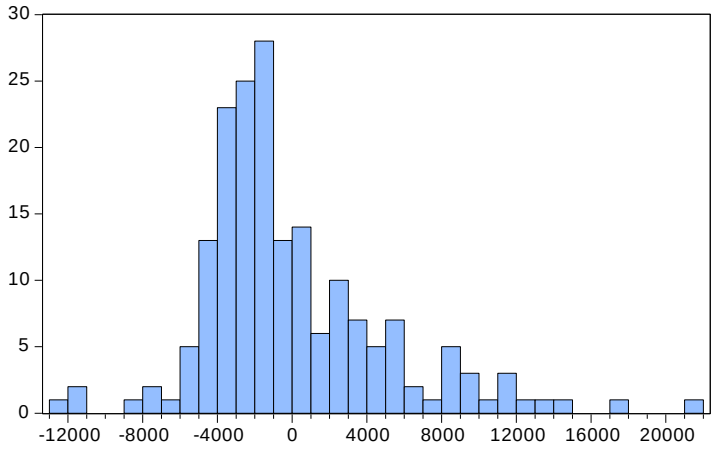
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6032.797	1498.067	4.027054	0.0001
CORE	-0.026653	0.013136	-2.028952	0.0440
CBUYA(-1)	0.207530	0.044879	4.624244	0.0000
CBUYAB	2.778064	0.297352	9.342675	0.0000
DUR	-90.42459	74.96944	-1.206153	0.2294

Effects Specification

Period fixed (dummy variables)

R-squared	0.465699	Mean dependent var	6640.738
Adjusted R-squared	0.437903	S.D. dependent var	6877.556
S.E. of regression	5156.320	Sum squared resid	4.60E+09
Durbin-Watson stat	1.091467	J-statistic	2.57E-26
Instrument rank	10		



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	9.94e-15
Median	-1310.893
Maximum	21440.89
Minimum	-12125.73
Std. Dev.	5027.213
Skewness	1.169186
Kurtosis	5.306612
Jarque-Bera	82.26188
Probability	0.000000

	CBUYA	CORE	CBUYA(-1)	CBUYAB	DUR
CBUYA	1.000000	-0.113549	0.414398	0.577411	-0.116219
CORE	-0.113549	1.000000	-0.103880	0.042725	0.132977
CBUYA(-1)	0.414398	-0.103880	1.000000	0.198576	-0.077783
CBUYAB	0.577411	0.042725	0.198576	1.000000	-0.022025
DUR	-0.116219	0.132977	-0.077783	-0.022025	1.000000

Dependent Variable: CBUYB

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:21

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

2SLS instrument weighting matrix

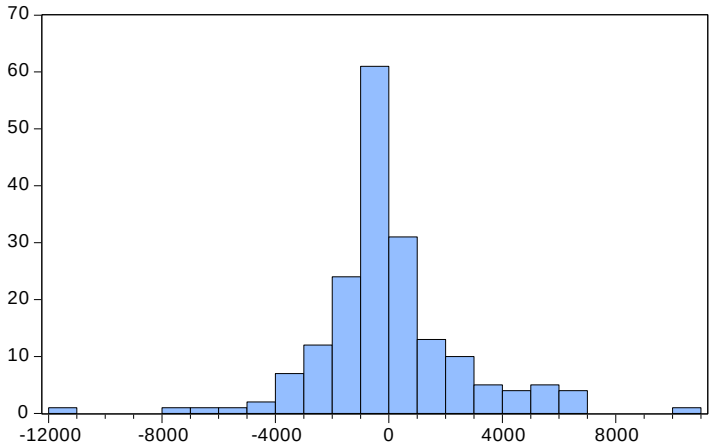
Instrument specification: C CORE CBUYB(-1) CBUYBB DUR

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1462.185	707.2794	2.067337	0.0401
CORE	-0.017333	0.006797	-2.549909	0.0116
CBUYB(-1)	0.207167	0.050175	4.128911	0.0001
CBUYBB	0.995727	0.067867	14.67179	0.0000
DUR	-2.988400	37.17720	-0.080383	0.9360

R-squared	0.784408	Mean dependent var	4733.710

Adjusted R-squared	0.779563	S.D. dependent var	5554.733
S.E. of regression	2607.987	Sum squared resid	1.21E+09
Durbin-Watson stat	1.361064	J-statistic	1.43E-27
Instrument rank	5		



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	2.19e-12
Median	-371.3346
Maximum	10818.51
Minimum	-11723.86
Std. Dev.	2579.169
Skewness	0.251623
Kurtosis	6.955615
Jarque-Bera	121.2386
Probability	0.000000

	CBUYB	CORE	CBUYB(-1)	CBUYBB	DUR
CBUYB	1.000000	0.020838	0.718612	0.863277	0.156604
CORE	0.020838	1.000000	-0.080492	0.178955	0.132977
CBUYB(-1)	0.718612	-0.080492	1.000000	0.683250	0.157820
CBUYBB	0.863277	0.178955	0.683250	1.000000	0.188598
DUR	0.156604	0.132977	0.157820	0.188598	1.000000

Dependent Variable: CBUYC

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:23

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

2SLS instrument weighting matrix

Instrument specification: C CORE CBUYC(-1) CBUYCB DUR

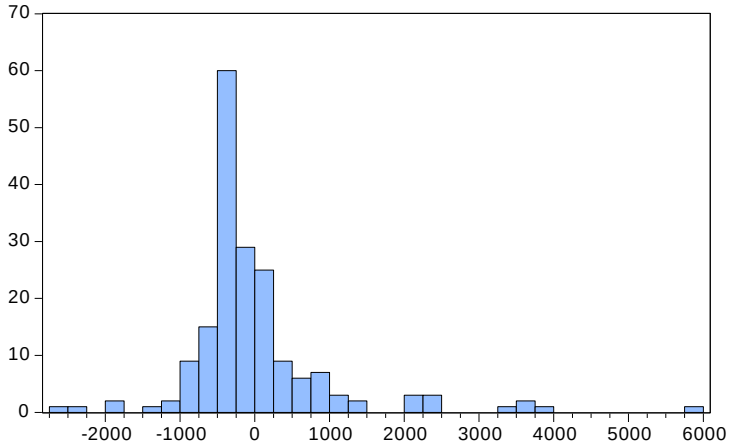
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	257.1803	271.7050	0.946543	0.3452
CORE	0.001088	0.002481	0.438593	0.6615
CBUYC(-1)	0.438567	0.048767	8.993204	0.0000
CBUYCB	-0.007207	0.018322	-0.393357	0.6945
DUR	5.351411	14.06959	0.380353	0.7041

R-squared	0.317197	Mean dependent var	779.2350
Adjusted R-squared	0.301853	S.D. dependent var	1200.083
S.E. of regression	1002.731	Sum squared resid	1.79E+08

Durbin-Watson stat	3.493031	J-statistic	3.42E-28

Instrument rank 5



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	8.79e-13
Median	-227.8138
Maximum	5885.879
Minimum	-2594.676
Std. Dev.	991.6512
Skewness	2.388410
Kurtosis	12.47142
Jarque-Bera	858.0098
Probability	0.000000

	CBUYC	CORE	CBUYC(-1)	CBUYCB	DUR
CBUYC	1.000000	0.070265	0.561304	-0.048264	0.006952
CORE	0.070265	1.000000	0.068634	-0.049118	0.132977
CBUYC(-1)	0.561304	0.068634	1.000000	-0.041002	-0.035869
CBUYCB	-0.048264	-0.049118	-0.041002	1.000000	0.018264
DUR	0.006952	0.132977	-0.035869	0.018264	1.000000

Dependent Variable: CBUYD

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:25

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

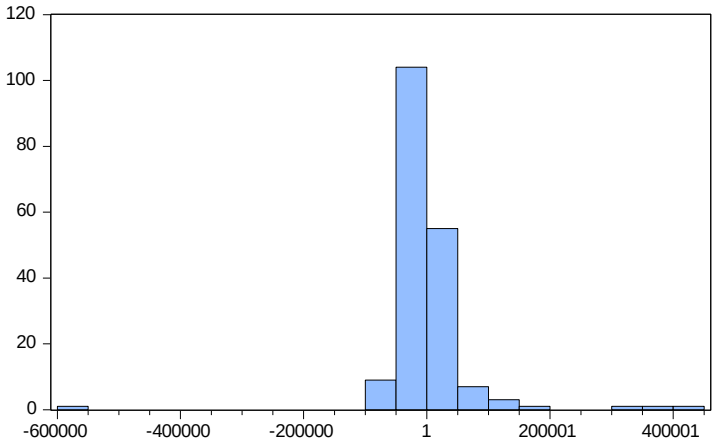
2SLS instrument weighting matrix

Instrument specification: C CORE CBUYD(-1) CBUYDB DUR

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15652.28	19788.58	0.790975	0.4300
CORE	0.692799	0.188472	3.675879	0.0003
CBUYD(-1)	0.721359	0.049745	14.50098	0.0000
CBUYDB	-0.078231	0.273723	-0.285804	0.7754
DUR	-1375.302	1050.951	-1.308627	0.1923

R-squared	0.606329	Mean dependent var	62638.49
Adjusted R-squared	0.597482	S.D. dependent var	116109.5
S.E. of regression	73664.87	Sum squared resid	9.66E+11
Durbin-Watson stat	0.236022	J-statistic	3.26E-27
Instrument rank	5		



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	-1.42e-10
Median	-5351.782
Maximum	407651.2
Minimum	-588394.1
Std. Dev.	72850.87
Skewness	-0.557427
Kurtosis	35.52130
Jarque-Bera	8073.941
Probability	0.000000

	CBUYD	CORE	CBUYD(-1)	CBUYDB	DUR
CBUYD	1.000000	0.362211	0.757881	-0.075080	0.015925
CORE	0.362211	1.000000	0.266945	0.065927	0.132977
CBUYD(-1)	0.757881	0.266945	1.000000	-0.086495	0.080701
CBUYDB	-0.075080	0.065927	-0.086495	1.000000	0.182344
DUR	0.015925	0.132977	0.080701	0.182344	1.000000

Dependent Variable: COREFLY

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:31

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

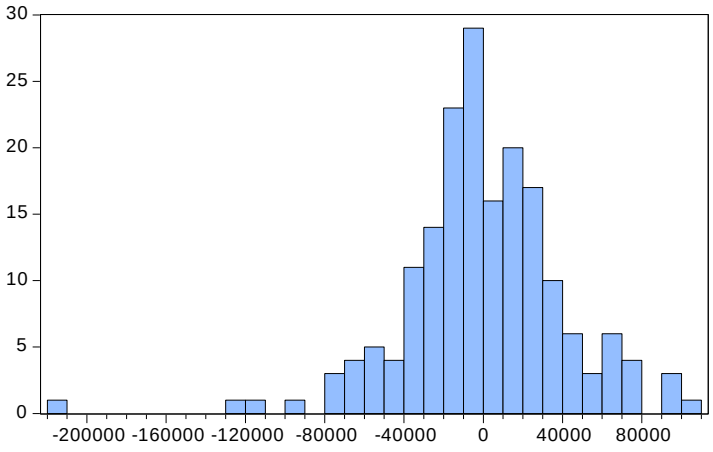
2SLS instrument weighting matrix

Instrument specification: C COREFLY(-1) CBUYC CBUYD DUR

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11547.05	10904.31	1.058944	0.2911
COREFLY(-1)	0.771887	0.047949	16.09801	0.0000
CBUYC	2.005254	2.580731	0.777010	0.4382
CBUYD	0.094103	0.027226	3.456408	0.0007
DUR	79.00797	591.9289	0.133475	0.8940

R-squared	0.666415	Mean dependent var	98192.89
Adjusted R-squared	0.658919	S.D. dependent var	70438.89
S.E. of regression	41137.81	Sum squared resid	3.01E+11
Durbin-Watson stat	1.853239	J-statistic	1.07E-25
Instrument rank	5		



Series: Standardized Residuals	
Sample 2010 2015	
Observations 183	
Mean	1.77e-10
Median	-2267.316
Maximum	108990.4
Minimum	-212842.0
Std. Dev.	40683.24
Skewness	-0.699899
Kurtosis	7.029276
Jarque-Bera	138.7331
Probability	0.000000

Dependent Variable: CBUYC

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:33

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

2SLS instrument weighting matrix

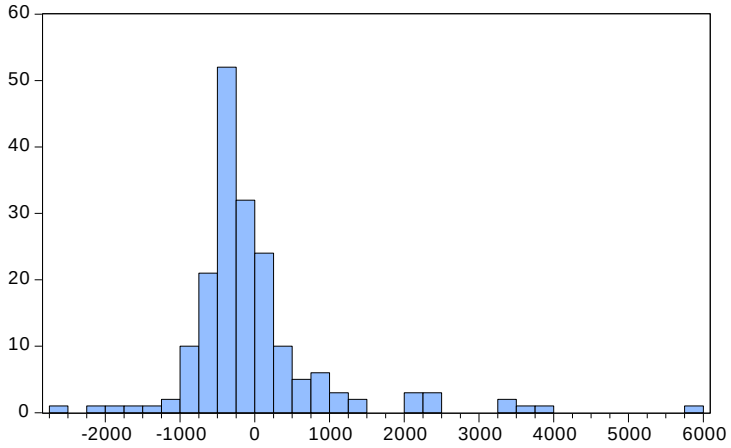
Instrument specification: C COREFLY CBUYC(-1) CBUYCB DUR

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	232.6070	265.7725	0.875211	0.3826

COREFLY	0.001249	0.001087	1.149115	0.2521
CBUYC(-1)	0.432317	0.048958	8.830318	0.0000
CBUYCB	-0.006217	0.018282	-0.340083	0.7342
DUR	2.783843	14.20710	0.195947	0.8449

R-squared	0.321492	Mean dependent var	779.2350
Adjusted R-squared	0.306245	S.D. dependent var	1200.083
S.E. of regression	999.5724	Sum squared resid	1.78E+08
Durbin-Watson stat	3.473120	J-statistic	3.01E-27
Instrument rank	5		



Series: Standardized Residuals
Sample 2010 2015
Observations 183

Mean	-2.48e-13
Median	-214.0253
Maximum	5862.750
Minimum	-2573.629
Std. Dev.	988.5270
Skewness	2.399482
Kurtosis	12.52554
Jarque-Bera	867.4661
Probability	0.000000

Dependent Variable: CBUYD

Method: Panel Generalized Method of Moments

Date: 08/18/15 Time: 18:35

Sample (adjusted): 2010 2015

Periods included: 6

Cross-sections included: 121

Total panel (unbalanced) observations: 183

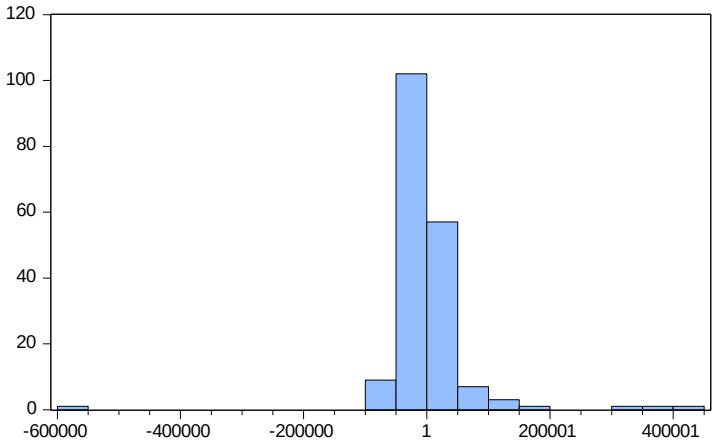
2SLS instrument weighting matrix

Instrument specification: C COREFLY CBUYD(-1) CBUYDB DUR

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	21561.88	19509.20	1.105216	0.2706
COREFLY	0.288099	0.082489	3.492551	0.0006
CBUYD(-1)	0.724749	0.049832	14.54379	0.0000
CBUYDB	-0.111635	0.275630	-0.405018	0.6860
DUR	-1598.011	1063.727	-1.502276	0.1348

R-squared	0.603608	Mean dependent var	62638.49
Adjusted R-squared	0.594701	S.D. dependent var	116109.5
S.E. of regression	73918.93	Sum squared resid	9.73E+11
Durbin-Watson stat	0.230024	J-statistic	1.82E-27
Instrument rank	5		



Series: Standardized Residuals	
Sample 2010 2015	
Observations 183	
Mean	-7.22e-11
Median	-7161.732
Maximum	404058.7
Minimum	-593214.8
Std. Dev.	73102.12
Skewness	-0.618915
Kurtosis	35.76167
Jarque-Bera	8195.799
Probability	0.000000