The Adoption and Effectiveness of Loyalty Programs in Retailing

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Proefschrift

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Chapter 1

Introduction

1.1 Loyalty Programs in Retailing

Consumers are nowadays likely to be confronted with loyalty programs. Many retail companies offer loyalty cards to their customers. Customers can use these loyalty cards to obtain discounts, to save for rewards, to participate in lotteries, etc. Retailers provide these benefits to strengthen customer-firm relationships and to make customers more loyal. Customers have enthusiastically entered loyalty programs. Almost 80% of all Dutch households have at least one supermarket loyalty card, and many households are members of multiple loyalty programs simultaneously (GfK 2002). But although loyalty cards have infiltrated customers' wallets, it is not evident whether loyalty program memberships actually affect purchase behavior (Dowling and Uncles 1997).

Loyalty programs are definitely not a typical Dutch phenomenon, as is sometimes suggested (e.g. Volkskrant 2000). Casino (grocery retailing, France), Kaufhof (department store, Germany), and Fnac (books and music store, Belgium) are just a few examples of European retailers that use loyalty programs. McKinsey reports that about half of the large retailers in the United Kingdom and the United States operate loyalty programs (Cigliano et al. 2000). In the United Kingdom, grocery retailers have competed fiercely to win consumers for their programs, which resulted in fairly advanced loyalty program designs. Consider the example of the British grocer Tesco that offers a club card with an extensive saving program (Van der Heijden 2003); Customers can save points by purchasing at Tesco or at one of its partners (about 10), by recycling old products or by making use of one of the several bonus offers. A wide range of redeeming possibilities exists, from beauty products to holiday trips. Furthermore, club card members receive personalized coupon mailings, they can join one of the special interest clubs (e.g. toddler club, wine club), or use a member website for online purchasing, special actions, forums and information. As such, Tesco uses its program as a multilateral tool to enhance relationships with its customers.

Recently, loyalty programs have appeared in South America as well. They have proved very successful there, because of a strong need for recognition characterizing the South-American population (Andruss 2000). Outside retailing, loyalty programs have appeared among airlines (frequent flyer programs), for financial products, car rentals, online stores, etc.

Academically, it is relevant to investigate how loyalty programs relate to a strategy of customer relationship management, and what they add to existing marketing-mix instruments. Several research questions can be raised in this respect. Which companies do adopt loyalty programs? And which customers? Are loyalty programs effective in making customers loyal, and do they stimulate customer profitability? How do competitive loyalty programs affect a company? What is the best way to design a loyalty program?

This chapter provides a broad discussion of loyalty programs. Section 1.2 starts with a discussion of customer relationship management and its application in consumer markets. Section 1.3 continues with a discussion of relational marketing instruments, of which loyalty programs are an example. Section 1.4 defines loyalty programs, describes their key features and proposes a framework for loyalty program analysis. In section 1.5 the central problem definition of this dissertation is presented. Section 1.6 provides a brief overview of existing research on loyalty programs, and finally Section 1.7 gives an outline of the rest of this dissertation.

1.2 Customer Relationship Management

1.2.1 Definition

Customer relationship management (CRM) is *the strategy that aims to achieve a continuing dialogue with customers, across all their contact and access points, with personalized treatment of the most valuable customers, to increase customer retention and the effectiveness of marketing initiatives* (Day and Van den Bulte 2002, p.5) The base for CRM lies in the insight that the long-term value of a company is determined by the value of its customer relationships (Rust, Zeithaml, and Lemon 2000). This belief has grown considerably in both marketing practice and research (see for example the special issue on Customer Equity

Management in Journal of Services Research, 2002). It has initiated a shift from a transaction-oriented towards a relationship-oriented marketing approach. Relationship marketing contains establishing, developing, and maintaining successful relational exchanges (Morgan and Hunt 1994). Where companies traditionally maximized discrete transactions, under a relational approach a company aims to optimize a complete relational exchange. A relational exchange thus consists of an entire spell of customer purchases, where each discrete transaction is embedded in transactions in the past and the future (Dwyer, Schurr, and Oh 1987). From a relational perspective, some low-profit transactions are optimal, namely in case they will be compensated by incremental profits in the future. The move in strategic focus from transactions to relationships implies that the central focus is not on products or brands, but on customers. Companies thus organize their marketing efforts around customers rather than product lines (Berger et al. 2002). As such, customers are considered to be the central company asset on which a company must achieve competitive advantage (Srivastava, Shervani, and Fahey 2000).

1.2.2 Loyalty

Creating loyalty is at the heart of customer relationship management, based on the notion that it is less expensive to retain customers than to acquire new ones (Reichheld and Sasser 1990). Loyalty can be defined as *a deeply held commitment to repatronize consistently in the future, causing repetitive purchase behavior despite possible situational influences and marketing efforts having the potential to cause switching behavior* (e.g. Oliver 1999). Loyalty gives thus something of a guarantee of future earnings (Sharp and Sharp 1997). Behaviorally, loyalty is characterized by high retention rates, a high share-of-wallet, and cross-buying in several categories. Behavioral loyalty is the driver of customer profits, but customers are said to be only truly loyal if they are also attitudinal loyal. Attitudinal loyalty can be defined as a strong relative attitude towards the brand, which can be created through satisfaction, trust, perceived relationship quality, and commitment (Dick and Basu 1994). Typically, loyal customers are willing to pay higher prices, are less expensive to serve, and they spread positive word-of-mouth (Reichheld 1996).

1.2.3 Customer equity

A company that takes the value of its customer base as the central criterion aims to maximize the total value of its customer relationships, or its customer equity. The value of an individual customer relationship, measured as customer lifetime value, functions as the central optimization variable. Customer lifetime value is usually operationalized as the present value of all future earnings minus direct customer-related costs (Jain and Singh 2002). Customers account for earnings through the transactions they make. They can also contribute to earnings indirectly, by spreading word-of-mouth to other consumers or by giving feedback and advices to the company. The economic value of these indirect effects is difficult to quantify and therefore mostly ignored. Customer lifetime value depends both on the length of the relationship (duration), to its depth (intensity or usage level) and to its breadth (cross-buying) (Verhoef 2001). Further, transactions made now are preferred over transactions in the future.

Taking customers as the central profit drivers, it has become apparent to many companies that customers differ strongly in profitability, and that the customer profitability distribution is highly skewed (Dowling and Uncles 1997). In this respect the 80/20 law is often mentioned, which states that typically 80 percent of sales or profits come from only 20 percent of customers (Rust et al. 2000). Rust, Zeithaml, and Lemon (2000) speak of a customer pyramid with four customer tiers, labeled as platinum, gold, iron, and lead customers. The lead tier consists customers who are unprofitable, and rather cost the company money. A customer profitability analysis could thus make a company conclude that it should abandon certain customer relationships or stop investing in them. Further, it seems to make sense to concentrate marketing resources on the most profitable customers to gain their loyalty.

1.2.4 CRM in mass markets

Customer relationship management has first been introduced in the area of business-to-business markets and channel relationships. Companies started to create value-adding exchanges with customer-tailed services and interactions based on customer lifetime value maximization (Day 2000). Over time, exchanges could become more interactive or even collaborative, with a complete integration of a supplier with its customers, and the formation of business networks (Coviello et al. 2002).

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A next challenge has been to introduce CRM in consumer markets. Most consumer markets characterize as mass markets, which have the following characterizing features (Bhattacharya and Bolton 2000):

- Individual customers are anonymous to the firm.
- Limited direct contact exists between customers and the firm.
- Customer relationships are none-contractual and switching costs are low.
- Large customer bases with a limited profit per customer.

With the absence of customer-specific knowledge, marketers must assemble individual-level databases. Low switching costs enable customers to frequent several competitors more or less simultaneously. The combination of non-contractual customer relationships and low switching costs makes it unclear for companies which consumers are still their customers (Berger et al. 2002; Schmittlein, Morrison, and Colombo 2000). Therefore, a strong need exists for databases with industry-wide information (Bell et al. 2002). Further, marketing research is needed to assess the influence of marketing actions on customer level. It is important to focus not solely on income effects, but to account for additional costs made on a customer as well (Bell et al. 2002).

The next step is to invest in customer relationships, in such a way that customers perceive the quality of the relationship as more valuable and become more loyal (DeWulf, Odekerken-Schröder, and Iacobucci 2001). Companies can realize this by approaching customers in a more personalized and targeted way. However, in mass markets personal interactions or collaborative exchanges are most unlikely (Coviello et al. 2002). Furthermore, many available marketing-mix instruments are not appropriate to manage customer relationships. A company that wants to manage customer relationships thus needs appropriate marketing tools: relational marketing instruments. Furthermore, they should use the information from marketing databases to allocate resources as such that the value of the customer base is optimized (Berger et al. 2002).

1.3 Relational Marketing Instruments

1.3.1 Definition

Relational marketing instruments are *structured marketing efforts that specifically support customer relationships* (e.g. Bhattacharya and Bolton 2000). Rather than directly stimulating sales, they focus on the maintenance and development of customers (Bolton, Lemon, and Verhoef 2002). Key to these instruments is that they are targeted towards existing customers or even only towards specific customer groups for which a company perceives relational investments fruitful. The core goal of relational marketing instruments is to increase future earnings by stimulating customers' perceived future value of the company's offerings. In economic terminology, they try to change the customer's choice process from operating in a spot market to operating in a multi-period, contractual relationship market (Dowling and Uncles 1997; Lemon, Barnett White, and Winer 2002). This could be done either by giving explicit economic loyalty incentives or by enhancing commitment, trust or perceived relationship quality (Bolton et al. 2002; DeWulf et al. 2001).

Relational marketing instruments could apply to all 4 p's of the marketing-mix, and are often combinations of those. Direct mails, targeted promotions, and loyalty programs are relational marketing instruments that have received most attention in the marketing literature (Verhoef 2003). But given the definition proposed above, warranties, service call centers, or electronic customer forums can also be considered as relational marketing instruments (Bhattacharya and Bolton 2000). Of course, other marketing-mix elements such as price or product quality, could enhance customer relationships as well. However, relational marketing instruments are distinctive, because they are explicitly suited to leverage customer relationships in a direct and targeted manner.

1.3.2 Categorization

In order to categorize relational marketing instruments, existing research has considered the degree of relational value the instrument can offer. Berry (1995) distinguishes between three levels of relationship marketing: price incentives, social aspects, solutions to customer problems. For mass markets only price and social incentives are relevant, and as such a distinction can be made between economic (or price) and social instruments (Bolton et al.

2002; DeWulf et al. 2001). This does not mean that it is always obvious how to categorize a marketing instrument. Direct mails are considered as social instruments because they contain communicative elements (DeWulf et al. 2001), but the content of the mails could provide price incentives as well (e.g. coupons). Similarly, preferential treatment, the extent to which a retailer treats and serves its regular customers better than its non-regular customers, is considered as a social marketing tactic (DeWulf et al. 2001), but provides economic value also if its is given in the form of price differences or tangible rewards (e.g. saving programs or special shopping nights with lower prices). Therefore, we propose to discriminate between marketing instruments according to the degree of economic and social value provided, rather than to use a dichotomous categorization.

Relational marketing instruments could be considered as a form of defensive marketing, because they aim to enhance relationships with existing customers, rather than to attract new customers from the competition (Sharp and Sharp 1997). Stronger customer relationships make a company less vulnerable for competitive actions or new entrances in the market. However, relational instruments are not purely defensive in most cases, because customers are often not exclusive loyal to one company, but they rather give several suppliers a part of their total expenditures.

In this dissertation, we will focus on the specific relational marketing instrument of our interest: loyalty programs. A loyalty program is a very generic relational instrument, under which several marketing actions can be done. In fact, other relational instruments such a preferential treatment, direct mails, or targeted promotions often function as components of a loyalty program. Loyalty programs specifically aim to enhance customer loyalty, which we identified as a central driver of competitive advantage for customer-oriented organizations. Loyalty programs in its current form are relatively new, but have become widespread in many consumer markets during the past decades.

1.4 Loyalty Programs

1.4.1 Definition

Based on descriptions of loyalty programs in existing literature (Bolton, Kannan, and Bramlett 2000; Sharp and Sharp 1997), we use the following definition for loyalty programs:

A loyalty program is an integrated system of marketing actions that aims to make member customers more profitable by enhancing their loyalty.

A loyalty program contains the following critical elements:

- Customers must become *members* of the loyalty program in order to make use of the marketing actions offered through it.
- A loyalty program has an *infinite* or at least *long-term duration*. We use the term 'loyalty action' for programs with a limited duration (e.g. a temporary saving program).
- A loyalty program *rewards* program members for certain behavior in a *structural* way and give thus *incentives* to customers to show this behavior.
- A loyalty program is an entity under which several marketing actions can be pursued (e.g. targeted discounts, special shopping nights for members, mailings, saving programs).

Nowadays, most loyalty programs register customers that have subscribed as loyalty program members, and ask for identification at transactions e.g. with loyalty cards. This enables the company to track their members' purchase behavior, to differentiate between member and non-members (Van Heerde and Bijmolt 2004), and to provide individual member customers with special treatment.

1.4.2 Research framework

To understand and evaluate the operation of loyalty programs, four fundamental processes need to be investigated, represented graphically in Figure 1.1.

Figure 1.1 Framework for loyalty program analysis
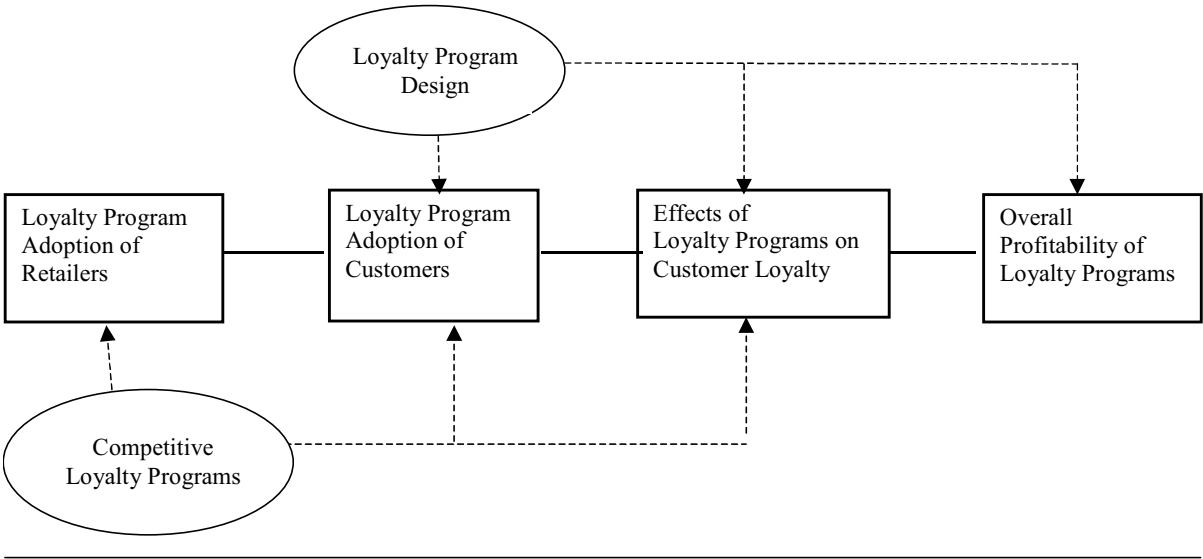
The first process consists of the supplier's initiation to adopt a loyalty program as part of its marketing-mix. In retail practice we observe both a substantial number of adopters and non-adopters of loyalty programs. Understanding which organizational and market factors drive loyalty program adoption, could improve insight in managerial decision making in relationship marketing. It could also provide guidance to companies in markets and areas, to which loyalty programs have not disseminated until now. After a loyalty program has been introduced, individual customers must decide whether or not they want to become member of the loyalty program. The second process thus consists of the loyalty program adoption of customers.

Only the subset of customers that decide to become loyalty program members are exposed to the loyalty programs' marketing actions. These marketing actions aim to affect member customers' loyalty. These effects on loyalty could both be behavioral and attitudinal in nature. Different aspects of behavioral loyalty can be targeted, such as retention, purchase quantities, share-of-wallets or number of transactions. The question when, how, and how much impact the marketing actions generate is of central importance to judge the usefulness of loyalty programs.

Recently, marketers have realized that the effects of a marketing instrument should not be measured not only in terms of its benefits, but also in terms of its profitability (Srivastava

et al. 2000). The overall profitability of a loyalty program is obtained by quantifying and comparing the benefits of the loyalty program with the related costs. The benefits of a loyalty program consist, first of all, of the effects generated by the marketing actions on customers' behavioral loyalty. An additional benefit is that the company obtains information on customer-specific purchase and response behavior of loyalty program members, which can be utilized to support further marketing efforts (Mauri 2003). The costs related to the loyalty program consist of fixed costs (launch costs, operation costs, administrative costs), and customer-specific costs (rewarding costs, costs of card issuance). At customer-level, the impact of a loyalty program can be measured by calculating the effects of direct benefits and costs on customer lifetime value.

Two important components in understanding the operation of loyalty programs are loyalty program design and competition (see Figure 1.1). Loyalty program design consists of two aspects: the process through which customers become loyalty program members, and the specification of the marketing actions towards program members. In retail practice, we observe that most loyalty programs have low membership requirements. A typical loyalty program does not ask for a membership fee, but it requires consumers to provide basic information for enrollment and to identify themselves at transactions. More variation exists for the second design aspect: the design of marketing actions towards members. In essence, a loyalty program seeks to enhance customer loyalty by rewarding certain customers by providing increased satisfaction and value (Bolton et al. 2000). So a marketing action is defined by the customers it selects, the reward that it provides, and the medium it uses for that. Examples of these three elements are given in Table 1.1.

Table 1.1 Marketing actions under a loyalty program

Selection based on:	Medium	Customer reward
Membership (all members)	Discounts	Lower prices
Customer characteristic	Saving points	Preferred treatment
Purchase behavior	Lotteries	Free products
	Mailings	Presents
		Information sources

Most basically, all customers that are program members are selected for a marketing action, which only creates discrimination between members and non-members. Many loyalty programs provide rewards such as informational websites, membership magazines, and specific price promotions to all their members. A company can also select certain customers for a marketing action based on known customer characteristics, e.g. socio-demographics or product interests. However, low entrance barriers ask for refined rewarding mechanisms to ensure that loyal customers are best-rewarded under the program. Selections made on base of purchase behavior best make use of profitability and loyalty differences, and provide as such purchase incentives. These behavioral selection rules can be based on total spending in a previous period, product categories purchased in, existence of a purchase event, transaction sizes, etc. A saving program selects customers based on accumulated purchases in the past for providing discounts or presents, using saving points as the medium to differentiate between customers. A saving (of frequency) program enables advanced incentive designs through usage of non-linear points schedules, bonus points on certain (high margin) products, etc.

Most firms offer a variety of marketing actions under the central entity of its loyalty program. A rich design improves the overall benefits to both customers and firm, and individual actions could enhance each other's effectiveness. Another possibility is to operate a loyalty program together with other partners, a so-called multi-vendor program (O'Brien and Jones 1995). The Tesco loyalty program mentioned before is an example of a multi-vendor program with an advanced loyalty program design. Loyalty program design potentially influences loyalty program's effects on customer loyalty, but also its costs and overall profitability of the program.

Competitive loyalty programs could play a role in different parts of the loyalty program framework (see Figure 1.1). The existence of competitive loyalty programs could influence a company's decision whether or not to adopt a loyalty program. When making a membership decision, a customer makes a trade-off between different competitive programs in terms of expected benefits and costs. Given the low entrance barriers of many loyalty programs, a customer can also decide to keep multiple memberships simultaneously. However, the existence of multiple memberships might reduce the effectiveness of individual loyalty programs.

1.5 Problem Definition

1.5.1 Problem statement

In the previous sections, we have discussed the relevance of academic research in the area of loyalty programs. As such, the central problem of this dissertation is defined as:

Which role can loyalty programs play in the marketing-mix of retailers?

The central problem statement will be answered through the following research questions:

1. *Which factors drive retailers to adopt loyalty programs?*
2. *Which factors drive customers to adopt retailers' loyalty programs?*
3. *Which effects do loyalty programs have on purchase behavior and profitability?*
4. *How does loyalty program design influence effectiveness?*
5. *How do competitors' loyalty programs influence effectiveness?*

The research questions closely follow the research framework in Figure 1.1: the first three research questions refer to the main flow chart of the figure and research questions four and five to the moderators 'loyalty programs design' and 'competitive loyalty programs'.

1.5.2 Demarcations

This dissertation focuses on loyalty programs in retailing. Loyalty programs are widely used in retailing, and most extant research uses retail applications. Though the insights that can be obtained from this dissertation are broader than retailing specifically, the choice for retailing limits the scope of this dissertation in at least two ways. First, customer-firm relationships in retailing are non-continuous and non-contractual. Customer decision-making and purchase patterns differ from relationships that are either contractual or continuous, e.g. financial services, telecommunications, etc (Reinartz and Kumar 2000). Second, we limit ourselves to settings in which consumer purchase behavior is not automatically registered, and where only loyalty programs make such registration possible through membership identification. Therefore, the loyalty program's benefits intrinsically differ from settings in which

registration already occurs as part of the normal operation (financial services, video rentals) or in which loyalty programs are not accompanied with registration possibilities (packaged goods) (Wansink 2003).

1.5.3 Managerial relevance

This dissertation has a clear managerial relevance. Loyalty programs are used in almost all sectors in retailing and many other consumer markets as well. The question whether or not to adopt a loyalty program is therefore relevant for every retailer. This dissertation could provide guidance in making the right decision. Further, many retailers have adopted loyalty programs, but do not use their programs optimally. Too many retailers have used their programs as short-term promotional tools rather than relational instruments (O'Brien and Jones 1995). Many retailers that have adopted loyalty programs a few years ago are currently reconsidering their programs. Options are either to optimize the program design or to abandon the program (Adformatie 2003). Given the complexity of loyalty programs, it is challenging to assess their effectiveness. This dissertation provides measurement tools and empirical insights on loyalty programs effectiveness. We also study the influence of design elements that are currently used in practice, on effectiveness.

1.6 Existing Research on Loyalty Programs

1.6.1 Introduction

In the last ten years, the topic of loyalty programs has received considerable attention in academic research. This section gives a brief overview of existing research on loyalty programs. Specific details of relevance to our studies will be discussed in the respective chapters. We follow the research framework proposed in the previous section (Figure 1.1) to structure the overview. A systematic overview of studies on loyalty programs can be found in Table 1.2 at the end of this chapter.

1.6.2 Loyalty program adoption of companies (retailers)

At this moment, research on the company's decision whether or not to adopt a loyalty program is completely lacking. Only some literature on related issues exists, i.e. on the adoption of database marketing (Verhoef and Hoekstra 1999) and Marketing Decision Support Systems (Wierenga and Oude Ophuis 1997). Both external factors such as heterogeneous and dynamic markets and competitors' adoptions, and internal factors such as organizational structure, customer orientation, and technological skills, are shown to drive the adoption of these systems. However, it is unclear to what extent these factors also drive the adoption of loyalty programs.

1.6.3 Loyalty program adoption of customers

A few studies exist on the customer decision whether or not to become loyalty program member. DeWulf et al. (2003) find, not surprisingly, that the customers decision whether to enroll to a loyalty program depends particularly on the benefits (rewards) offered by the program and (negatively) on monetary participation costs. Because evaluating the benefits of an individual loyalty program in isolation is demanding, Kivetz and Simonson (2003) argue that customers base their participation decision on an idiosyncratic fit heuristic. Their findings confirm this idea: the probability of loyalty program participation positively depends on the difference between the individual efforts to obtain rewards and a reference effort (the effort of typical other consumers) even when the absolute required effort is higher. Allaway, Berkowitz, and D'Souza (2003) study the diffusion process of a retailer's loyalty program, and find that the distance to the store is a critical driver, next to impersonal communication (media such as billboards) and interpersonal communication (between customers). Overall, it is difficult to base managerial implications on membership decisions solely, because loyalty program selectivity is linked to effectiveness and profitability. For example, higher required efforts for obtaining rewards might withhold some customers to participate, but could at the same time strengthen the effects on program members and reduce costs. In other words, high membership rates are not necessarily optimal.

1.6.4 Loyalty program effects on customer loyalty

Most research on loyalty programs has been dedicated to effectiveness assessment, as it is fundamental to prove a reason of existence for loyalty programs. Existing empirical (field) studies provide mixed evidence. Mägi (2003) finds no overall significant effect of loyalty card possession in the primary store on either share-of-visits or share-of-wallet for four loyalty programs operating in a middle-sized town. However, the loyalty card effect is significant for the two largest chains in the market she studies. Sharp and Sharp (1997) also find that a loyalty program generates effects on average purchase frequencies and share-of-requirements only for a limited number of providers. On the other hand, Bolton, Bramlett, and Kannan (2000) find that loyalty program members tend to overlook negative evaluations in their retention decision, and use their credit card account more intensively. Finally, Verhoef (2003) finds that loyalty program memberships enhance customer share developments.

An important issue for the empirical analysis of loyalty programs is the two-sided causal direction of the effects (endogeneity problem). A loyalty program aims to enhance customer loyalty, but loyalty program enrolment is specifically attractive for customers who are already loyal. Therefore, differences between program members and non-members cannot be attributed completely to the loyalty program effect. Authors of existing effectiveness studies bring up the problem as an issue for further research:

"The prevalence of multiple memberships, consumers' reasons for acquiring cards, and the causal relationship between card membership and customer share need to be more thoroughly investigated" (Mägi 2003, p.9)

"The positive effect of reward programs (…) is likely to be overestimated in prior research that does not account for the endogenous nature of these programs" (Bolton et al. 2002, p.17)

When considering the *loyalty program designs* of the programs in the field studies discussed above, we observe considerable variation: loyalty programs that give their members special discounts and member-only mailings (Mägi 2003), a loyalty program that provides a quantum discount dependent on the number of contract hold (Verhoef 2001), a 'traditional' saving program but with entrance fee (Bolton et al. 2000), and a wide-scale multi-vendor

saving program (Sharp and Sharp 1997). Experimental and analytical studies have dealt with the effects of several design elements. Distinction can be made between delayed versus immediate rewards (Yi and Jeon 2003; Zhang, Krishna, and Dhar 2000). Customer rewarding based on purchase selection is immediate if the reward is given immediate upon purchase (price discount), and delayed when a customer is rewarded on a future purchase occasion requiring retention (e.g. saving programs, coupons). Under low-involvement conditions, immediate rewards are higher valued than delayed rewards, but at the risk of creating just program loyalty and not brand or store loyalty (Yi and Jeon 2003). An advantage of delayed rewards is that they create switching costs, which decrease price sensitivity and enable companies to ask higher prices (Kim, Shi, and Srinivasan 2001). A meaningful distinction of reward types can be made between product-related and -unrelated rewards. Experimental research (Roehm, Bolman Pullins, and Roehm 2002) shows that product-related rewards are better able to support favorable brand associations and therefore preferred over product-unrelated rewards. Furthermore, product-related are typically more efficient to offer, and especially companies with high brand equity can benefit from giving them as a reward (Kim et al. 2001; Kopalle and Neslin 2003). Another possible categorization is between hedonic and necessity rewards. Kivetz and Simonson (2002) show a higher preference for luxury rewards when required efforts increase, relating to a reduction in guilt feelings.

Analyses on saving points schedules have shown that customers strongly let themselves lead to the points (the mediator) rather than to the reward to be obtained in the end, which may lead to obviously irrational behavior (Hsee et al. 2003; Van Osselaer, Alba, and Manchanda 2004). In sum, experimental research has shown that the design of a loyalty program can influence its effectiveness considerably.

In game-theoretical studies, models have taken into account the possibility of *competitive loyalty programs* as part of the 'loyalty game' (Bell and Lal 2002; Kim et al. 2001; Kopalle and Neslin 2003). They find that loyalty programs lead to less price competition and higher price levels, but not necessarily to more profits. Mägi (2003) is the only study that empirically accounts for competitive loyalty programs, and it shows that loyalty card memberships of competitors can have a negative effect on behavioral loyalty (share-of-wallet), even when the loyalty program itself is not able to enhance loyalty.

Other relevant factors can be found in industry differences. The overview in the appendix shows that the loyalty programs studied differ widely in the industry in which they are used. Several authors suggest that the effectiveness of loyalty programs could vary between product categories (e.g. Bhattacharya and Bolton 2000; Verhoef 2003). Relevant determinants suggested are the degree of involvement in the product category (Yi and Jeon 2003), variety seeking tendencies (Zhang et al. 2000), and risk aversion (Bulkley 1992). So far, no study directly assesses the effects of industry differences on loyalty program effectiveness.

1.6.5 Loyalty program profitability

Most studies have not considered the costs of loyalty programs. Some empirical studies exist on the profitability of individual loyalty actions, which point to positive net revenues of a temporary saving program (Bell and Lal 2002; Drèze and Hoch 1998). Analytical studies have also taken costs into account. They find that loyalty programs are particularly profitable if the category is expandable (Kopalle and Neslin 2003) or when consumers are strongly variety seeking (Zhang et al. 2000). Wansink (2003) finds that extensive loyalty programs are somewhat more effective than basic (low reward) programs, but they are less profitable. This result can be explained by the fact that extensive, high reward program target specifically heavy users, on who only limited additional profits can be earned. Kopalle and Neslin (2003) analytically find that possibilities for category expansions stimulate loyalty program profitability. Zhang, Krishna, and Dhar (2000) argue that immediate rewards might be more effective, but delayed rewards are more profitable in case of many heavy-users and light-users with low price sensitivity. However, to empirically assess the profitability of the total program is challenging, because most programs consist of several components, they influence various behavioral variables and they require several different costs. Furthermore, because loyalty programs are in general a long-term strategy, both the short-run and long-run profitability are relevant.

1.7 Outline of the Dissertation

This dissertation investigates the central research problem by means of three empirical studies. The empirical studies are presented in respectively Chapters 2, 3, and 4.

In Chapter 2 a survey among 180 retail managers is conducted. It studies the loyalty program adoption of retailers out of market and organizational characteristics. The study aims to explain high differences between loyalty program adoptions between retail sector, but also the phenomenon that even in sectors with many loyalty programs some retailers decide not to adopt a loyalty program. The survey is also used to study loyalty program effects on customer knowledge and customer loyalty as perceived by retail managers, in combination with loyalty program design and industry differences.

Chapter 3 studies loyalty program effects on behavioral loyalty, using market-wide panel data of 1950 households on grocery purchasing and loyalty program memberships. To account for the two-sided causality between these variables, we specify a model for the loyalty program adoption of customers and use instrumental variables such as privacy concerns and loyalty program enjoyment. The study is the first to account for endogeneity by accounting for two-sided causality between loyalty program memberships and purchase behavior, and it illustrates to what extent correcting for endogeneity problems is important. The study also accounts for competition, and assesses the effects of loyalty program design differences. Finally, rewarding costs are taken into account in order to draw conclusions about effects on net revenues.

Chapter 4 uses purchase data of 45,996 customers of a clothing retailer, who are members of the loyalty program. This chapter studies the effects of a loyalty program reward: a store voucher given to members who obtained a minimal number of saving points. We study the voucher effects on customer purchasing, split up into purchase incidence and purchase quantity. Our model also accounts for post-rewarding effects and dynamics in response behavior. We use the model estimates to calculate the effects of a voucher on customer lifetime value. In general, the study gives insight in the question whether it pays off to reward your best customers for their loyalty.

Chapter 5 provides the overall conclusions. It gives an overview of the findings and formulates answers to the research questions and problem statement. It then discusses the implications for research, management, and policy makers. The chapter concludes with a discussion of directions for further research.

Table 1.2 Overview of existing studies on loyalty programs

Author	Relation studied	Research Method	Particular Details	Application
Allaway, Berkowitz, and D'Souza (2003)	Customer adoption of loyalty program	Field study	Diffusion of loyalty cards after a loyalty program launch	Retailing: unspecified
Bell and Lal (2002)	Effectiveness of loyalty action	Field study + analytical foundation	Effects of a temporary saving program on customer purchases	Grocery retailing
Bolton, Kannan, and Bramlett (2000)	Effectiveness of loyalty program	Field study: Panel data + questionnaire	The effect of loyalty program membership on account retention and usage	Credit card company
Bulkley (1992)	Effectiveness of loyalty program	Analytical IO	Assumes uncertainty in utility of future purchases as rationale for loyalty programs	-
DeWulf et al. (2003)	Customer adoption of loyalty program (+ design)	Conjoint study	Conjoint analysis on utility of loyalty program designs	Unspecified
Drèze and Hoch (1998)	Effectiveness/Profitability of loyalty action	Field experiment	Effects on sales and profitability of loyalty action directed towards specific part of the assortment	Baby products
Drèze and Nunes (2004)	Preference for program design	Analytical (Decision Making) + experimental	Response to "combined-currency pricing": money plus saving points	Airlines

Overview of existing studies on loyalty programs (2)

Author	Relation studied	Research Method	Particular Details	Application
Kim, Shi and Srinavasan (2001)	Effectiveness/profitability of loyalty programs + design	Analytical (Game-theory)	Trade-off between product-related and –unrelated products in relation to price-sensitivity and usage intensity	-
Kivetz and Simonson (2002)	Preferences for design	Experimental	The effect of effort requirements on preference for necessity versus luxury rewards	Retailing, car rental, e-commerce
Kivetz and Simonson (2003)	Customer adoption of loyalty programs	Experimental	The effect of idiosyncratic fit (required effort compared to reference effort) on participation	Restaurant, department store, credit cards
Kopalle and Neslin (2003)	Effectiveness/ profitability of loyalty programs	Analytical (Game-theory) (some empirical evidence)	Studies viability of loyalty programs in relation to preferences for the reward and for competing brands, and to category expandability	Airlines
Liebermann (1999)	Customer adoption + effectiveness of loyalty programs	Structured telephone interviews	Exploratory study, self-reported effects of customers	Unspecified

Overview of existing studies on loyalty programs (3)

Author	Relation studied	Research Method	Particular Details	Application
Mauri (2003)	Effectiveness of loyalty programs	Field study: Panel data + questionnaire	Determinants of consistent loyalty card usage	Grocery retailing
Mägi (2003)	Effectiveness of loyalty programs (+ competition)	Field study: Panel data + questionnaire	Satisfaction as most important control variable	Grocery Retailing
Nunes and Drèze (2003)	Effectiveness of loyalty programs (+ design)	Experiments	Studies to what extent wider redeeming opportunities can make a saving program more effective	Airlines
Roehm, Bolman Pullins, and Roehm (2002)	Loyalty program design + effectiveness	Experimental	The influence of reward characteristics on attitudinal loyalty	Packaged goods: Soft drinks
Smith et al. (2003)	Effectiveness of loyalty programs	Diary study + questionnaire	Mirroring technique, small sample size (30)	Retailing: unspecified
Sharp and Sharp (1997)	Effectiveness of loyalty programs	Field study	Observation short after launch of a large multi-vendor loyalty program	Retailing: Diverse
Van Osselaer, Alba, and Manchanda (2004)	Loyalty program design + effectiveness	Experimental	Studies design of saving points schedules	Airlines

Overview of existing studies on loyalty programs (4)

Author	Relation studied	Research Method	Particular Details	Application
Verhoef (2003)	Effectiveness of loyalty programs	Field study: Panel data + questionnaire	Changes in share-of-wallet measured between two successive years	Insurance products
Wansink (2003)	Effectiveness/Profitability of loyalty programs (+ design)	Experiment among mangers and consumers	Perceived effectiveness of different program designs	Packaged goods
Yi and Jeon (2003)	Loyalty program design + effectiveness	Experimental	Effects on program loyalty and brand loyalty (attitudinal)	Fried chicken stores, beauty salons
Zhang, Krishna, and Dhar (2000)	Loyalty program effectiveness and profitability	Analytical (some empirical evidence)	Differences between immediate and delayed promotions on sales and profitability	Packaged goods

Chapter 2

Adoption and Effectiveness of Loyalty Programs: The Retailer's Perspective

2.1 Introduction

After turbulent years with many loyalty program introductions, retail markets have become relatively stable. A considerable number of retailers currently use loyalty programs as a means to intensify relationships with customers and to stimulate customer loyalty (see Chapter 1). On the other hand, many other retailers have decided not to adopt a loyalty program. They consider loyalty programs not suitable for their specific company or for the market in which they are operating. Food Marketing Institute (1999) reports that about 60% of the American retailers do not have loyalty programs, and 70% of these non-adopters have no plans to introduce them in the future. Distinction can thus be made between two groups of retailers: the adopters and the non-adopters of loyalty programs. The factors that determine companies' adoption of loyalty programs are unclear. And equally interesting issue is to what extent the adopters perceive their loyalty program as effective.

Existing academic research demonstrated the theoretical basis of loyalty program adoptions (Kim, Shi, and Srinivasan 2001; Zhang, Krishna, and Dhar 2000), and has provided empirical evidence of their effectiveness (Bolton, Kannan, and Bramlett 2000; Mägi 2003). Experimental research has focused on loyalty program design elements such as the saving feature (Kivetz and Simonson 2002a; Roehm, Bolman Pullins, and Roehm 2002) and consumer characteristics (Kivetz and Simonson 2002b) to explain differences in effectiveness. However, most existing research has focused on one loyalty program or one loyalty program characteristic in isolation. Further, it remains unclear under which market and organizational conditions a loyalty program is a suitable marketing investment.

In contrast, this study assesses the drivers of retailers' loyalty program adoption and the perceived success of these programs. To this end, we conducted a survey among 180

retailers in the Netherlands. Contrary to existing literature on loyalty programs, which is based on either empirical or experimental consumer data, we take a retailer's perspective. Retail managers work with loyalty programs on a daily basis, and can draw from wide experience and numerous (proprietary) information sources. Specifically, our study contributes to the literature on loyalty programs in two ways.

First, our survey among retailers on the *adoption of loyalty programs* will provide insight in market and organizational characteristics (e.g. competitive intensity and technological skills) that stimulate or restrain a loyalty program adoption. This contribution closely matches research question 1 proposed in Chapter 1 (*Which factors drive retailers to adopt loyalty programs?*). Although the growth in retail loyalty programs is remarkable, loyalty programs are not equally widespread in all retail sectors. And even in sectors where they are popular, several players still do not use them. To broaden academic insight in managerial decision-making and to support future retail decision-making, it is important to understand why some retailers have adopted certain marketing strategies such as loyalty programs and others have not.

Second, through a large sample of loyalty program providers, we can study the effects and relative importance of specific reward elements (e.g. saving features) and database elements (e.g. data analysis) on *loyalty program effectiveness.* We take the retailer's perception of loyalty program effectiveness as our dependent measure. Using perceived measures is common for management research, to measure for example relationship quality (Jap 2001; Kumar, Stern, and Achrol 1992) or market performance (Li and Calantone 1998). A retail company can derive two types of benefits from its loyalty program. First, loyalty program rewards could stimulate customer loyalty, by treating cardholders as privileged customers and giving loyalty incentives (Liebermann 1999). A second benefit is to obtain customer-specific information, by scanning loyalty cards of loyalty program members at every purchase (Byrom 2001; Mauri 2003). These data could enhance customer knowledge in terms of better customer-specific insight in product preferences, marketing-mix responses, etc. In existing research this second benefit has not received much attention. Obviously, a retailer's perspective is needed to obtain insight in this aspect. Overall, such an analysis could provide insight in research question 2 (*Which effects do loyalty programs have on purchase behavior and profitability?*), research question 3 (*How does loyalty program design influence*

effectiveness?), and research question 4 (*How do competitors' loyalty programs influence effectiveness?*).

The rest of this chapter is structured as follows. In the next section, we develop a conceptual framework and formulate hypotheses on factors influencing loyalty program adoption; in section 2.3 we do the same for loyalty program effectiveness. Section 2.4 describes our research method, and section 2.5 presents the results of the empirical study. We conclude in section 2.6, and discuss managerial implications and limitations of the study.

2.2 Loyalty Program Adoption

2.2.1 Conceptual framework

Retail companies have traditionally been transaction oriented, rather than relation oriented (Mulhern 1997). Several authors have proposed classifications or stages of relationship marketing. Coviello et al. (2002) label the first stage of relationship marketing as database marketing. They describe it as the use of technology-based tools to target and retain customers. Day (2000) speaks of value-adding exchanges: the focus of the firm shifts from getting customers to keeping customers. The firm pursues this objective by developing a deep understanding of their customers' needs, then tailoring their offering to these needs as closely as possible, and giving continuing incentives for the customer to concentrate most of their purchases with them. Berry (1995) classifies it as "level one" relationship marketing, a relational perspective that relies primarily on pricing incentives to secure customers' loyalty. These definitions have in common their focus on the creation of customer databases, increasing customer knowledge and customer value, and enhancement of loyalty.

As such, the benefits of loyalty programs fit very well in these relationship marketing definitions. We define the enhancement of customer knowledge and customer loyalty as the two potential key benefits of a loyalty program. First, a loyalty program yields customer-specific purchase data by scanning loyalty cards of members at every purchase, which enables retail companies to improve customer knowledge (Mauri 2003). We define customer knowledge as the understanding of the needs and wishes of customers on segment or individual level (Campbell 2003). Customer-specific data also provide relational opportunities

in terms of targeting (Rossi, McCulloch, and Allenby 1996) and cross-selling (Kamakura et al. 2003). Therefore, customer databases are considered an important instrument to build customer relationships in retailing (Grönroos 1999; Mulhern 1997). Second, rewards such as saving features, special actions, and direct mailings give loyalty incentives to program members and can enhance customer loyalty (Liebermann 1999). Customer loyalty can be described as a deeply held commitment to rebuy or repatronize a preferred product consistently in the future (Oliver 1999). In sum, we believe that loyalty programs have the potential to support retailers' move from a traditional transactional perspective towards a relational perspective. Figure 2.1 shows our conceptual framework.

Building company-customer relationships is neither appropriate nor necessary for every market, company, or customer (e.g. Day (2000)). In the same vein, relational instruments such as loyalty programs are not a useful investment for every retail company. When deciding whether or not to adopt a loyalty program, a retailer must anticipate on the related benefits and costs. These depend, first of all, on the characteristics of the market in which the company operates in terms of market structure and product type. Given certain market circumstances, the company's resources and strategy drive the attractiveness of a loyalty program adoption for a specific retailer. A final critical element in the usefulness of a loyalty program is the characteristics of a company's customer base. Because the characteristics of its customer base are a joint result of both the market in which a company operates and its specific position within that market, we cannot categorize customer factors as either organizational or market factors. We now discuss three market factors, four organizational factors, and two customer base factors that may impact retailers' loyalty program adoption.

Figure 2.1 Conceptual framework
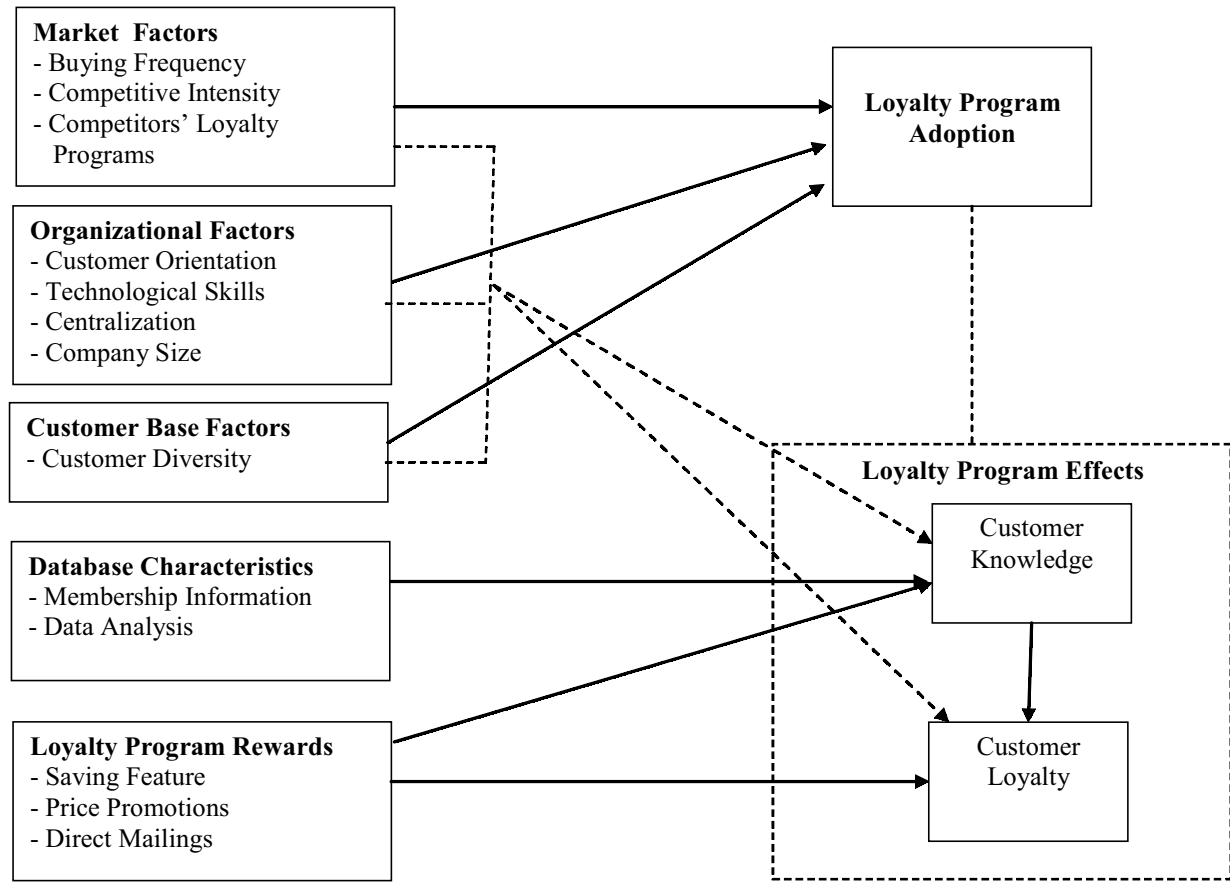
2.2.2 Market factors

Product Market Type

Grönroos (1995) argues that relationship marketing makes less sense if consumers buy infrequently in the product category such as in case of durables. Keeping the relationship alive during non-purchase periods is costly without any immediate pay-off from it. Under such circumstances, a company can thus better stick to transaction marketing and try to attract the consumer once he makes one of his scarce purchases.

Furthermore, the benefits of a loyalty program critically depend on customers' adoption of the loyalty program: customers must be willing to become member of the loyalty program and continue to use their loyalty cards. Customers are most likely to adopt a loyalty card if they receive positive reinforcements from it frequently. Positive reinforcements are

automatically created at a transaction, when the customer is identified as a program member and possibly receives program rewards such as price promotions or saving points. Thus a product category in which customers buy with high frequency has higher potential for developing program loyalty (Bhattacharya and Sen 2003; Yi and Jeon 2003). The arguments above suggest that relationship marketing, and loyalty programs specifically, provide highest benefits in markets where consumers make purchases with high frequency.

Overall, we hypothesize the following:

H1:   The frequency with which customers make purchases within the product category positively influences the likelihood that a retailer adopts a loyalty program.

Competitive Intensity

Competition is most intense if competitors have a comparable marketing mix. In such markets, companies harass each other with promotional actions to attract each other's customers. Customers' switching make expected cash-flows more volatile and require high reacquisition costs (Srivastava, Shervani, and Fahey 1999). A better long-run strategy to create competitive advantage is to differentiate oneself from the competition through innovations (Nijs et al. 2001; Voss and Seiders 2003). A loyalty program creates competitive advantage, not so much by attracting new customers but by locking in present customers. Because in a competitive market the threat of losing customers is substantial, creating customer loyalty is beneficial. Against this background, the adoption of relational instruments can create larger benefits than under circumstances of modest competitive intensity.

Therefore, we posit:

H2:   A higher competitive intensity in a market increases the likelihood that a retailer adopts a loyalty program.

Competitors' Loyalty Programs

The adoption of innovations such as loyalty programs is often stimulated by examples in the environment, for two reasons (Verhoef and Hoekstra 1999; Wierenga and Oude Ophuis 1997). First, companies face uncertainty concerning the future benefits and costs of loyalty program adoption, and may use competitors that have already introduced a loyalty program as 'models' to base their decision on. This phenomenon is called mimetic isomorphism and was

first described by DiMaggio and Powell (1983) to explain a tendency towards homogeneity within markets. Mimetic isomorphism is thus driven by a reduction of uncertainty and risk concerning the future profitability of an innovation, which increases the attractiveness of an investment (Gatignon and Robertson 1993). Second, companies may adopt a loyalty program as a counteraction to competitors' adoption of a program (Leeflang and Wittink 1996). Loyalty programs are called a defensive strategy because they aim to keep the present customers in the face of future competitive offers, rather than to gain market share (Sharp and Sharp 1997). However, in retailing most customers buy regularly at different companies within the same sector, so that customer bases show considerable overlap (Reichheld and Sasser 1990). A company may thus loose competitive advantage through competitive loyalty programs that provide consumers with loyalty incentives and rewards. Hence, a motivation to react on competitors' loyalty programs is to prevent customer defection, knowing that keeping customers is easier than getting them back.

Because of mimetic isomorphism and competitive reactions, we make the following hypothesis:

H3: A higher percentage of competitors with a loyalty program increases the likelihood that a retailer adopts a loyalty program.

2.2.3 Organizational factors

For a successful implementation of relationship marketing, a company needs appropriate resources and competencies. Day (2000) proposes three categories of resources that compose the relational capability: orientation, knowledge and skills, and integration and alignment of processes. Along these lines we discuss four organizational factors that influence loyalty program adoption.

Customer orientation

Grönroos (1999) argues that relationship marketing requires a shift in focus from products towards resources and competencies in relationships. Customer orientation reflects the firm's understanding of its target buyers and its commitment to deliver superior value to these customers continuously (Narver and Slater 1990). The benefits of a loyalty program have strong parallels with customer orientation. Loyalty program data can enhance customer

understanding and through differentiated offers a loyalty program can create higher customer value. Because the benefits of a marketing strategy depend on its compatibility with the company's overall strategy (Day and Van den Bulte 2002; Nijssen and Frambach 2000), we hypothesize:

H4:   The more customer oriented a retail company is, the higher the likelihood that this retailer adopts a loyalty program.

Technological skills

Retail companies make use of various technologies (such as scanners and inventory management systems) to optimize information streams within the company. In general, it has been found that technological skills enhance organizational innovations (Damanpour 1991). But more specifically, technological skills to acquire, manage and model customer information are key to relationship marketing (Day 2000; Hogan, Lemon, and Rust 2002). Hence, in our context these skills could enhance the benefits of loyalty program data, while reducing costs of implementation and data handling.

We hypothesize:

H5:   The better a retail company's technological skills, the higher the likelihood that the retailer adopts a loyalty program.

Centralization

In centralized retail companies, the decision-making authority is concentrated at the head office. This leads to lower commitment and involvement of the individual outlets, which could negatively influence the implementation of innovations such as relationship marketing (Damanpour 1991; Frambach et al. 1998). Relationship marketing requires a change in focus of the entire organization, which concerns a change in mindset rather than a change in rules (Berry 1995; Grönroos 1999). So, internal marketing must motivate employees to support a successful loyalty program adoption, and to adopt a customer-focused approach. In an organization in which decisions are taken solely at the head office, employees at the individual outlets are harder to convince about the need for behavioral changes to support these decisions. Because a successful implementation of relationship marketing is more

difficult in a centralized organization, the expected benefits of a loyalty program are lower, and we hypothesize:

H6: The more centralized a retail company is organized, the lower the likelihood that the retailer adopts a loyalty program.

Company size

Large companies are more likely to adopt new systems and services (Frambach et al. 1998; Wierenga and Oude Ophuis 1997). They possess more means to invest in large-scale innovations, and their innovations are often more profitable because of scale advantages. The costs of loyalty program adoption are partly fixed, e.g. in setting up a card registration and data warehouse system, which favors adoption in large-scale programs. In addition, the benefits are higher for large companies, because a larger customer base can be reached with the loyalty program. Because of wider financial funding possibilities, and economies of scope and scale, we hypothesize:

H7: The larger a retail company, the more likely it is that the retailer adopts a loyalty program.

2.2.4 Customer base factors

An important advantage of relational marketing instruments over traditional marketing instruments is their capability to differentiate between customers on individual level. A loyalty program's potential of customer differentiation creates the strongest relative advantage over mass marketing when customer diversity is high (Sheth, Sisiodia, and Sharma 2000). We focus on customer diversity here, which does not imply that no other customer base factors are relevant for a company's adoption decision; it is just that we want to focus here on a factor that is distinctive for this specific adoption decision.

Loyalty programs can realize customer differentiation through two mechanisms: 1) differentiation between loyalty program members and non-members, 2) differentiation between loyalty program members themselves due to personalized program rewards. Diversity may take one of the two forms: profitability diversity and preference diversity.

Profitability

When customers vary substantially in profitability, it is not rational to invest in all of them equally. In order to optimize customer equity a company should reward those who are most profitable in order to encourage them to stay, and it should give incentives to those who are not profitable yet (Berger et al. 2002; Rust, Zeithaml, and Lemon 2000). A loyalty program can reward customers for purchase behavior or it can select profitable customers and treat them with privileges and additional service (Bell et al. 2002). In this way a loyalty program can help to spend marketing budgets more efficiently, which supports the benefits of a loyalty program adoption. But of course, the possibilities for customer differentiation based on profits are most beneficial if customers vary substantially in profitability.

Preferences

Customers can also differ in their preferences towards the companies offering. First of all, not all customers are willing to be involved in a relationship with the retailer. Reinartz and Kumar (2000) advise managers to let short-life customers who are notorious switchers "fly around", rather than bother them with relational investments. Moreover, customers with low relational preference are less likely to become member of the loyalty program. Loyalty program thus provide a self-selection mechanism so that customers who are not relational prone will not be bothered. In addition, customers differ in their preferences for specific products and product categories. A loyalty program can use segmentation criteria such as assortment interests or lifestyle to provide customer-specific actions. In general, a loyalty program has the potential to distinguish between customer preferences and to make tailored offers to increase customer value and loyalty. Because the benefits of differentiation are highest for a diverse customer base, we hypothesize:

H8a: The more diverse its customer base in terms of profitability, the more likely a retailer is to adopt a loyalty program.

H8b: Retail companies with a more diverse customer base in terms of preferences are more likely to adopt a loyalty program.

2.3 Loyalty Program Effectiveness

2.3.1 Relevant factors

The drivers of loyalty program effectiveness are of great managerial interest. The degree to which a marketing strategy is effective depends on its implementation and usage (Alavi and Joachimsthaler 1992). As such, we expect that perceived loyalty program effectiveness relates to database elements and loyalty program rewards, and possibly market and organizational factors (see Figure 2.1). These latter factors serve as a selection mechanism based on expected benefits and costs, and if selection is appropriate the success of the program mainly depends on implementation and usage factors. Wierenga and Oude Ophuis (1997) for example found that market and organizational factors do not influence the effectiveness of management decision support systems if implementation and usage factors are included as well. For loyalty programs the same might hold, though we have no ex-ante reasons to rule out an independent effect of market and organizational factors on loyalty program effectiveness. We now discuss two database elements and three loyalty program reward elements that may influence loyalty program effectiveness in terms of a better understanding of customers needs and wishes (customer knowledge) and an improved customer commitment to repurchase (customer loyalty). We then discuss the influence of customer knowledge on customer loyalty.

2.3.2 Customer database elements

Membership information

Many companies require customers who become members of their loyalty program to provide personal data through a subscription form (mostly socio-demographic information and sometimes domain-specific interests or attitudes). The addition of personal data to purchase data improves the quality of the customer database. They can be used for several applications, e.g. addresses can be used to develop geo-marketing profiles, household composition to distinguish socio-demographic groups. So, membership information enables a company to obtain better, personalized knowledge about their customers.

Therefore, we hypothesize:

H9: Loyalty programs that oblige members to provide personal data enhance customer knowledge more than loyalty programs without such an obligation.

Intensity of data analysis

Customer databases only improve customer knowledge when the data are analyzed on a regular basis. However, many companies are not able to handle the enormous databases statistically (Verhoef et al. 2003). The analysis of customer-level purchase data provides an important opportunity to better understand customer behavior and increase customer knowledge (Rossi, McCulloch, and Allenby 1996).

Therefore, we propose:

H10: The intensity with which loyalty program data are analyzed enhances customer knowledge.

2.3.3 Loyalty program rewards

Saving feature

Saving features are a form of postponed rewards. Customers have to spend a substantial sum of money, which typically requires a long series of purchases, in order to obtain a reward in the end. As such, a saving feature is an instrument that provides very transparent loyalty incentives. The effectiveness of saving features in enhancing customer loyalty has been shown by experimental studies (Nunes and Drèze 2003; Van Osselaer, Alba, and Manchanda 2003).

To benefit maximally from the saving feature a customer must consequently use his or her loyalty card at every purchase. Customers' consistent use of loyalty cards enhances the quality of the customer database, which optimally supports customer knowledge. Realizing card loyalty is sometimes mentioned as a key motivation of giving loyalty rewards (Mauri 2003). In addition, a saving feature captures information about saving and redeeming behavior, and rewards choice (Kivetz and Simonson 2002a). As such, it provides a company additional knowledge about relationship status and product preferences.

We hypothesize:

H11a: Loyalty programs with a saving feature enhance customer knowledge more than loyalty programs without a saving feature.

H11b: Loyalty programs with a saving feature enhance customer loyalty more than loyalty programs without a saving feature.

Promotion Feature

Many loyalty programs offer price promotions to their members on products in the assortment. These price promotions are offered only to loyalty program members, differentiating between customer members and non-members. Customers might therefore consider such price promotions as a relational investment, which enhances their loyalty (DeWulf, Odekerken-Schröder, and Iacobucci 2001). A customer might also attribute obtaining a discount to its own effort. Schindler (1998) showed that this induces feelings of pride, which motivates repeat behavior and enhances customer loyalty. Further, a retail company obtains person-specific response information. This improves customer knowledge on the individual customer level, in terms of price sensitivity, deal proneness, and product preferences. We expect:

H12a: Loyalty programs that with a promotion feature enhance customer knowledge more than loyalty programs without a promotion feature.

H12b: Loyalty programs that with a promotion feature enhance customer loyalty more than loyalty programs without a promotion feature.

Direct Mailings

Direct mailings are an effective tool to differentiate between customers and to approach them individually (Bult and Wansbeek 1995). Direct mailings are a form of personal treatment, and could thus enhance customer loyalty (DeWulf, Odekerken-Schröder, and Iacobucci 2001). In a similar vein as for price promotions, a retail company obtains individual-level response information on the mailing offerings, which could improve their knowledge on its customers. Therefore, we hypothesize:

H13a: A loyalty program that uses direct mailings enhances customer knowledge more than a loyalty program without direct mailings.

H13b: A loyalty program that uses direct mailings enhances customer loyalty more than a loyalty program without direct mailings.

2.3.4 Customer knowledge → Customer loyalty

Customer knowledge has been recognized as an important tool to enhance customer loyalty in mass markets (Coviello et al. 2002; Hogan, Lemon, and Rust 2002). When a retailer knows his customers on segment or even individual level he can provide better service and develop stronger relations with them. A company can apply micro-marketing or provide personal offers. So, customer knowledge can be used to improve customer value, and we hypothesize:

H14:   Customer knowledge enhances customer loyalty.

2.4 Research Method

2.4.1 Procedure

To test our hypotheses, we conducted a survey among marketing managers of retail companies in the Netherlands. Our questionnaire was extensively pre-tested among nine experts. This group of experts consisted of three academics, three research consultants, and three retail managers, each of which is strongly involved in retailing and loyalty program projects.

The sampling frame was formed by a commercial database that contains all retail chains with at least seven outlets or 100 employees in the Netherlands. From this database, we excluded all companies that are pure service providers (e.g. hair dressers), companies that register customers automatically (e.g. video rentals), and companies strongly limited in their marketing actions because of government regulation (e.g. pharmacies). All other companies were contacted by phone to obtain the name and e-mail address of the person responsible for the company's marketing policy. We were thus also able to remove companies that had gone bankrupt or that appeared not to operate in a business-to-consumer market. The remaining sampling frame consisted of 418 retail companies. These retail companies received a questionnaire in March 2003, and could choose to complete it by regular mail or e-mail. A reminder was issued if a respondent did not reply within two weeks. As an incentive, we offered all respondents a report with the study findings.

We received 180 complete questionnaires, for a response rate of 43.1 percent. This response rate is very high for this type of research, which indicates that loyalty programs are

an important topic to retailers. To test for non-response bias, we compared late respondents with the rest of the sample on all constructs in our framework (Armstrong and Overton 1977). We used two definitions for late respondents, namely the slowest 25 percent, and those companies that received a reminder (37.4%). For both definitions, no significant differences appeared between late and early respondents for any of the constructs in our conceptual framework (all p-values > .20).

2.4.2 Measures

Most variables on organizational and market characteristics were measured with multi-item 7-point Likert scales. We based ourselves mostly on scales from existing research, thereby sometimes adapting certain items to make them suitable for a retail environment. The reliability was sufficiently high for all scales (Cronbach's α > .75). Customer diversity was measured with two single-item scales that measure the extent to which companies perceive their customer base as diverse in terms of profitability and in terms of customers' preferences. Buying frequency was measured as a categorical variable with three levels (<6, 6-30, >30 purchases per year in the product category) to indicate product market type. We used dummy coding with the middle category (6-30 purchases) as base line category. For measuring competitive intensity (α = .79), we used the scale developed by Jaworski and Kohli (1993). To measure the influence of competitors' loyalty programs we use the percentage of competitors that adopted a loyalty program. We defined competitors as those companies that are active in the same retail sector. For this, we segmented the sampling frame into 25 homogenous sectors, and determined loyalty program adoption for all 418 companies in the sampling frame. The scale for customer orientation (α = .85) was derived from the marketing orientation scale of Narver and Slater (1990). For development of the scale for technological skills (α = .79) we based ourselves on the scale of Gatignon and Xuereb (1997). The scale for centralization (α = .78) was adapted from Jaworski and Kohli (1993). Their scale addresses the hierarchical authority towards individual employees within the organization, and we reformulated the items in order to measure the hierarchical relation between individual retail outlets and the head office instead. Company size was measured as the number of outlets of the retail company. Because the variable was highly skewed, we log-transformed it. The

specific item formulation can be found in Appendix A, Table 2.1 presents descriptive statistics on the measured market and organizational characteristics.

Table 2.1 Descriptive statistics of marketing and organizational characteristics

Variable	Minimum	Maximum	Mean	Std. Deviation
Customer Diversity:				
- Profitability	1.00	7.00	4.88	1.60
- Preferences	1.00	7.00	4.74	1.34
Competitive Intensity	1.00	7.00	4.83	1.28
Competitors' Loyalty Programs	.00	80.00	32.79	19.58
Customer Orientation	1.00	7.00	5.81	.92
Technological Skills	1.00	7.00	4.14	1.31
Centralization	1.00	7.00	4.16	1.49
Size (# outlets)	1.95 (7.00)	6.54	3.74	1.23

In the sample, 67 companies operated a loyalty program (37%), which is only marginally higher than in the sampling frame (33%). For 34 percent of the companies, the (commercial) director completed the questionnaire; for 29 percent the marketing manager, and the remaining 37 percent consisted of marketing analysts, marketing researchers, and employees with related functions. The sample covers a wide range of different retail sectors, as is shown in Table 2.2.

Retail companies that indicated to use a loyalty program were asked to complete an additional set of questions about program reward elements, database elements, and the perceived effectiveness of the loyalty program. We asked retailers to indicate whether or not their loyalty program contains certain design elements (dummy coded). Further, retailers were asked to indicate on a 7-point scale the intensity with which they analyze the data obtained from the loyalty program.

Table 2.2 Sample description

Sector	Number of Respondents	Loyalty Program Adoption	
		Sample	Sampling Frame
Groceries	22	50 %	47%
Apparel	61	34 %	35%
Living	20	10 %	8%
Consumer Electronics	20	30 %	27%
Gasoline	10	100 %	87%
Personal Care	11	55 %	57%
Leisure	19	32 %	26%
DIY	10	40 %	36%
Department Stores	7	14 %	15%
Total	**180**	**37 %**	**33%**

To measure the effects of loyalty programs on customer loyalty, we closely followed the framework of Oliver (1997). It is well documented that true customer loyalty requires both behavioral and attitudinal loyalty (Dick and Basu 1994; Jacoby and Chestnut 1978). Oliver (1997) argued that customer loyalty consists of four components: cognitive loyalty (quality and superiority), affective loyalty (liking and involvement), conative loyalty (commitment and behavioral intentions) and action loyalty (purchase behavior). We used a scale of four items, each of which measures the perceived effect of loyalty programs on one of the loyalty components ($\alpha = .76$). The customer knowledge scale reflects the degree to which the loyalty program improves knowledge about needs and wishes of individual customers and customer segments, in this way decreasing the distance to customers as traditionally seen in mass markets ($\alpha = .84$). One company did not provide information about the perceived effectiveness of its program, so that 66 companies remained for the analysis of loyalty program effects. Considerable variation exist on the reported loyalty program effects on

customer knowledge (mean = 4.32 ; s.d. = 1.28) and on customer loyalty (mean = 5.21; s.d. = .85).

Table 2.3 Design of retail loyalty programs (n=66)

Element	Description	Number of Loyalty Programs	
		Abs.	Perc.
Saving Feature	Saving for points to obtain reward in the future.	51	77%
Promotion Feature	Discounts on certain items for all program members.	41	62%
Direct Mailings	Program members receive direct mails.	50	74%
Credit Cards	Loyalty card can be used as a credit card.	7	11%
Contests	Lotteries, competitions.	9	14%
Demonstrations	Trade shows, product instructions, workshops	5	8%
Multi-vendor	Loyalty program can be used at different companies.	9	14%

Table 2.3 describes the design of the 66 loyalty programs in the sample. A considerable part of the loyalty programs require the consumer to provide personal data at subscription (51 programs). Further, we found considerable variation in the intensity with which retailers analyze loyalty program data. Loyalty programs are predominantly used for offering saving features (51 loyalty programs) and promotion features (41 programs). In addition, more than half of the companies send direct mails to program members (50 programs). Only a few loyalty programs provide other forms of rewards, such as credit card usage or product demonstrations. In our analyses, we will consider only reward elements used by at least ten loyalty programs, to ensure that the results are reliable and generalizable.

2.5 Results

2.5.1 Loyalty program adoption

To assess the drivers of loyalty program adoption by retailers, we estimate a logit model. We checked for multicollinearity between the independent variables, which turned out to be low for all metric variables (all correlations < .33). The logit model has a log-likelihood of −199.0 and a pseudo R^2 of .253. The model predicts correctly for 72.6% of the cases. The coefficients of the logit model and test statistics are presented in Table 2.4.

Our results show that buying frequency has no significant relation with loyalty program adoption, as do neither of the specific level contrasts (H1 rejected). Loyalty program adoption is strongly influenced by the competitive environment: positive significant effects were found for both competitive intensity (H2 accepted, p = .047) and competitive loyalty programs (H3 accepted, p = .001). Furthermore, the organizational factor customer orientation positively influences loyalty program adoption (H4 accepted, p = .012). As hypothesized, centralized companies are less likely to adopt a loyalty program, and the effect is marginally significant (H5 accepted, p = .068). However, the other two organizational factors, technological skills and company size have the expected signs, but are not significant (H5 and H7 rejected). The results show that diversity in customer profitability stimulates loyalty program adoption (H8a accepted, p = .050), but diversity in customer preferences does not (H8b rejected) In sum, both market, organizational, and customer factors drive loyalty program adoption.

Table 2.4 Loyalty program adoption (Logit model)

Explanatory variable	Hypothesis and Expected Sign	Coefficient	Wald-statistic	p-value[a]
Constant		−6.658	9.304	.002
Market factors				
Buying Frequency				
- High	H1: +	.223	.670	.358
- Low	H1: −	−.091		
Competitive Intensity	H2: +	.240	2.823	.047
Competitors' Loyalty Programs	H3: +	.040	13.254	<.001
Organizational factors				
Customer Orientation	H4: +	.518	5.184	.012
Technological Skills	H5: +	.031	.048	.414
Centralization	H6: −	−.183	2.220	.068
Size	H7: +	.126	.737	.196
Customer Factors				
Customer Diversity:				
- Profitability	H8a: +	.193	2.717	.050
- Preferences	H8b:+	−.069	.260	.305

Model Fit
Pseudo R^2 = .253
Correctly predicted: 72.6%

[a] one-sided tests

Because a logit model is non-linear in nature, coefficient estimates give limited insight in effect sizes. Figures 2.2 and 2.3 provide a graphical presentation of the effect size of the significant explanatory variables: customer diversity in profitability, competitive intensity, customer orientation (all in Figure 2.2), and competitors' loyalty programs (Figure 2.3). Each line represents the probability of loyalty program adoption when all variables are fixed on average sample value, with only the variable of interest being varied over its entire range. Figure 2.2 shows that customer orientation has a substantial impact on loyalty program adoption. Dependent on the score on this variable the probability of loyalty program adoption can differ almost 50 percent points between companies. The effects of customer diversity in profitability and competitive intensity are lower; both variables could change the probability of adoption with about 20 percent points. However, the largest effect comes from competitors' loyalty programs; dependent on the value of this variable the probability of adoption could differ almost 90 percent points. So, we find that competitors' programs and customer orientation have the largest impact on a retailer's loyalty program adoption.

Figure 2.2 The effects of customer diversity in profitability, competitive intensity, and customer orientation on loyalty program adoption
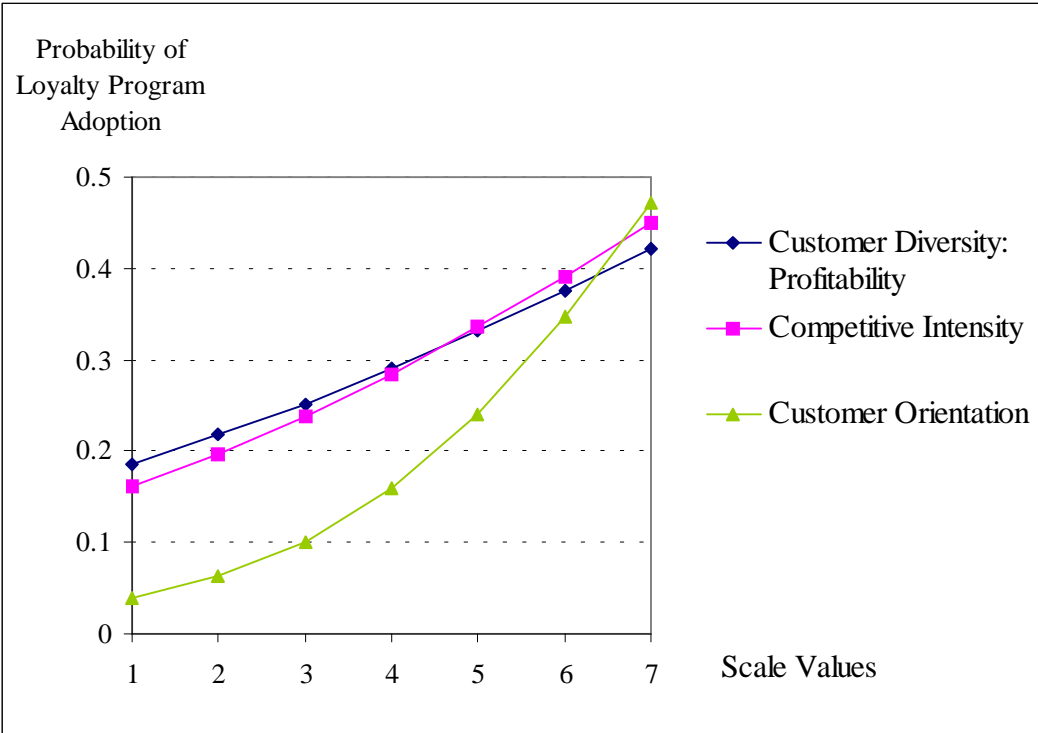
Figure 2.3 The effect of competitive programs on loyalty program adoption
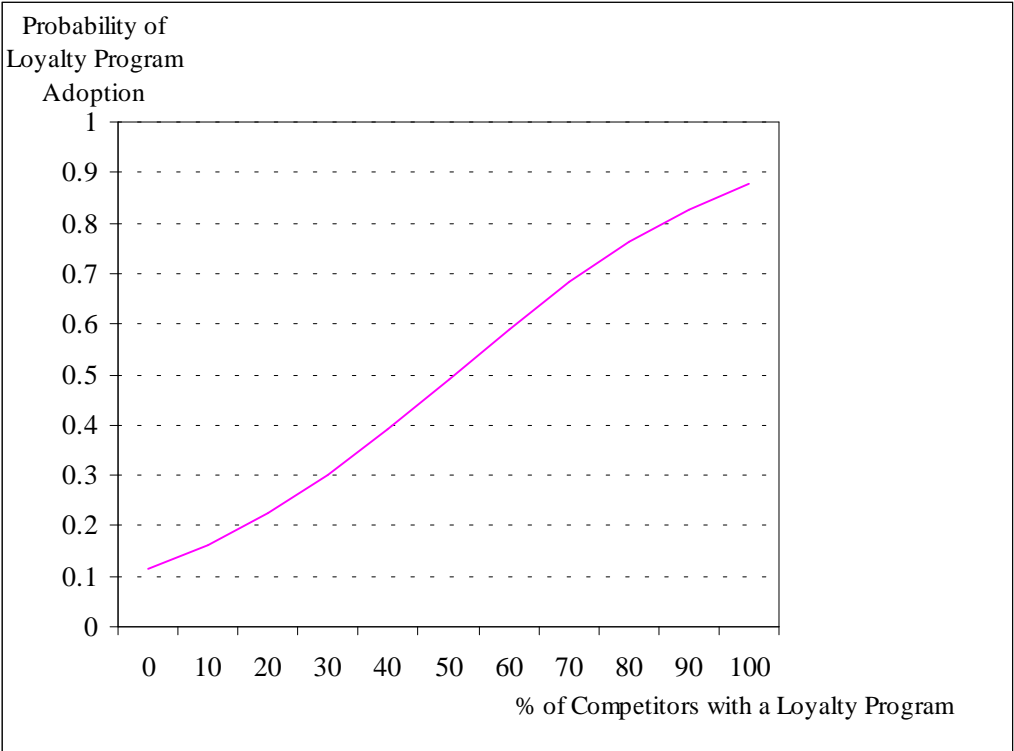
2.5.2 Loyalty program effectiveness

Next, we study the perceived effectiveness of loyalty programs in terms of customer knowledge and customer loyalty by selecting only those companies in the sample with a loyalty program (66 companies). We perform two regression analyses, one with perceived effects on customer knowledge as the dependent variable and one with customer loyalty as the dependent variable. As independent variables we include all loyalty program reward and database factors (H9-H13). In addition we check for possible effects of market and organizational factors. Given the small sample size, we first enter all loyalty program reward and database factors. Next, we sequentially enter the market and organizational factors, but remove them again if they are non-significant (forward variable selection method). The results of the final models are presented in Table 2.6.

The effect of a loyalty program on customer knowledge strongly depends on the intensity with which data are analyzed (H10 confirmed; $p < .001$). Given that retailers differ in data analysis intensity on a 7-point scale, the coefficient of .328 implies that the customer knowledge effect varies more than two points because of this factor (on a 7-point scale). On

the other hand, membership information does not influence customer knowledge significantly (H9 rejected), suggesting that retailers do not exploit the customer information they gather. Saving features influence customer knowledge positively as well (H11a confirmed; $p = .030$), and the coefficient size is considerable ($\beta = .647$). We find no significant influence of a promotion feature and direct mailings on the loyalty program's enhancement of customer knowledge (H12a and H13a rejected). When checking for effects of market and organizational factors, we find that buying frequency positively influences the customer knowledge effect ($p = .050$), as well as centralization of the company ($p = .030$). Compared to a retailer operating in a sector in which customers buy with low frequency, a medium buying frequency leads to an increase of .44 points and high buying frequency of 1.06 points on the knowledge effect (of 7 points).

Customer loyalty is positively influenced by the usage of a saving feature (H11b confirmed; $p = .030$), but not influenced by a promotion feature (H12b rejected). The saving feature leads to an increase of the customer loyalty effect of almost a half point, which is a considerable effect size given that customer loyalty is measured on a 7-point scale. Sending direct mails to loyalty program members has also a considerable positive, but non-significant effect on customer loyalty (H13b rejected). In line with theoretical considerations, customer knowledge obtained from the loyalty program enhances the effect on customer loyalty (H14 confirmed; $p = .008$). For customer loyalty, it turns out that none of the market and organizational variables is significant.

The customer knowledge model includes database elements, which are not included in the customer loyalty model. To test if these variables are mediated by customer knowledge, we use the procedure proposed by Baron and Kenny (1986). We estimate a model for customer loyalty out of all variables included in either one of the two original regression models. We find insignificant effects for all variables not included in the customer loyalty model originally (data analysis, membership information, centrality, and buying behavior), which shows that customer knowledge has a complete mediating effect for these variables. That means for example that data analysis positively effects customer knowledge and thereby indirectly customer loyalty, but that it does not have an additional direct effect on customer loyalty.

Table 2.6 Determinants of loyalty program effectiveness

| | Loyalty Program Effects | | | | | | | |
| | Customer Knowledge | | | | Customer Loyalty | | | |
Variable	Hypothesis and Expected Sign	Coefficient	t-value	p-value[a]	Hypothesis and Expected Sign	Coefficient	t-value	p-value[a]
Constant		1.825	2.751	.004	3.923	10.08		.000
Database elements								
Data Analysis	H9: +	.328	4.629	.001				
Membership Information	H10: +	.076	.204	.430				
Reward Elements								
Saving Feature	H11a: +	.647	1.926	.030	H11b: +	.432	1.738	.043
Promotion Feature	H12a: +	−.056	−.177	.420	H12b: +	−.099	−.430	.334
Direct Mailings	H13a: +	.003	.090	.465	H13b: +	.206	.885	.185
Customer Knowledge					H14: +	.203	2.45	.008
Market and Organizational Factors								
Buying Frequency		.620	1.924	.031				
High		−.436	−1.103	.138				
Low		.186	1.906	.030				
Centralization								
Model Fit	$R^2 = .465$				$R^2 = .200$			

[a] One-sided tests if directional hypothesis was formulated.

2.6 Conclusions

2.6.1 Findings

Loyalty programs play an important role in retailing, but the retailers' perceptions on this marketing instrument have received scant attention on the literature. We propose and test a conceptual framework on the retailers' loyalty program adoption, and on their perceptions regarding loyalty program effectiveness. To test the formulated hypotheses, we surveyed 180 retail companies, 37 percent of which have a loyalty program. Overall, we find that customer, market, and organizational factors drive loyalty program adoption (research question 1). Contrary to loyalty program adoption, the perceived loyalty program effects are hardly affected by these factors. Instead, the perceived effectiveness of a loyalty program mainly depends on loyalty program rewards and analysis of customer purchase data (research questions 3 and 4). This overall pattern is in line with earlier findings in the literature on managerial decision making (e.g. Alavi and Joachimsthaler 1992; Wierenga and Oude Ophuis 1997).

Loyalty program adoption seems to be driven strongly by market standards. The percentage of competitors with a loyalty program is a strong driver of loyalty program adoption. Previous research has found that companies rely heavily on competitors' experiences with innovations (DiMaggio and Powell 1983), and tend to overreact on competitors' marketing actions (Leeflang and Wittink 1996). This may lead to sub optimal situations in which too many companies use loyalty programs. However, our analyses refute the argument that loyalty programs are ineffective if a large part of the market uses them (Dowling and Uncles 1997). That is, we find that the percentage of competitors with a loyalty program stimulates retailers to adopt a loyalty program also, but it does not affect loyalty program effectiveness.

Furthermore, companies are more likely to adopt loyalty programs when their customers differ strongly in terms of profitability. Customer diversity offers potential for a customer-centered approach, in which loyalty programs fit well (Sheth, Sisiodia, and Sharma 2000). However, we do not find that a company is more likely to adopt a loyalty program if strong differences exist in customer preferences. Exploiting diversity in preferences requires advanced data analysis and loyalty program design, which currently seems to be one bridge

too far for most retailers. Loyalty programs allow companies to differentiate between member customers with targeted promotions and actions, but only a few retailers currently use loyalty programs for that purpose. Hence, retail companies ignore part of the potential of loyalty programs to serve individual customers better.

Organizational factors play a secondary role in the retailers' loyalty program adoption. We do not find that technological skills play an important role in the decision to adopt a loyalty program. Less technological companies can probably adopt simpler systems. Further, our results show that centralized companies gain most from a loyalty program in terms of better customer knowledge. However, we do not find that centralized companies are more likely to adopt a loyalty program, which suggests that they undervalue the benefits of obtaining customer-specific information. Unlike much innovation literature (e.g. Frambach et al. 1998), we do not find a positive relation between company size and loyalty program adoption. For small companies loyalty programs are probably an attractive alternative to mass-market marketing such as newspaper and television commercials, in which they face even larger scale disadvantages. Further, the scale advantages of a loyalty program might influence especially the adoption decision of very small retail companies, which are not included in our sampling frame. Customer orientation is the only organizational factor that strongly enhances loyalty program adoption. Previous research already found that customer orientation enhances the adoption of database marketing by manufacturers (Verhoef and Hoekstra 1999). Our findings confirm the proposition that customer orientation put a company in a better position to take advantage of the benefits of a loyalty program.

Our findings indicate that retail companies make limited use of the potential of a loyalty program, with only a few reward elements frequently used. Many loyalty programs provide saving features (77%), promotion features (62%), and direct mailings (74%) to members. Only a few loyalty programs use other elements, such as credit cards or demonstrations. For the design elements used, we find that the saving feature plays a crucial role in the effectiveness of the loyalty program, both in gaining insight in customers and in enhancing loyal buying behavior. A promotion feature does not generate any effect. This may be caused by the high membership rates of many loyalty programs, which diminish the power of distinguishing between members versus non-members. A more powerful strategy could be to differentiate between members themselves and to target specific member segments.

Data analysis is crucial if a firm is to understand its customers. Further, data usage enables implementation of targeted actions that enhance loyalty, such as direct mailings (Bult and Wansbeek 1995). We find that direct mailings improve customer loyalty considerably, but the effect is not significant. This suggests that some companies send out direct mailings without careful targeting, which relates again to poor data analysis.

2.6.2 Managerial implications

- Do not blindly copy your competitors

A company should be careful with copying competitors' behavior. On the one hand, using competitors' experiences could generate fruitful information and improve the loyalty program decision. However, companies might become irrationally worried about staying behind on the competition. Our analyses show that retail sectors which are relatively similar differ widely in loyalty program adoption rates. This suggests that retailers strongly follow adoptions of competitors.

On the other hand, our results show that the effectiveness of a loyalty program does not depend on competitors' loyalty program adoptions. In other words, loyalty programs appear to be mainly defensive rather than offensive. Therefore, retail companies with loyalty programs should not worry about competitive imitations too much.

- Reconsider loyalty program design

Companies that have adopted a loyalty program should carefully plan the exact design of the loyalty program. Our analyses show that a promotion feature under a loyalty program does not generate large effects on customer loyalty and customer knowledge. A company should consider abolishing price promotions given under its loyalty program. Alternatively, a retailer could target price promotions to specific customer segments, in this way better exploring the loyalty program's opportunity for differentiation. Segmentation could be based on profitability, but also category penetration, cross-category buying, brand choices, etc.

Further, our analyses show that a saving feature enhances effectiveness considerably. A saving feature gives explicit loyalty incentives by rewarding loyal members best. Rather than giving value away in the form of price promotions, a retail company could better reward loyalty program members through saving features. To retain the advantages of rewards

connected to a firm's own assortment (Roehm, Bolman Pullins, and Roehm 2002), saving features could reward customers with free or discounted items from the product assortment.

- Use loyalty program data.

Many companies introduce loyalty programs with the goal of obtaining customer-specific purchase data, but some companies do not use this information. Our study shows the importance of studying this information to improve knowledge of the customer base. We also show that targeted actions, which require data usage, such as direct mailings, could enhance customer loyalty. Therefore, companies are advised to explore and exploit definitely make use of their data.

2.6.3 Limitations

Our study focuses on loyalty programs in the retail sector, where they are widely used. However, loyalty programs also appear in other industries, such as airlines, lodging (Bell et al. 2002), and financial services (Verhoef, Franses, and Hoekstra 2001). Given differences in market structure and product type, the drivers and effectiveness of loyalty programs could be different in these industries. For example, in the airline industry large customer differences exist in flying frequency, which partly relates to the distinction between business and private customers (Kearney 1990).

On average, the retailers in our sample make only limited use of the opportunities of loyalty programs. Loyalty programs mainly provide saving features, promotion features, and direct mailings. The literature mentions several other possibilities, such as silver, golden and platinum customer tiers (Rust, Zeithaml, and Lemon 2000) or multi-provider loyalty programs (Dowling and Uncles 1997). We could not test the effectiveness of these program designs. Future research could try to identify cases of more advanced loyalty program design or to conduct experimental research to test their effectiveness.

Finally, we studied the effects of loyalty programs but did not consider their costs. The costs of rewarding members differ between loyalty programs because of differences in program design and intensity of data analysis. To make a balanced choice on loyalty program design, a company should account for these cost differences.

Chapter 3

Do Loyalty Programs Enhance Behavioral Loyalty? A Market-Wide Analysis Accounting for Endogeneity

3.1 Introduction

The effect of loyalty programs on behavioral loyalty remains topic of debate. Loyalty programs may not have the miraculous power to turn all disloyal customers into loyals or to make customers exclusively loyal. This does not mean that loyalty programs cannot be a useful tool. As expressed by Koslowsky (1999): "While none of these programs result in a perfect world, each can generate that little extra that can provide the retail marketer with potential tactical weapons". A supermarket manager describes the added value of its loyalty program as follows: "You don't have 100 percent of a share of a customer's wallet. Customers shop about five times a month. Maybe you'll get three of those trips and the competition gets two. The loyalty program eliminates at least one shopping trip you weren't getting and creates an additional shopping trip to your store" (Cioletti 2001). So, it is important to correctly quantify that 'little extra' that a loyalty program can offer to a retailer.

Extant empirical research provides mixed evidence of loyalty program effectiveness. Some previous studies found positive effects of retail loyalty programs on customer purchasing (Bolton, Kannan, and Bramlett 2000; Verhoef 2003), whereas others report effects, which are limited to absent (Mägi 2003; Sharp and Sharp 1997). This ambiguity relates, at least partly, to the fact that data and methodology limitations hinder proper assessment of the effects of loyalty programs.

An important methodological issue arises, because a positive relationship between loyalty program membership and customer purchasing does not prove the loyalty program's effectiveness, as the direction of the causality is unclear. Loyalty programs aim to enhance customer purchasing, but it is particularly the company's best customers that are most likely to subscribe as members. It is thus unclear to what extent differences between members and

non-members are driven by the effects of the loyalty program itself or by the selection of most loyal customers into the loyalty program. Existing research has ignored this causality, or endogeneity problem, as argued by Bolton, Lemon, and Verhoef (2002) (see also Chapter 1). They argue that a thorough solution for the endogeneity problem is needed before any conclusion can be made on loyalty program effectiveness. The study presented in this chapter provides such a solution.

Concerning data requirements, a proper assessment of loyalty program effectiveness requires competitive information, both on customer purchases at the competitors and the marketing-mix usage of competitors. In retailing, most consumers buy frequently from different stores (Drèze and Hoch 1998) and make transactions varying in size (Kahn and Schmittlein 1992). As proposed by several authors (Ailawadi, Lehmann, and Neslin 2001; Berger et al. 2002; Verhoef 2003), the share-of-wallet that a customer gives to a company under such circumstances is the appropriate indicator of behavioral loyalty, reflecting the divided loyalty and fuzzy choices of most consumers (Rust, Zeithaml, and Lemon 2000). To model share-of-wallet appropriately, researchers need market-wide marketing instruments to explain the relative attraction of the several retail companies. One important marketing-mix instrument to account for is competitive loyalty programs, because multiple loyalty program memberships are widespread nowadays (Mägi 2003; Passingham 1998). Existing studies make at best limited use of competitive information on purchasing, loyalty program memberships and other marketing mix elements (Mägi 2003; Verhoef 2003). This study is the first to use complete market-wide data.

Experimental research indicates that the effectiveness of loyalty programs depends on the program's design (Kivetz and Simonson 2002; Roehm, Bolman Pullins, and Roehm 2002; Van Osselaer, Alba, and Manchanda 2003). Specifically, considerable attention has been given to the trade-off between immediate rewards (through promotion features) and delayed rewards (through saving features) (Roehm, Bolman Pullins, and Roehm 2002; Yi and Jeon 2003; Zhang, Krishna, and Dhar 2000). Differences in program effectiveness as found in existing empirical field studies may be driven by differences in design components. A call has been recently made for further research on the effectiveness of various loyalty program designs (Jain and Singh 2002). Though experimental research exists on this issue, no evidence from field data is available. Such a comparison of the effectiveness of loyalty program

designs would require data on more than one loyalty program simultaneously.

In this chapter, we assess the effects of loyalty programs. To summarize, the study contributes to the existing literature in the following ways:

1.   The study provides an estimate of loyalty program effects that accounts for causality problems between loyalty program membership and purchase behavior. We do so by using instrumental variables such as loyalty program enjoyment and privacy concerns to explain the loyalty program membership decision.

2.   The study uses market-wide data on competitive purchasing and marketing-mix instruments such as competitive loyalty programs. Competitive purchasing information enables us to use share-of-wallet as the dependent variable of key interest.

3.   The study uses loyalty program design characteristics to explain differences in loyalty program effectiveness.

The study covers several research questions presented in Chapter 1. The core of this study lies in assessing the effects of loyalty programs on customer loyalty, and by making cost calculations we investigate the profitability of loyalty programs, thereby covering research question 3 (*Which effects do loyalty programs have on purchase behavior and profitability?*). To do this appropriately, we also study factors that influence loyalty program adoption of customers, and thus address research question 2 (*Which factors drive customers to adopt retailers' loyalty programs?*). Finally, we take into account both loyalty program design elements and competitive loyalty programs, and thus address research questions 4 (*How does loyalty program design influence effectiveness*) and 5 (*How do competitors' loyalty programs influence effectiveness?*) as well.

This study uses household panel data from the Dutch supermarket industry. Seven of the twenty largest Dutch supermarket chains use loyalty programs. For 1926 households, information is available on purchase behavior and loyalty program memberships in all twenty supermarket chains during a two-and-a-half-year period. Substantial overlap of loyalty program memberships exists, and about 50% of the households have multiple memberships. To assess the effects of loyalty programs on purchase behavior we use a Tobit-II model with instrumental variables (IV) (Woolbridge 2002, p.567-571). The Tobit-II model includes a selection equation for supermarket choice, and an attraction specification for share-of-wallet. We account for endogeneity by first estimating a model for loyalty program membership

using instrumental variables, and then imputing predicted rather than observed loyalty program memberships in the Tobit-II model. Finally, we control for relevant marketing-mix factors of supermarket chains, and socio-demographic characteristics of panel households. We find that loyalty programs increase share-of-wallet by 8.3% (1.8 percent points) on average.

The remainder of this chapter is structured as follows. Section 3.2 develops a conceptual framework on the relation between loyalty programs and purchase behavior, and formulates hypotheses. Section 3.3 discusses the data of our empirical study, and section 3.4 describes the Tobit-II model with instrumental variables. A presentation of the results follows (Section 3.5), and we conclude with a discussion (Section 3.6).

3.2 Conceptual Framework

3.2.1 Effectiveness measurement: the causality puzzle

A unique trait of a loyalty program is that customers decide explicitly whether or not to participate in the program. Retailer companies can assess program effectiveness by evaluating behavioral differences between member and non-member customers. However, a simple comparison of the differences in purchase behavior between these groups may lead to an overestimation of the loyalty program effect, because customers do not become loyalty program members randomly. Rather, a customer becomes a member of the loyalty program if the expected benefits are higher than the expected costs, a choice that is partly driven by the attraction of the chain itself to a customer (Mauri 2003). For example, customers who live close to a given supermarket and already frequent the chain may derive relatively high benefits from the loyalty program without even changing their behavior. Thus, because loyal customers derive the highest benefits from a loyalty program, those customers who are already loyal are most likely to participate (Bolton, Lemon, and Verhoef 2002).

From an econometric perspective, this comes down to a causality or endogeneity problem. The relevant issue is that in a model with customer purchases as the dependent variable, and loyalty program membership as an independent variable, the loyalty program membership variable and the error term of the model are positively correlated. The violation of the model assumption of independence between the independent variables and the error

term leads to biased parameter estimates (Greene 2000, p.370). Specifically, in case of a positive correlation between loyalty program membership and the error term, the influence of loyalty program membership is overestimated (Verbeek 2000, p.121). Including additional explanatory variables that drive customer purchasing (such as location or price) may mitigate the problem, but the problem itself will not disappear until all variables playing a role in the purchasing decision are available. Because this is practically impossible, alternative solutions should be found to estimate the loyalty program effect unbiasedly.

A first option is to analyze changes in purchase behavior after a customer has entered the loyalty program. However, this does not solve the causality problem for two reasons. First, changes in loyalty program memberships can be endogenous as well. The drivers of the decision to become a loyalty program member could be factors that stimulate share-of-wallet as well, such as a residential move, the opening of a chain outlet nearby, a change in income, etc. Second, households that become loyalty program members long after the launch of the program are atypical. Allaway, Berkowitz, and D'Souza (2003) show that late adopters of a loyalty program live further away from the chain outlet, are less convinced of the program's benefits, and perceive a program membership as riskier. So because of potential endogeneity problems and non-representativeness of late adopters, we do not consider the analysis of loyalty program membership changes to be an appropriate reflection of program effectiveness.

A second option is to analyze store-level sales patterns as done by Sharp and Sharp (1997), and to compare these to norms, such as those provided by Dirichlet models. A caveat of this approach is that one cannot distinguish between the effects of the loyalty program and those of other marketing-mix elements. In the absence of household-level information, one cannot distinguish between households that are loyalty program members (and thus exposed to the program incentives) and others households (Bell and Lal 2002; Drèze and Hoch 1998; Sharp and Sharp 1997). In other words, household-level data are important for ascribing customer-purchasing patterns to loyalty programs.

The most general applicable solution is to use instrumental variables, as we do in this study. One or more variables (instruments) must be found that influence the loyalty program membership decision of a household, but that are also unrelated to the household's purchasing decision. In marketing, instrumental variables have recently been introduced in the area of

price promotions to model the endogeneity of a manager's price promotion decision (Chintagunta 2001; Villas-Boas and Winer 1999). However, the methodology could also be applied to household-level decisions. First, a model of loyalty program membership must be estimated, with the instruments and other available variables as explanatory variables. The predicted values from this model should then be imputed in the main model for customer purchasing as an independent variable (instead of the observed loyalty program memberships). The procedure will be discussed in further detail later in this chapter.

Figure 3.1 presents our conceptual framework, the components of which are discussed in the remainder of this section. We start by explaining our key dependent variable, and then discuss the loyalty program membership decision and loyalty program effects, followed by a presentation of other store and household characteristics in the framework.

Figure 3.1 Conceptual framework
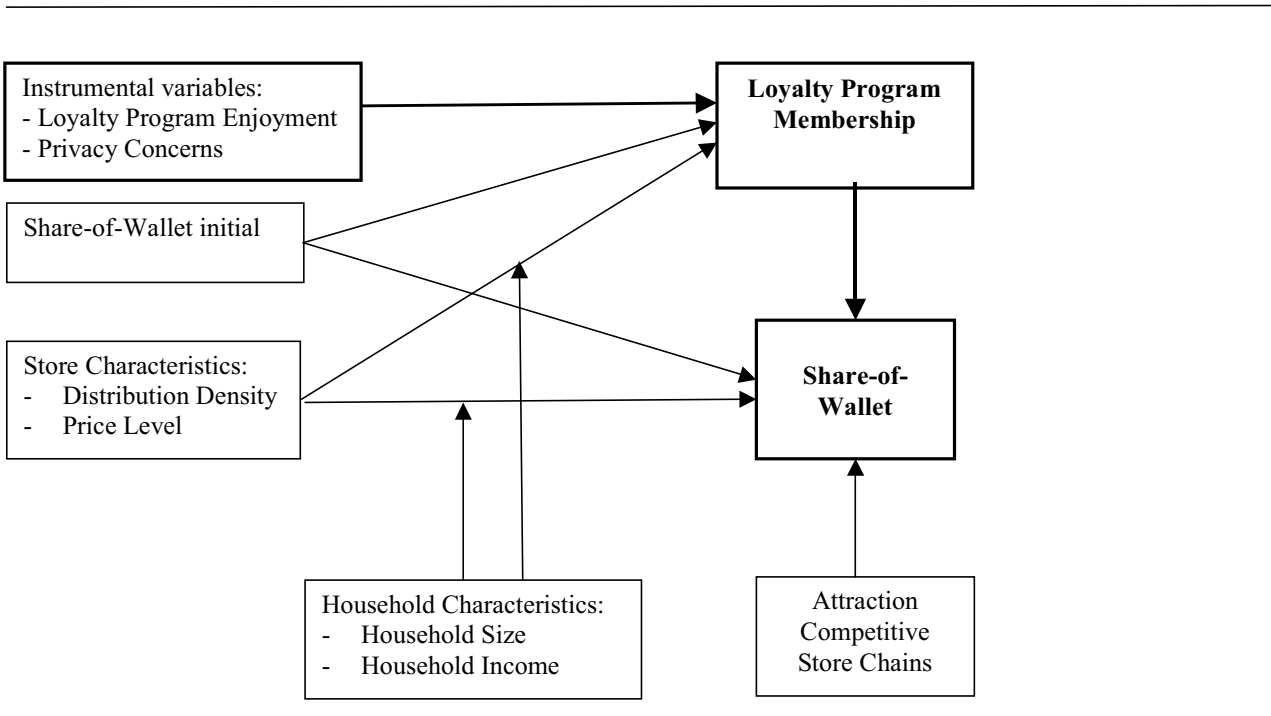
3.2.2 Customer loyalty

Loyalty programs aim primarily to stimulate customer purchasing at the retail company in a structural way, which comes down to improving behavioral loyalty. The marketing literature provides a wide range of loyalty measures (Odin, Odin, and Valette-Florence 2001), the

usefulness of which depends on the specific market and study objective. In grocery retailing, purchase behavior is characterized by high buying frequency and variation in basket sizes (Kahn and Schmittlein 1992). Further, consumers are often regular buyers at different companies (Kahn and McAlister 1997), a phenomenon referred to as polygamous loyalty (Dowling and Uncles 1997). Given these characteristics, share-of-wallet is the most suitable measure for behavioral loyalty (Berger et al. 2002; Mägi 2003). Share-of-wallet measures the share of category expenditures spent on purchases at a certain company, which integrates choice behavior and transaction sizes during a certain time period into one single measure. Equivalently, in brand management the share-of-category requirements is often used, calculated as the average proportion of the brand's customers' category purchases over all customers, as a measure of brand loyalty or even brand health (Ailawadi, Lehmann, and Neslin 2001; Bhattacharya et al. 1996).

The share-of-wallet a household gives to a store chain depends on its attraction to the household compared to the attraction of the competitors. In order to analyze the effects of loyalty programs on share-of-wallet, we need to understand 1) what drives customers to become loyalty program members, and 2) how loyalty program membership affects share-of-wallet.

3.2.3 Loyalty program membership

When deciding whether to participate in a company's loyalty program, a customer compares the expected benefits and costs. The economic benefits of a loyalty program increase with a customer's share-of-wallet with the company. The share-of-wallet a customer had with the company in the past is an indicator of the expected benefits s/he will derive from the loyalty program. The initial share-of-wallet is thus expected to be positively related to a customer's loyalty program membership decision. Further, existing research has found that some consumers intrinsically enjoy participating in marketing actions, such as coupons (Mittal 1994), price promotions (Chandon, Wansink, and Laurent 2000), or shopping in general (Reynolds and Beatty 1999). The same intrinsic enjoyment could exist for participation in loyalty programs. So, customers may derive non-economic benefits from a loyalty program membership, when they intrinsically enjoy loyalty program participation.

Most retail loyalty programs do not require membership fees, so that customers do not

face economic costs concerning a loyalty program membership. However, customers entering a loyalty program usually have to complete a subscription form in which s/he must provide personal data, such as address information and household composition. A company can use this information in combination with purchase data as registered through the loyalty cards to target households for direct mailings or to apply micro marketing. Some customers may not be very willing to provide personal information, especially if this concerns personal identifiers such as address information (Phelps, Nowak, and Ferrell 2000). This reluctance is caused by consumer's need for control and a negative attitude towards direct marketing (Phelps, D'Souza, and Nowak 2001). Some customers thus perceive giving away privacy as a non-economic cost, and will allow this cost to negatively influence loyalty program participation.

In sum, we advance the following hypotheses:

H1a: Initial share-of-wallet has a positive influence on the likelihood of a customer becoming a loyalty program member.

H1b: Loyalty program enjoyment has a positive influence on the likelihood of a customer becoming a loyalty program member.

H1c: Privacy concerns have a negative influence on the likelihood of a customer becoming a loyalty program member.

For methodological reasons (Woolbridge 2002, p.567-571), we also include in the model the available store- and household characteristics for loyalty program membership (see Figure 3.1).

3.2.4 Loyalty program effects

In essence, loyalty programs enhance customer loyalty because they increase the utility of the company's offering. Loyalty programs could enhance customer loyalty through several economic, psychological and sociological drivers. Two economic drivers particularly enhance the effectiveness of loyalty programs. First, a loyalty program provides member customers with economic value in the form of *rewards*. In general, the magnitude of the rewards relates positively to the share-of-wallet to the company, thus providing incentives for customer loyalty. Second, loyalty programs create *switching costs*, because loyalty program members

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lose value if they stop purchasing from the company. The value lost could consist of saving point credits or a good purchasing track record that ensures privileges. Especially economic-oriented research has used this argument as a rationale for the existence of loyalty programs (Kim, Shi, and Srinivasan 2001; Klemperer 1987; Kopalle and Neslin 2003). Because of the rewarding and especially switching costs, a loyalty program can create a certain degree of calculative commitment or stickiness in customers' relation with the company (Johnson et al. 2001). Calculative commitment can be defined as the extent to which consumers perceive the need to maintain a relationship, given the significant termination or switching costs associated with leaving (Geyskens et al. 1996).

Further, several psychological drivers can enhance customers' calculative commitment, and make loyalty program effects stronger than could be expected from a purely economic point of view. First of all, consumers appreciate rewards -- not only absolutely, but also relatively to other consumers (Feinberg, Krishna, and Zhang 2002). Knowing that you are provided with better value than others excites feelings of being a preferred or special customer -- even if the group of others is relatively small. Given that loyal customers receive the most rewards, this will enhance feelings of fairness and customer loyalty as a result. Second, loyalty program incentives can induce smart shopper feelings (Kivetz and Simonson 2003), and pride about being economical (Chandon, Wansink, and Laurent 2000; Schindler 1998). Consumers may derive a special sense of satisfaction at having achieved or won something without having to pay the normal price or currency. For some of them, the effort of obtaining the reward may even justify luxury consumption (Kivetz and Simonson 2002). Third, existing research shows that customers overvalue the rewards to be obtained, as they tend to maximize the value offered by the medium (the loyalty program), rather than the final outcome (Hsee et al. 2003; Van Osselaer, Alba, and Manchanda 2003). This implies that customers aim to maximize promotions and saving points, where it would be rational to assess the utility of the final product minus the disutility of its costs.

Loyalty programs can also have sociological effects. They create affective commitment, a generalized sense of positive regard for, and attachment to, the organization (Geyskens et al. 1996). In this way, loyalty programs not only buy, but also earn, customer loyalty (Edvardsson et al. 2000). DeWulf, Odekerken-Schröder, and Iacobucci (2001) show for relational investments in consumer-firm relationships the existence of a reciprocity norm:

customers evoke obligation towards those who treat them well or provide value. In addition, customers that become members of the loyalty program are likely to identify more strongly with the company, because the membership relates them to a group of privileged customers (Bhattacharya, Rao, and Glynn 1995; Oliver 1999). The need to belong to groups is a fundamental human motivation (Baumeister and Leary 1995), and identification with *commercial* organizations is intensifying due to the growing centrality of consumption and materialistic desires in society (Fournier 1998; Muniz and O'Guinn 2001). Most loyalty programs use loyalty cards, and this explicit token of membership strengthens a customer's sense of belonging to the company, or makes their attitude towards the company more accessible (Dick and Basu 1994). Bhattacharya and Sen (2003) propose that strategies to develop customer identification are especially beneficial in industries where consumers purchase frequently, and differentiation between suppliers is low.

Overall, a large number of drivers exist that can make a loyalty program effective. This research does not aim to assess the relative importance of each driver, but rather to give a rationale for loyalty program effectiveness, and to provide a proper empirical assessment of this. The importance of the drivers might also depend on loyalty program type (Bolton, Kannan, and Bramlett 2000). The focus of our research is on loyalty programs that provide predominantly economic (tangible) rewards, but enrich them with social (intangible) rewards. Because the drivers discussed all point in the same direction, we hypothesize:

H2:   A loyalty program membership enhances the share-of-wallet of a household with the company.

3.2.5 Loyalty program design

The effectiveness of a loyalty program is likely to depend on its design (Dowling and Uncles 1997; Jain and Singh 2002). An important element is how much rewarding value the loyalty program gives to its members, and in which form. Key design elements of the loyalty program are the promotion and saving features (Yi and Jeon 2003).

A promotion feature gives price discounts on certain items of the assortment exclusively for loyalty program members. In this way, a promotion feature supplies member customers with immediate rewards for their purchases (Yi and Jeon 2003), and provides them with privileges over non-members. The promotion feature stimulates customers to purchase

the items on promotion, to buy categories they usually buy in other stores (Drèze and Hoch 1998) or to show stockpiling behavior (Chandon, Wansink, and Laurent 2000).

A saving feature gives loyalty program members saving points, dependent on the monetary amount spent at the company. A program member can redeem these points for a reward, such as a free product, after s/he has reached the minimal redeeming threshold. This threshold is typically such that the customer must spend a considerable total monetary amount. The saving feature stimulates customers to show loyal purchase behavior in order to reach certain levels of saving points. Further, a saving feature can create switching costs. When a consumer stops buying he loses the saving points enclosed in his saving balances.

The question whether either a saving feature or a promotion feature is more effective is theoretically undefined. A saving feature stimulates purchases of the entire assortment and not only of specific items (as the promotion feature does). Very importantly, a saving feature creates switching costs (Zhang, Krishna, and Dhar 2000). Obtaining saving rewards requires considerable consumer effort, so that we expect stronger feelings of uniqueness and pride (psychological drivers). A price promotion has, in contrast with saving points, a direct negative effect on share-of-wallet. On the other hand, the perceived value of the promotion feature is found to be higher than an equivalent saving feature among consumers, since customers prefer to obtain a reward immediately over getting it sometime in the future. (Yi and Jeon 2003). Further, the promotional feature directly supports the supermarket chain's value proposition (Dowling and Uncles 1997). In sum, both saving and promotion features contain attractive aspects to consumers, so that no ex-ante expectation exists in favor of either the saving or the promotion feature.

We hypothesize:

H3a: Promotion rewards enhance the effect of loyalty programs on share-of-wallet.

H3b: Saving rewards enhance the effect of loyalty programs on share-of-wallet.

H3c: Promotion rewards and saving rewards are equally effective in enhancing share-of-wallet.

3.2.6 Store variables

A store chain's attractiveness depends on the benefits of the attributes offered by the store. Two important store attributes are location and price level (Kahn and McAlister 1997).

Existing research has found that households with different socio-demographic characteristics derive different benefits from the same store attributes, e.g. because of variation in opportunity costs (Bell and Lattin 1998). We expect therefore that the relationship between a store variable and share-of-wallet is moderated by socio-demographic characteristics[1].

Location relates to the transaction costs of shopping, because households incur travel costs to visit a store. A high density of outlets of a chain enhances its attraction, because the expected travel costs are lower. However, a high outlet density is less important if the potential benefits of visiting a store far away are higher. These expected benefits are higher for large basket sizes, which are associated with large households (Bell and Lattin 1998). For high-income households, different effects might counterbalance each other: these households have high marginal costs of time, but the possession of cars and storage space diminish travel costs and increase basket sizes (Mittal 1994). In sum, we expect a positive effect of outlet density on share-of-wallet that is moderated negatively by household size and undeterminably by household income.

We expect a negative relation between a chain's price level and share-of-wallet, because high prices relate to higher shopping costs. Low-income households are especially price sensitive because of their limited budgets. Further, high prices might also correlate with better quality and luxury assortment, which is especially appreciated by high-income households (Mulhern 1997). Regarding household size, large households can benefit more from low prices because of larger basket sizes (Bell and Lattin 1998). In sum, we expect a negative effect of price on share-of-wallet that is positively moderated by household income and negatively moderated by household size.

Several other store variables and household characteristics drive the attraction of a company. To account for the remaining heterogeneity in households and store chains, we include the share-of-wallet in the initialization period previous to the modeling period as an explanatory variable (Bucklin, Gupta, and Siddarth 1998; Guadagni and Little 1983).

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[1] The nature of the model (attraction model) prevents us from including the main effects of socio-demographic variables, because they drop out of the model (see also model section).

3.3 Data Description

3.3.1 Data

To test the hypotheses, we conduct an empirical study on the Dutch supermarket industry. Consumers make transactions in supermarkets frequently, and face only low switching costs, which make supermarkets an appropriate market for our study of loyalty programs. We have panel data on purchase behavior of 1926 Dutch households in supermarkets during a period of 2.5 years. The panel members provide purchasing information by scanning all their supermarket receipts with a home scanner. The data cover the period January 1998 until July 2000, and were provided by *GfK PanelServices Benelux*. The first six months are used as an initialization period. For each of the remaining two years, we know for each household the total yearly expenditures in each supermarket chain. We use data on expenditures in the largest twenty supermarket chains; these comprise 92.8% of the entire market sales.

Seven of the twenty supermarket chains have loyalty programs, all of which use loyalty cards for identification and registration. Typically, a loyalty program provides saving rewards through a saving points feature and price discounts through a promotion feature. The saving feature provides saving points linearly dependent on the amount spent. Members must spend a considerable amount to reach the minimal redemption threshold and to exchange points for gifts or free products. The promotion feature gives price discounts on a varying set of items of the assortment, only announced within the store. On their receipts, customers find the number of points saved and the total discount earned with the loyalty card. In addition, the specific loyalty programs give also other rewards such as lotteries, direct mailings or member web pages. Both large and small supermarket chains have introduced loyalty programs, and some of the largest chains in the Netherlands do not have a loyalty program.

Table 3.1 shows the loyalty programs with their designs, the market shares of the supermarket chains, and some customer base characteristics. The customer base of a supermarket chain is defined as those households that visited the chain at least once during a certain year. Consumers visit on average 4.2 different supermarket chains per year (median = 4). We limit the discussion of the loyalty program design to the promotion and saving features, because no systematic variation of interest exists for the other design elements.

Panel households complete a yearly questionnaire in which they report on their loyalty

program memberships at supermarkets. On average, 67% of the customer base are loyalty program members, but this number varies between supermarket chains from 52% (Konmar) to 83% (Albert Heijn). Most panel households do not change their loyalty program memberships during the observation period, but some households enter or quit a loyalty program. About 88% of the panel households are members of at least one supermarket loyalty program. The duplication rate of loyalty program memberships is substantial: 33% of the panel households have two loyalty programs, 16% have three, and 4% have four or more loyalty programs. On average, a household holds 1.68 loyalty program memberships. The questionnaires were administered in January 1999 and 2000, and the information from each questionnaire is applied to a yearly interval, starting six months before until six months after measurement. To operationalize all variables, an extensive additional data collection took place, which we discuss below (Appendix C provides an overview of the used data sources).

3.3.2 Dependent variable

We measure purchase behavior as the share-of-wallet in a supermarket chain in a specific year:

$SOW_{ist} =$ Share-of-wallet of household i in store s during year t,

$i = 1, \ldots, I; I = 1926$ (households),

$s = 1, \ldots, S; S = 20$ (supermarket chains),

$t = 1, \ldots, T; T = 2$ (years).

Table 3.1 Information on supermarket chains with a loyalty program

Supermarket Chain	Loyalty Program	Saving Rate	Discount Rate	Market Share %	Market Share Rank	# Stores visited	% Loyalty Program Members	# Competitive Cards held by Loyalty Program Members
	Loyalty Program			**Market Share (in 2000)**			**Customer Base Characteristics (Based on Panel Households)**	
Albert Heijn	LP1	1.0%	4%	24%	1	4.56	83%	1.02
Super de Boer	LP2	.5%	0%	9%	3	5.04	60%	1.38
Edah	LP3	2.0%	5%	8%	4	5.07	76%	1.48
Integro	LP4	.6%	2%	7%	6	5.18	52%	1.54
Konmar	LP5	.8%	5%	3%	9	5.53	52%	1.89
Jan Linders	LP6	.5%	9%	1%	17	4.95	74%	1.67
COOP	LP7	4.0%	3%	1%	18	5.08	68%	1.61

3.3.3 Independent variables: Loyalty program memberships

We have information on loyalty program memberships of households in each of the seven loyalty programs. As discussed, we need instrumental variables that can explain loyalty program membership. We use information from a survey held in November 2000 among the households in the panel to obtain the variables loyalty program enjoyment and privacy concerns. Loyalty program enjoyment is measured by three items (Cronbach's alpha = .79), and privacy concerns by a single item (see Appendix D). In sum, the following loyalty program variables are introduced:

$LP_{ist} =$ 1, if supermarket chain s has a loyalty program and household i is member during year t; 0 otherwise;

$ENJOY_i =$ Enjoyment of loyalty program membership by household i;

$PRIV_i =$ Privacy concerns of loyalty programs by household i.

3.3.4 Independent variables: Store characteristics

We include the store characteristics location and price level as independent variables in our model. We obtained the number of outlets of a supermarket chain in each of the twelve provinces of the Netherlands in 2000 from *Elsevier Business Information*. Some supermarket chains are exclusively located in a limited number of provinces, while others are available nationwide. For each province, the distribution density is measured as the number of outlets of a supermarket chain divided by the sum of outlets over all chains. This measure is applied to an individual household, based on its province of residence.

We use Dutch Consumer Reports to determine the price level of the supermarket chains. The Dutch Consumer Association regularly compares the price of a fixed basket across all large supermarket chains, with a sample of five outlets per chain. We construct a categorical price variable with three levels (low, medium, high), in which all levels include approximately the same number of chains (8, 7, 8). In sum, we introduce the following set of store characteristics:

$DENS_{ist} =$ Number of outlets of supermarket chain s as a fraction of the total number of supermarket outlets, in the province of residence of household i in year t;

$PH_{st} =$ 1 if supermarket chain s is high-priced during year t; 0 otherwise;

$PL_{st} =$ 1 if supermarket chain s is low-priced during year t; 0 otherwise.

3.3.5 Independent variables: Household heterogeneity

Our model accounts for both observed and unobserved household heterogeneity. Socio-demographic information is available on household size and net household income of panel members[2]. The socio-demographic variables are included in the model as moderators of the store variables. The variables household income and household size are measured as deviations from the sample average. By operationalizing the variables in this way, the main effect of a store characteristic measures the effects for an average household. To account for unobserved heterogeneity, we include share-of-wallet during the initialization period as an additional explanatory variable. No random effects are used in our model, due to the limited number of observations per household (two).

We therefore introduce:

$HHSIZE_{it} =$ Number of persons in household i in year t minus average number of persons in a household;

$HHINC_{it} =$ Monthly net income in 1,000 Euros of household i in year t, minus average monthly household income;

$SOWI_{is} =$ Share-of-wallet of household i in store s during the initialization period.

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[2] We tried to include additional household characteristics in the model, such as the presence of young children in the household and the educational attainment of the housewife. Because none of the characteristics showed significant effects and theoretical arguments for them were not very strong, we dropped them from the final model.

3.4 Model

A model on the effects of loyalty programs on share-of-wallet yields specific challenges. To be logically consistent, the model must produce estimates between 0 and 1 (*range constraint*), and the sum of estimates over all stores must equal 1 (*sum constraint*) (Hanssens, Parsons, and Schultz 2001, p.121). Because a linear regression model does not meet these constraints, an attraction model is used instead. Attraction models have been widely used for modeling market shares (Leeflang et al. 2000, p.171), but they can also be applied to household-level share-of-wallets. The basic idea is that the share-of-wallet of a store depends on its relative attraction to a consumer:

$$(3.1) \qquad SOW_{ist} = \frac{A_{ist}}{\sum\limits_{s=1}^{S} A_{ist}}.$$

The attraction of a store (A_{ist}) is a function of loyalty program membership and store characteristics[3]. We specify the attraction function as a Multi Nominal Logit Model, so that it becomes:

$$(3.2) \qquad A_{ist} = \exp(\beta_1 + \beta_{2s}LP_{ist} + \beta_{3it}DENS_{ist} + \beta_{4it}PH_{st} + \beta_{5it}PL_{st} + \beta_6 SOWI_{is} + \nu_{ist}),$$

with

$$(3.3) \qquad \beta_{mit} = \gamma_{m1} + \gamma_{m2}HHSIZE_{it} + \gamma_{m3}HHINC_{it}, \quad m = 3,4,5.$$

The attraction model is non-linear, and must be rewritten to enable estimation of the parameter coefficients. Using the method of log-centering (Nakanishi and Cooper 1982), we obtain a log-linear specification from which we can estimate the parameter coefficients:

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[3] Socio-demographic variables show up exactly in the same manner in the nominator and the denominator of the model, and cancel out in the equation. So, in our model socio-demographic variables are only included in interaction with the store variables.

$$(3.4) \quad \log \frac{SOW_{ist}}{(\prod_s SOW_{ist})^{1/S}} = (X_{ist} - \overline{X_{i.t}})' \beta_{ist} + u_{ist},$$

with $X'_{ist} = (1, LP_{ist}, DENS_{ist}, PH_{st}, PL_{st}, SOWI_{is})$,

and $\quad \overline{X'_{i.t}} = \frac{1}{S} \sum_{s=1}^{S} X'_{ist}$.

This model as presented in equation (3.4) suffers from endogeneity problems, because of the variable loyalty program membership, as discussed in a previous section. Further, in contrast to market shares, share-of-wallets will often be 0 (namely in case a specific chain is not patronized by a household during an entire year). An attraction model does not allow for these zeros, because the attraction of a supermarket chain cannot be zero (see equation (3.2)). To solve both issues, we follow the procedure for type-II Tobit models with endogenous variables as recently proposed by Woolbridge (2002, p.567-571).

The first step consists of predicting loyalty program memberships from instrumental variables, as discussed in the conceptual section of the chapter (Section 3.2). The explanatory variables in the model for share-of-wallet are included as well. The equation becomes:

$$(3.5) \quad \begin{aligned} LP_{ist} = \quad &\alpha_1 + \alpha_2 SOWI_{is} + \alpha_3 ENJOY_i + \alpha_4 PRIV_i + \alpha_{5it} DENS_{ist} + \\ &+ \alpha_{6it} PH_{st} + \alpha_{7it} PL_{st} + u_{ist} \end{aligned};$$

$$(3.6) \quad \alpha_{mit} = \varphi_{m1} + \varphi_{m2} HHSIZE_{it} + \varphi_{m3} HHINC_{it}, \quad m = 5, 6, 7.$$

Although loyalty program membership is a dichotomous variable, we should use linear regression analysis here (Woolbridge 2002, p.569). The model provides a linear projection for loyalty program membership from its instruments, which will be imputed in the main model that explains SOW_{ist}. In other words, we replace LP_{ist} in equation (3.2) with the predictions from the regression model in equation (3.5) ($\hat{LP}_{ist}$).

Another issue is that the dependent variable share-of-wallet is zero in a large number of cases, because a household patronizes only a limited number of supermarket chains.

Analyzing only those observations with a positive share-of-wallet is not a good solution. That is, share-of-wallet is positive conditional on the store being chosen, and we expect that the factors that influence a household's store choice influence the share-of-wallet of chosen stores as well. Therefore, the error terms of both models are most likely correlated, and if we do not account for this dependency, the parameter estimates of a model for share-of-wallet are likely to be biased (Greene 2000; Thomas 2001). A model must therefore combine both share-of-wallet and store choice.

A selection variable $CHOICE_{ist}$ is thus introduced, which indicates whether store s is in the choice set of household i during quarter t. We assume that a consumer chooses to visit a supermarket chain ($CHOICE_{ist}=1$) if the underlying utility $CHOICE_{ist}^*$ is positive. We let $CHOICE_{ist}^*$ be linearly dependent on the same store characteristics and household characteristics as used in the attraction function (see equations (3.2)-(3.4)), but replace share-of-wallet in the initialization period with a similar choice variable ($CHOICEI_{is}$). Further, the instrumental variable procedure of Woolbridge (2002) requires that we also include the two instruments ($PRIV_i$ and $ENJOY_i$) as explanatory variables. We combine store choice and attraction in a Tobit-II model (Verbeek 2000, p.209), which consists of a selection equation (store choice model) and a quantity equation (attraction model). The specification of the Tobit-II model is presented in equations (3.7)-(3.10).

(3.7) $\quad \log \dfrac{SOW_{ist}}{(\prod_s SOW_{ist})^{1/S}} = (X_{1ist} - \overline{X}_{1i.t})' \beta_{ist} + u_{ist}$ if $CHOICE_{ist}^* > 0$,

with $X'_{1ist} = (1, \hat{L}P_{ist}, DENS_{ist}, PH_{st}, PL_{st}, SOWI_{is})$

(3.8) $\quad SOW_{ist} = 0$ if $CHOICE_{ist}^* \leq 0$,

(3.9) $\quad CHOICE_{ist}^* = X_{2ist}' \gamma_{ist} + \varepsilon_{ist}$,

with $X'_{2ist} = (1, PRIV_i, ENJOY_i, DENS_{ist}, PH_{st}, PL_{st}, CHOICEI_{is})$

$$(3.10) \quad \begin{pmatrix} \varepsilon_{ist} \\ u_{ist} \end{pmatrix} = NID\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma_1^2, \sigma_{12} \\ \sigma_{12}, 1 \end{pmatrix} \right).$$

We set the constraint $\sigma_2 = 1$ to avoid identification problems (Verbeek 2000, p.208).

The Tobit-II model can be estimated with maximum likelihood. The likelihood of the model is (Verbeek 2000, p.211):

$$(3.11) \quad \begin{aligned} L &= \prod_0 p(CHOICE_{ist}^* \le 0) \prod_1 f(SOW_{ist} \mid CHOICE_{ist}^* > 0) P(CHOICE_{ist}^* > 0) \\ &= \prod_0 p(CHOICE_{ist}^* \le 0) \prod_1 f(SOW_{ist}) P(CHOICE_{ist}^* > 0 \mid SOW_{ist}) \end{aligned}.$$

Equations (12)-(14) show the expressions for the components of the likelihood function.

$$(3.12) \quad p(CHOICE_{ist}^* \le 0) = 1 - \Phi(X_{2ist}{}' \gamma_{ist});$$

$$(3.13) \quad f(SOW_{ist}) = \frac{1}{\sqrt{2\pi\sigma_1^2}} \exp\left\{ -\frac{1}{2}\left(\left(\frac{\log SOW_{ist}}{\log(\prod_s SOW_{ist})^{1/S}} \right) - (X_{1ist} - \overline{X}_{1ist})' \beta_{ist} \right)^2 / \sigma_1^2 \right\};$$

$$(3.14) \quad \begin{aligned} &P(CHOICE_{ist}^* > 0 \mid SOW_{ist}) = \\ &\Phi\left(\frac{X_{2ist}{}' \gamma_{ist} + (\sigma_{12}/\sigma_1^2)(\log SOW_{ist} - \log(\prod_s SOW_{ist}))^{1/S} - (X_{1ist} - \overline{X}_{1i.t})' \beta_{ist}))}{\sqrt{1 - \sigma_{12}/\sigma_1^2}} \right) \end{aligned}.$$

In sum, the model corrects for the interrelation between store choice and share-of-wallet, because both decisions are integrated into one model. The model accounts for the fact that households differ in the number of stores they visit, because the share-of-wallet of a

household is modeled as the attraction of the specific store divided by the sum of the attractions of the stores chosen by this particular household. In this way we also account for competitive loyalty programs, because these enhance the attraction of the competition. The model also corrects for endogeneity in the relation between loyalty program membership and share-of-wallet by including the predictions from instrumental variables as an explanatory variable, rather than loyalty program membership itself.

3.5 Results

3.5.1 Model estimates

As a first step we estimate a model of the loyalty program membership decision, with the instrumental variables as the independent variables. The results are presented in Table 3.2. The model is overall significant $(F(16205,13) = 168.29, p < .001)$, with a model fit of $R^2 = .20$.

Share-of-wallet in the initialization period has a significant positive influence on loyalty program membership $(\hat{\alpha}_2 = .483, p < .001)$, which confirms Hypothesis 1a. Loyalty program enjoyment positively affects loyalty program membership $(\hat{\alpha}_3 = .097, p < .001)$, meaning that enjoyment of participation in loyalty programs is a consumer trait that enhances participation in such programs (Hypothesis 1b confirmed). Privacy concerns influence loyalty program membership negatively $(\hat{\alpha}_4 = -.024, p = .012)$, implying that privacy concerns indeed withhold customers from participation in loyalty programs (Hypothesis 1c confirmed). Because both loyalty program enjoyment and privacy concerns are significant in the model, we may conclude that they are appropriate instruments to tackle the endogeneity problem.

Table 3.2 Explaining loyalty program membership by instrumental variables

Explanatory Variable		Parameter Estimate	t-Value
Constant	α_1	−.208	9.36***
SOWI	α_2	.483	33.70***
ENJOY	α_3	.097	8.88***
PRIV	α_4	−.021	−2.45**
Distribution Density (DENS)	φ_{51}	.776	10.90***
Price High (PH)	φ_{61}	.018	1.41
Price Low (PL)	φ_{71}	−.082	−3.08***
DENS*HHSIZE	φ_{52}	.018	.36
DENS*HHINC	φ_{53}	.069	1.38
PH* HHSIZE	φ_{62}	.043	4.37***
PH*HHINC	φ_{63}	−.015	−1.55
PL*HHSIZE	φ_{72}	.021	2.41**
PL*HHINC	φ_{73}	−.018	−.95
Model Fit:	R^2	.20	

*** $p < .01$ ** $p < .05$ * $p <. 10$ (one-sided tests)

In the second step we include the predictions from the regression model in the Tobit-II model. The Tobit-II model is overall highly significant ($\chi^2 = 16891.4, p < .001$). The likelihood ratio test of independent equations is rejected ($\chi^2 = 1121.2, p < .001$), implying that independent estimation of the selection and quantity equations would have led to significant biases. The pseudo R^2 of the model is .89, calculated in the manner proposed by Laitila (1993). The parameter estimates of the model are reported in Table 3.3. In the store choice equation, outlet density has a positive influence and price has a negative effect. Store choice is also strongly positively related to choice in the initialization period. Since the store

choice equation is merely included to obtain unbiased effect estimates for the share-of-wallet equation, discussion of the latter will be our focus.

We find that loyalty program membership influences store attraction positively for all seven loyalty programs, but that the effect is significant for only four loyalty programs (left-hand side of Table 3.3). The loyalty program coefficient is significant at the 5% level for two loyalty programs (LP3 and LP4), and even at the 1% level for two other loyalty programs (LP2 and LP7). This means that Hypothesis 2 is confirmed for four out of seven loyalty programs. As a benchmark, a model was also estimated with one pooled loyalty program membership variable. In this model, loyalty program membership has a significant positive effect $(\hat{\beta}_2 = .180, t = 4.82, p < .001)$, which also supports Hypothesis 2. However, a likelihood ratio test between this model and the model with store-specific loyalty program effects shows that loyalty program effects differ significantly between store chains $(LR = 111.3, p < .001)$. This justifies the inclusion of store-specific effects. All store characteristics and their socio-demographic moderators have the expected signs, but only price level and share-of-wallet in the initialization period have a significant effect on store attraction.

Table 3.3 Results of the Tobit-II model

Explanatory Variable:		ATTRACTION (Share-of-wallet)		CHOICE	
		Parameter Estimate	t-Value	Parameter Estimate	t-Value
Constant	β_1	.271	22.21***	−1.946	−61.68**
LP1	β_{21}	.064	1.15		
LP2	β_{22}	.511	8.03***		
LP3	β_{23}	.099	1.74**		
LP4	β_{24}	.153	2.00**		
LP5	β_{25}	.096	.87		
LP6	β_{26}	.114	.61		
LP7	β_{27}	.944	5.80***		
Distribution Density (DENS)	γ_{31}	.312	1.56*	7.378	54.38***
Price High (PH)	γ_{41}	−.083	−2.44***	−.1511	−7.74***
Price Low (PL)	γ_{51}	.172	5.72***	.124	7.72***
DENS*HHSIZE	γ_{32}	.114	.87	.130	1.39*
DENS*HHINC	γ_{33}	.097	.73	.274	2.79***
PH* HHSIZE	γ_{42}	−.014	−.62	−.010	−.72
PH*HHINC	γ_{43}	.015	.75	.002	.14
PL*HHSIZE	γ_{52}	.047	1.79**	.018	1.73**
PL*HHINC	γ_{53}	−.014	−.86	−.012	−1.14
SOWI	β_6	4.615	126.40***		
CHOICEI				2.446	139.25***
ENJOY				.032	1.94**
PRIV				−.018	−1.40*
	σ_{12}	−.390			
	σ_1	1.191			

*** $p < .01$ ** $p < .05$ * $p < .10$ (one-sided tests)

3.5.2 Effect size and profitability

The magnitude of the effects are not directly apparent from the parameter estimates, due to the non-linear nature of the model. Further, the coefficients represent the effects of variables on attraction and not on share-of-wallet, which complicates interpretations. To gain better insight into loyalty program effects, we perform what-if simulations for the households in the database. We compare the model predictions of the entire customer base of supermarket chain *s* for the present situation (the supermarket chain has a loyalty program) with the hypothetical situation in which the chain does not have a loyalty program. The hypothetical situation is simulated by removing the loyalty program from the chain under consideration, and keeping all other loyalty programs and explanatory variables unchanged. The model predictions thus represent the situation of a comparable chain in terms of the marketing mix, customer base, and competitive environment, but without a loyalty program. We calculate the average share-of-wallet, or the share-of-category requirements, for both situations. Subsequently, this is done for all supermarket chains with a loyalty program, and the effect size is calculated as the difference between the predicted share-of-category requirements in the present situation and the fictive situation without loyalty program (Table 3.4).

Our results show that the share-of-wallet of a company's customer base is positively related to the presence of a loyalty program. For all supermarket chains, the average predicted share-of-wallet of customers is higher when a loyalty program is available. Over all seven loyalty programs, the average share-of-wallet of the customer base is 0.018 (or 8.3%) higher compared to the situation without a loyalty program. Once again clear differences exist between loyalty programs, with effect sizes varying between 2.4% and 26.6%. The two loyalty programs with the highest parameter coefficients (LP2 and LP7) also show the highest effect sizes.

Table 3.4 Changes in share-of-wallet and (net) revenues of the customer base due to loyalty program

	Δ SOW*		Δ Revenues[**]	Δ Costs[**]	Δ Net Revenues[**]
	Change in Share-of-Wallet	% Change in Share-of-Wallet			
LP1	.009	3.0%	55.05	93.99	−38.94
LP2	.032	16.5%	188.24	5.81	182.43
LP3	.006	2.6%	37.21	93.06	−55.85
LP4	.008	3.3%	51.41	36.72	14.69
LP5	.006	3.6%	35.72	65.38	−29.66
LP6	.005	2.4%	34.77	101.86	−67.09
LP7	.060	26.6%	391.09	178.40	212.69
Average	**.018**	**8.3%**	**113.36**	**82.17**	**31.18**

[*] Average predicted change for a customer of the supermarket chain in Euros

[**] Average predicted change for a customer of the supermarket chain in Euros per year

Aside from share-of-wallet, how do loyalty programs affect customer revenues? Additional revenues depend on the loyalty program effect on share-of-wallet, but also on customers' total supermarket expenditures. The additional revenues from a household due to the loyalty program are calculated as the estimated effect of the loyalty program on share-of-wallet times the household's total supermarket expenditures. On average, a loyalty program yields €113.36 additional revenue per customer per year, but again strong differences exist between supermarket chains (see Table 3.4). Overall, loyalty programs that are effective in terms of share-of-wallet show large revenue effects as well -- but some deviations exist. In particular, LP1 generates relatively high additional revenues, because the customers of that chain (Albert Heijn) have supermarket expenditures higher than average.

Until now we have ignored the fact that loyalty programs relate to substantial costs. Marketers should consider the profitability of marketing actions, and should avoid giving away more value to customers than the additional revenues they receive back from them. The costs of rewards typically make up the bulk of any loyalty program's costs (Barlow 1999). Our data enable us to calculate if loyalty programs generate net additional revenues by

looking at the rewarding costs. The rewarding costs are calculated as the reward rate times the yearly purchase quantity per customer. The reward rate is the sum of the discount rate and the saving rate. The saving reward rate (SAV_s) is calculated as the monetary value given away per euro spent through the saving feature (Liston-Heyes 2002). Although the saving rewards consist of presents or free products, it was possible to determine their monetary value. We used web sites and contacted managers to obtain this information. Dutch Consumer Reports (2000) measured the discount rate ($DISC_s$) of the loyalty programs by taking a sample of loyalty program members' receipts and calculating the average discount percentage obtained per loyalty program. Table 4 provides the average yearly rewarding costs of the customers per supermarket chain. The net revenues, calculated as the difference between the average additional revenues minus the rewarding costs, show a mixed picture (far right-hand column of Table 4). On average, a loyalty program enhances the net yearly revenues of a customer with € 31.18. However, the loyalty programs of four out of seven chains lead to lower net customer revenues. One loyalty program with a significant positive effect on share-of-wallet appears not to realize positive net revenues (LP3).

3.5.3 Loyalty program design

Our analyses show a wide variation in loyalty program effectiveness between the different programs. This could very well be caused by differences in program design. To investigate this, we estimate a regression model with program effectiveness of the seven loyalty programs as the dependent variable, and discount rate and saving reward rate as explanatory variables. We use generalized least squares to account for differences in variances between loyalty program effectiveness coefficients and covariances between them (Verbeek 2000).

The model is significant $(F(7,3) = 6.627; p = .039)$, and the fit is high ($R^2 = .73$). We obtained the following estimated equation (t-values between brackets):

(3.15)
$$\hat{\beta}_s = .376 \quad -.100 * DISC_s + .133 * SAV_s + \omega_s .$$
$$\quad (3.67) \quad (-4.00) \quad\quad (1.90)$$

The analysis shows that a higher saving rate enhances loyalty program effectiveness $(\hat{\theta}_1 = .133; p = .028)$, so that we can confirm hypothesis 3b. On the other hand, the discount rate has a significant negative influence on loyalty program effectiveness $(\hat{\theta}_2 = -.106, p < .001)$, and we cannot confirm hypothesis 3a. We also find that the saving reward rate influences loyalty program effectiveness significantly better than the discount rate $(t_{\hat{\theta}_1 - \hat{\theta}_2} = 2.71, p = .004)$, which implies that we also have to reject the neutrally formulated hypothesis 3c. Companies seeking to realize maximal effectiveness of their loyalty programs should thus put more value into saving rewards than into promotion rewards[4]. Loyalty programs that give too much value through the promotion feature may become ineffective and may even generate negative net revenues. Apparently, the price reductions from the program lead to a decrease in share-of-wallet that is not compensated by an increase due to loyalty enhanced.

3.5.4 Benchmark model

We argue that accounting for endogeneity problems is important in order to obtain an unbiased assessment of loyalty program effectiveness. To explore to what extent ignoring endogeneity leads to substantial biases, we compare our model with a benchmark model that does not account for endogeneity. This model uses the observed loyalty program membership observations instead of the predictions from the loyalty program membership model. In the benchmark model all seven loyalty programs have a significant positive influence on share-of-wallet $(p < .001)$. In our original model this was the case for only four out of seven programs. Thus three chains would have incorrectly judged their loyalty programs as effective if endogeneity had been ignored.

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[4] We also estimated a model in which we added an interaction term between the saving and discount rates. The interaction term turned out to be insignificant, while the conclusions concerning the main effects remained the same.

Figure 3.2 Changes in share-of-wallet of the customer base due to the loyalty program
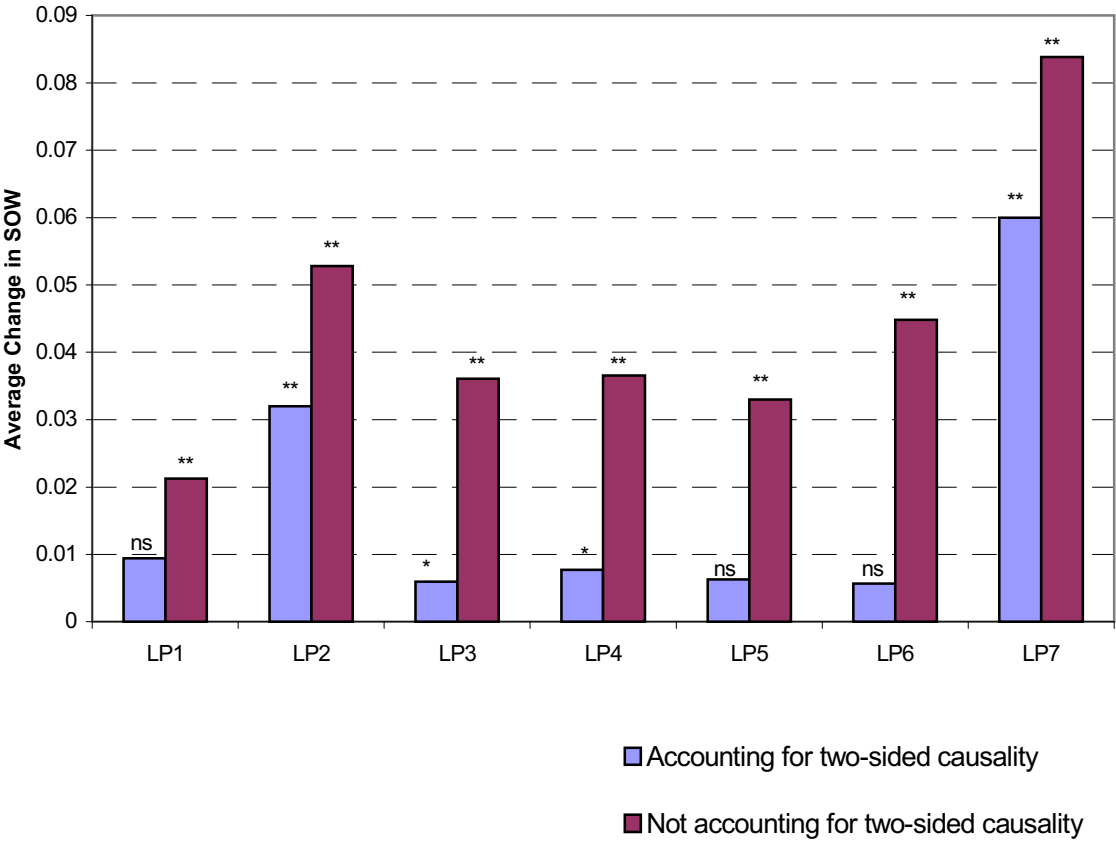
The estimates of the benchmark model were also used to simulate the effect on the average share-of-wallet (see graphical presentation in Figure 3.2). The benchmark model overestimates the loyalty program effect considerably for all seven programs. The effect size is between 1.4 and 7.9 times as high as the effect measured according to the original model. Thus, a model that does not account for endogeneity overestimates the loyalty program effect structurally. No systematic pattern is apparent, however, in the differences in the magnitude of the biases between the loyalty programs.

3.6 Discussion

3.6.1 Conclusions

We studied the effects of seven loyalty programs on share-of-wallet using market-wide panel data on supermarket purchases. Our study is the first to account for the two-sided causality between loyalty program membership and share-of-wallet by specifying a model for the loyalty program decision and using instrumental variables such as privacy concerns and loyalty program enjoyment. Therefore, we provide new insight in the research question to what extent loyalty programs have an effect on purchase behavior (research question 3). Loyalty programs are generally found to influence share-of-wallet positively. These effects despite a considerable number of households hold competitive memberships (research question 5). Moreover, we find that ignoring endogeneity leads to a substantial overestimation of the effects. Our model revealed that three out of seven loyalty programs in the study are not effective. We also show that privacy concerns withhold households to enter a loyalty program member, but enjoyment stimulates them to do so (research question 2). Giving rewarding value through direct discounts to program members seems to harm loyalty program effectiveness (research question 4). In terms of the profitability of loyalty programs, we find that four programs give more rewards away to their members than they earn back through additional customer revenues (research question 3).

3.6.2 Managerial implications

The results of this study could help managers to improve their decisions concerning loyalty programs. A company (re)considering the use of such a program should realize that loyalty programs are generally effective in enhancing share-of-wallet, but not for each store chain. A company that runs a loyalty program should therefore closely monitor its effectiveness. Our results show that this is not trivial. Loyalty programs aim to enhance customer purchasing, but the company's best customers are the most likely to subscribe as member. This leads to causality problems, which invalidate a simple comparison of purchase behavior of loyalty program members versus non-members. Valid assessments can be obtained only through

studies using market-wide data and extensive customer background information. Because individual companies possess mainly company-specific data, cooperation with market research companies that hold consumer panels is an option.

Further, a company should pay careful attention to loyalty program design, as this is proven to influence effectiveness. When focusing on the trade-off between direct and delayed rewards, managers are advised to invest rewarding money predominantly in delayed rewards, such as a saving feature. The loyalty program designs studied here are fairly basic and similar, and companies could gain through differentiation of their design. A more unique loyalty program could cause customers to specifically favor a particular loyalty program, to the extent of keeping them from competitive memberships as well. One direction worthy of further investigation is refinement of loyalty incentives by progressive saving point schedules or customer tiers (silver, gold and diamond members), as often seen in frequent flyer programs. Managers could use field experiments in test markets to measure customer reactions to such refinements.

Managers should also incorporate the costs involved in the loyalty program into their decision process. Our data reveal that four out of seven loyalty programs in the study are not profitable. Managers should avoid giving away more rewarding value than they earn through additional revenues that are generated. Where possible, companies should also aim to control the costs involved, e.g. by cooperating with other parties (Cigliano et al. 2000) .

Finally, our analyses show that privacy fears still prevent some customers from loyalty program participation. This implies that part of the customer base is not exposed to loyalty programs that could enhance customer loyalty. Current privacy legislation protects customer privacy to a great extent, and some of their fears might be irrational. In order to reduce customers' privacy fears, a retail company should invest in proper communication to customers about privacy protection guarantees and the constraints on data usage (Phelps, Nowak, and Ferrell 2000).

3.6.3 Limitations and further research

We undertook a market-wide study of all loyalty programs in the Dutch supermarket industry and found overall positive effects of programs on share-of-wallet. Given that the relationship

proneness and product category involvement of consumers is low in this industry, we could expect these effects to be even larger in other industries, such as clothing retailing (De Wulf, Odekerken-Schröder, and Iaccobucci 2001). Further, the loyalty programs are fairly basic and could be even more effective if the loyalty incentives are further refined (with progressive saving point schedules or customer tiers, for example). More research is required as well on the effects of social benefits (e.g. special shopping nights or newsletters for members) on affective commitment and customer loyalty.

We focus on share-of-wallet as our dependent variable, but loyalty programs might also affect total category expenditures. In fact, Kopalle and Neslin (2003) find that the elasticity of category demand can be one of the drivers of loyalty program success. This topic is definitely worth further empirical study. We believe that the issue of category elasticity is especially relevant for shopping goods (such as apparel), and less relevant for grocery products that are the topic of this study.

Further, share-of-wallet is a behavioral loyalty measure, and the development of attitudinal loyalty is also relevant (Yi and Jeon 2003). Behavioral loyalty not supported by attitudinal loyalty is spurious (Dick and Basu 1994), in the sense that it can easily be attacked by competitors. More research is needed into the extent to which attitudinal versus behavioral loyalty is enhanced by loyalty programs. Also of interest is the question to what extent the various drivers (economic, psychological, and social) play a mediating role in forming behavioral loyalty. In particular, it would be interesting to study the proposed development of belonging, identification or reciprocity. A fruitful extension to current research on these issues would be an examination of how customers deal with multiple memberships. How do positive attitudes towards a company develop if several companies provide loyalty benefits at the same time?

Another limitation of our study is that we were not able to incorporate all costs related to the loyalty program. We studied the profitability of loyalty programs by measuring the effects on purchase behavior versus the rewarding costs. However, a loyalty program also incorporates maintenance costs, such as operation of data warehouses, administration of rewards, logistics of availability of the rewards in the stores, etc. We had no access to estimates of such costs, which might diminish the profitability of the loyalty programs even further. On the other hand, we assumed that all saving points were redeemed, which is usually

not the case (Drèze and Hoch 1998). However, our current benefit-cost comparison may reveal to what extent additional revenues compensate the additional rewards given to the customer.

Some additional benefits may be derived from the loyalty program as well. Our study focused on loyalty programs as a means of improving loyal behavior, but did not consider that a company might be motivated to introduce a loyalty program in order to obtain purchase data (Day 2000; Mauri 2003).

Overall, this research shows that loyalty programs are effective, especially when they provide value through saving features. The effects are easily overestimated, however, when bilateral causality is ignored. Taking into account costs is essential to evaluate not only the effectiveness but also the profitability of loyalty programs.

Chapter 4

The dynamic influence of loyalty rewards on customer purchases

4.1 Introduction

The Customer Relationship Management paradigm has taught marketers not to consider and treat all customers as equal. Since existing customers are unequal in profitability, differentiation should ideally also occur between them (Bell et al. 2002; Rust, Zeithaml, and Lemon 2000). Recent developments such as e-commerce and loyalty programs have facilitated customer differentiation considerably. But it is not straightforward how customer differentiation should take place. On first sight, it seems optimal to spend most marketing efforts to the company's best customers (Mulhern 1999). Ideally, loyal customers enter a virtual cycle in which rewards and satisfaction with previous transactions enhance loyalty in future periods (Oliver 1999; Reinartz and Kumar 2000). Furthermore, rewarding customers for wishful behavior provides them with proper behavioral incentives (Reichheld 1996). On the other hand, it can also be argued that the best offers should be made towards disloyal customers, because they have lower reservation prices and are more price-sensitive than loyal customers (Feinberg, Krishna, and Zhang 2002). Moreover, because customer expenditures have a natural ceiling, disloyal customers may have better potential for incremental sales (Bolton, Lemon, and Verhoef 2002; Hogan et al. 2002). Overall, it is unclear whether the marginal benefits of rewarding customers are highest among the best-spending customers.

To illustrate the concept of differentiation between customers, consider the case of a clothing retailer that operates a loyalty program. This loyalty program offers a saving feature, through which member customers are rewarded with store vouchers for accumulated purchases in the past. The store voucher can be spent on the entire assortment, which avoids customer-specific preferences for it. The voucher's face value depends positively on the customer's accumulated saving points, so that most rewards are given to the best customers.

The loyalty program has in principle an indefinite lifetime, so that different "saving cycles" follow each other. The loyalty program functions thus as a long-term tool that aims to enhance customer profitability structurally. This chapter uses the case of the retailer's loyalty program to conduct an individual-level, longitudinal study of the effects of rewarding on purchase behavior. The goal: to obtain empirical evidence on whether or not it pays off to reward your best customers.

Extant empirical research has shown that a loyalty program can be effective in stimulating customer purchases (see Chapter 3). But studies assessing the overall effects of loyalty programs using aggregate purchase intervals (such as in Chapters 2 and 3, Bolton, Kannan, and Bramlett 2000; Mägi 2003; Verhoef 2003) reveal little about the effects of an individual customer-specific reward on distinct purchase components. Also unclear is whether loyalty rewards enhance customer lifetime value (Jain and Singh 2002). Taking a long-term perspective is important, because a solid customer base can function as a key profit driver to the company (Bell et al. 2002; Srivastava, Shervani, and Fahey 2000).

In order to explore the full potential of a loyalty program reward, this study focuses on a delayed product-related reward -- specifically, on a voucher to be used on the retailer's own assortment. The store vouchers are delayed rewards, because they are not given at every purchase occasion, but after a sum of purchases have been made (O'Brien and Jones 1995). Delayed loyalty rewards such as those given under a saving program are found to be more effective than immediate rewards such as price promotions (Chapters 2 and 3, Yi and Jeon 2003). Further, rewards stimulate customer loyalty most effectively when they are related to the core product, because these are better able to attract customer's interest and to support positive associations with the core product (Roehm, Bolman Pullins, and Roehm 2002). Overall, obtaining rewards can be highly appealing to customers (Hsee et al. 2003). They tend to respond positively to relatively small rewards offered by the store, which in return gains additional profits from the customer.

The store voucher as studied here resembles with a direct mail coupon, because both provide the customer with a discount certificate valid for a specified period of time through the mail. But several important differences exist as well. First, the voucher can be used on the entire assortment, whereas a coupon entitles the bearer to a stated saving on the purchase of a specific product (Kotler 1997, p.664). Second, the face value of the voucher is higher and the

redemption period is longer than for a typical direct mail coupon. NHC Promotion Services (2003) report an average face value of $ 1.25 for coupons, whereas the voucher we study has a minimal value of € 5. In addition, customers explicitly know how they are selected for the voucher and what determines the voucher's face value. Finally, the voucher is part of a continuous program, and the rewarding repeats itself over time.

Our study contributes to the literature in the following ways. Most broadly formulated, this study provides empirical insight into the question whether the marginal benefits of investing in good customers are indeed highest, as is often suggested. We do this through a dynamic customer-specific study on the influence of a store voucher given to customers as a loyalty program reward. Thus, more specifically, we obtain insight into the effects of the rewarding component of a loyalty program. Finally, at an even more specific level, we analyze store vouchers, a marketing-vehicle that has received little attention until now. Referring to the research questions formulated in Chapter 1, the study addresses the effectiveness and profitability of loyalty programs (research question 3). In contrast with Chapters 2 and 3, we now study the dynamic effects of a specific loyalty reward rather than the overall effect of a complete loyalty program at a certain point in time.

The rest of this chapter is structured as follows. Section 4.2 presents the data used for the empirical study and provides descriptive statistics. Coupon literature has dealt essentially with two issues (Bawa 1996): 1) redemption behavior, and 2) the influence of coupons on purchase behavior. Section 4.3 provides empirical evidence on voucher redemption behavior; the remaining part of the chapter is dedicated to the influence of vouchers on purchase behavior. Section 4.4 sets out a research framework for the analysis of vouchers on purchase behavior and customer lifetime value; section 4.5 presents the empirical model. Section 4.6 shows the results of the empirical analysis and calculates the influence of a voucher on customer lifetime value under different circumstances. Section 4.7 concludes and discusses the implications of the study.

4.2 Data description

4.2.1 Data

We use data from a loyalty program operated by a Dutch clothing retailer with approximately 70 outlets. The retailer sells women's and men's wear, and has in half of its outlets also a children's collection. For confidentiality reasons we cannot identify the name of the company. The retailer has a loyalty program since 1998. Customers can enroll at no charge, and the retailer aims to achieve a high membership rate on its loyalty program. Loyalty cardholders currently account for about 80% of the revenues. A single membership accounts for the entire household.

A key component of the loyalty program is a saving feature, which is designed as follows. A member customer receives one saving point (with value € 0.25) for every € 5 spent on non-discounted items (points relate to 5% of the transaction). Twice yearly, customers with 20 or more saving points receive a voucher with a face value equal to the monetary value of the saved points, and their saving accounts return to zero. The voucher is valid for six months, and can be used on the entire assortment. Vouchers may be used on products higher, equally, or lower priced than the voucher's face value; though no cash returns take place. Another component of the loyalty program consists of regular direct mailings to members with assortment information and announcements of special offers or upcoming sales. Exclusive price promotions for loyalty program members are given incidentally.

Weekly data on customer purchases and marketing instruments are available over almost three years (2000 - 2002, until week 36). The data include customer-level information on the possession and usage of vouchers, as well as the vouchers' face value. The initial subscription date of each loyalty program member is also registered. Also known is to which customers and in which weeks, the retailer sends direct mailings and door-to-door flyers. Most direct mail- and door-to-door folder campaigns last for two weeks. For the purpose of our study, we use purchase data that cover exactly four redemption periods: from 2000 (week 35) until 2002 (week 36). The preceding weeks (2000, weeks 1-34) are used as an initialization period to operationalize lagged variables (see Figure 4.1 for a representation of the observation period).

Figure 4.1 Observation period
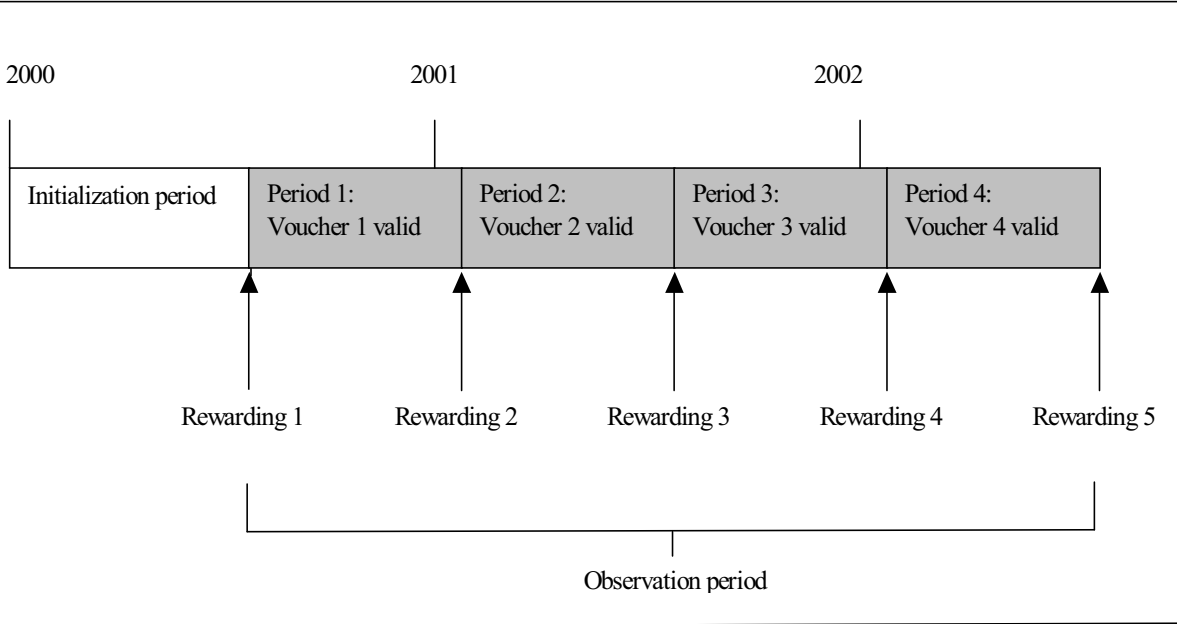
We use the purchase data of those customers who received at least one voucher during the observation period, and made at least one purchase during the initialization period[1]. The sample consists of 45,996 customers.

4.2.2 Descriptive statistics

The customer purchase decision can be decomposed into purchase incidence (whether or not a customer makes a transaction in a certain week) and purchase quantity (transactional value in euros given that a transaction has been made)[2]. On average, a household makes 4.16 transactions per year (s.d. 3.15). The average purchase quantity per transaction is € 47.68 (s.d. 40.11).

The data include 379,227 transactions, and on 8.97% of these transactions a voucher is used (34,030 transactions). Transactions made with a voucher have a higher transactional value than other 'normal' transactions (mean values: € 59.73 versus € 47.46; $t = -45.33$; $p <$ .001). When the voucher's face value is subtracted from the transactional value (yielding the

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[1] The second condition was necessary to operationalize all lagged variables.
[2] It is possible that a customer makes more than one transaction in a certain week, but this appeared only rarely. When we speak of a transaction, we actually mean all transactions made within a given week.

revenues) the difference is much smaller, but still positive and significant (mean values € 49.86 versus € 47.46; $t = -3.00$; $p < .001$).

When a voucher mailing takes place, approximately 40.3% of the sample customers receive a voucher (V1: 45.6%; V2: 35.7%; V3: 41.9%; V4: 38.0%). Table 4.1 shows the number of vouchers received and redeemed per customer during the observation period. On average, a customer receives 1.61 vouchers (s.d. 0.83). Only a limited number of customers (3.6%) receive a voucher in each period. The vouchers have an average face value of € 8.82 (s.d. 4.48); 25% of the vouchers have a face value of € 6.00 or lower, and 25% of the vouchers € 10.00 or higher.

Table 4.1 Receiving and redeeming store vouchers

	# Vouchers received		# Vouchers redeemed	
0	-	.0%	23858	51.9%
1	26367	57.3%	13782	30.0%
2	12774	27.8%	5499	12.0%
3	5183	11.3%	2178	4.7%
4	1672	3.6%	679	1.5%
Total	45996	100.0%	45996	100.0%

Further, the retailer carries out approximately 14 direct mail campaigns per year solely targeted to loyalty program members. A campaign targets on average 36.4% of the loyalty program members, but this rate varies considerably between the different campaigns (between 1.1% and 73.0%). A customer receives on average 5.64 direct mails per year (s.d. 2.37), with a minimum of 0.5 and a maximum of 11.9 mails per year. In addition, the retailer sends door-to-door flyers to selected areas (based on postal codes) about four times per year. Over 90% of the sample households live in areas where door-to-door flyers are delivered.

The next section provides descriptive information and estimates a random-effects logit model on the question: whether, when, and by whom are vouchers redeemed?

4.3 Voucher redemption

4.3.1 Voucher redemption rate

The redemption rate is overall 45.9% (V1: 45.4%, V2: 50.6%, V3: 44.1%, V4: 44.0%). This percentage is high compared to the average redemption rate for direct mail coupons, which is around 3% (Bawa 1996). The high redemption percentage is not completely surprising, however, given the nature of the voucher mailing. Customers can anticipate on receiving a voucher; they know that they have 'earned' the voucher by previous purchase behavior, and the voucher is selective and personalized. Further, the voucher's face value is considerably higher than for a typical coupon, and it can be used on the entire assortment rather than for a specific item.

To explain which vouchers are redeemed (and which not), we estimate a random-effects logit model. The dependent variable in the model is the dichotomous variable voucher redemption (VR_{ip}), which represents whether household i redeems a voucher in period p (26 weeks). We model the redemption decision conditional on the fact that a voucher is indeed obtained by this household in the given period. We explain voucher redemption out of a set of explanatory variables and a constant (X_{ip}). Because for 27.8% of the households we have more than one observation, the model accounts for unobserved household heterogeneity through random effects. The random-effects approach assumes that the heterogeneity of households can be treated as drawings from a distribution, with a mean equal to the constant term and a variance u_i (Verbeek 2000, p.310). Equation (4.1) denotes the model, Table 4.2 the results.

(4.1) $VR_{ip}^* = X_{ip}^{'}\beta + u_i + \varepsilon_{ip}$ if $VO_{ip} = 1,$

$VR_{ip} = 1$ if $VR_{ip}^* \geq 0$,

$VR_{ip} = 0$ if $VR_{ip}^* < 0$.

where $i = 1,...45996;\quad p = 1,...,4$;

VR_{ip} =   Voucher redeemed by household i in period p (0/1);

VO_{ip} =   Voucher possessed by household i in period p (0/1).

Table 4.2 Random-effects logit model for voucher redemption

		Parameter Estimate	t-value
Constant	β_0	–2.576	–48.91**
Face Value	β_1	.097	34.64**
Voucher used in previous period	β_2	.455	15.16**
Voucher obtained, but unused in previous period	β_3	–.082	–2.40*
# Direct Mailings	β_4	.216	42.10**
Membership Duration	β_5	–.003	–9.26**
σ_u^2		1.221	
ρ		.599	
Log-likelihood		–46205.4	

** $p < .01$; * $p < .05$.

The model is overall significant (χ^2 = 4995.9; $p < .001$), and clearly outperforms a similar model without unobserved heterogeneity (χ^2 = 894.2; $p < .001$). As represented by the variable ρ, 59.9% of the unexplained variance comes from household heterogeneity. All parameter estimates are significant on the 5%-level.

A positive relation exists between face value and redemption (β_1 = .097). The redeemed vouchers have an average value of € 9.87, the non-redeemed vouchers an average value of € 7.93. Coupon literature has established that especially non-buyers are sensitive to face values (Bawa and Shoemaker 1987); our data show that also for existing customers voucher redemption increases with face value.

Further, a customer is more likely to redeem when s/he redeemed a voucher in the previous period as well (β_2 = .455). A non-redeeming household either did not receive the previous voucher or received but did not redeem it. For the latter group the redemption probability is significantly lower compared to both groups (β_3 = –.082, and β_3-– β_3 = .535, t =11.93 , $p < .01$). Apparently, some households are loyal, but not deal- or reward-prone. The

redemption rate is 69.3% for customers who also redeemed a voucher in the previous period, 40.9% for customers who did not redeem or receive a voucher, and 38.1% for customers who received but did not redeem a voucher in the previous period. Further, a customer with a long membership duration is less likely to redeem a voucher ($\beta_4 = -.003$). We expected learning effects among customers, leading to better voucher anticipation and rising redemption probabilities with membership tenure. Apparently, not membership duration but rewards redemption in the recent past stimulate voucher redemption.

Finally, a positive relation is found between the number of direct mailings received and voucher redemption ($\beta_5 = .398$)[3]. Households that redeem their vouchers received on average 4.2 direct mails during the redemption period, the non-redeemers received 3.6 mails. Note that the voucher's face value and most likely also the number of direct mailings received relate to customer loyalty; we can therefore not be sure about the causal direction of the relationship between these variables and redemption.

4.3.2 Timing of voucher redemption

Figure 4.2 presents a histogram with the redemption patterns over weeks. It shows that most vouchers were redeemed soon after they were sent, but also that several redemptions took place much later. After two weeks 29.6% of the redemptions had taken place, after five weeks this was 54.2%, and after ten weeks 76.9%. Vouchers with a high face value were redeemed earlier. This appears both from the correlation between redemption week and voucher value ($\rho = -.119$; $p < .001$), and from a median-split test (average redemption week high (low) value voucher: 6.06 (7.02), $F = 16.91$, $p < .001$). This result is in line with our expectations: high-value vouchers increase store utility more strongly; moreover, it is the relatively frequent purchasers that possess them.

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[3] We were not able to include door-to-door flyers in the model, because more than 90% of the households receive them, leading to unacceptably high correlation (and thus multi-collinearity) between the number of door-to-door flyers received and the constant term in the model.

Figure 4.2 Number of vouchers redeemed
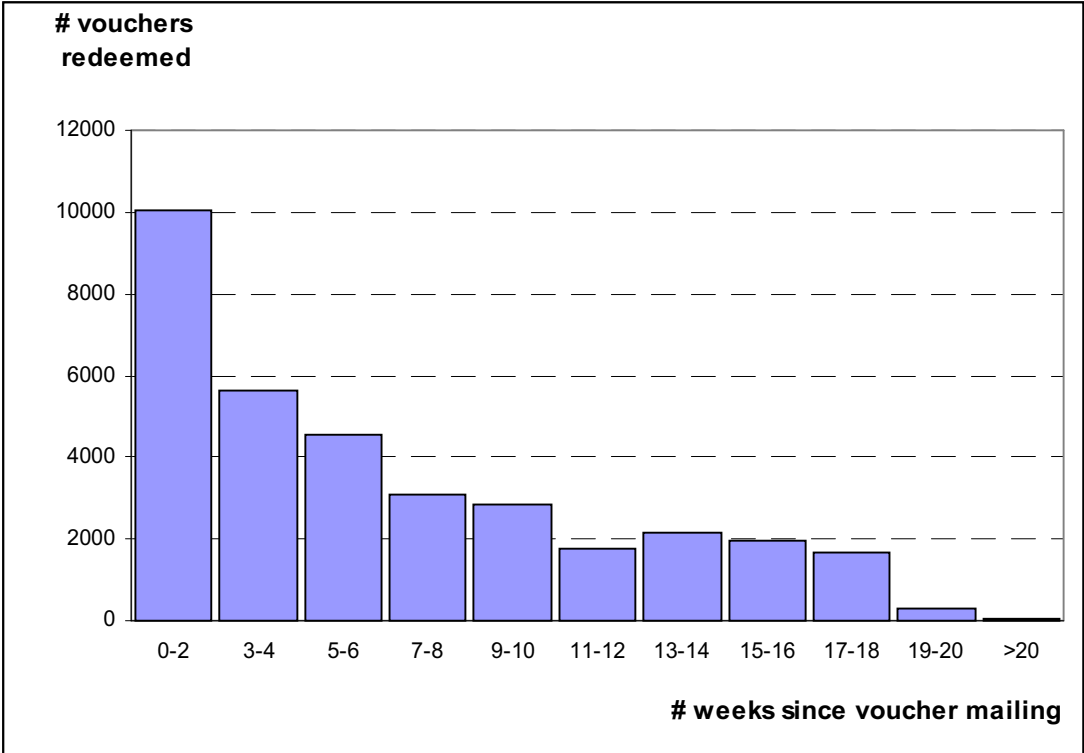
Of those customers who did not redeem their vouchers, a very high percentage (70.9%) still made a purchase during the redemption period. Another phenomenon that became apparent is that vouchers were often not redeemed during the first purchase occasion after the voucher was received. This situation applies to 28.7% of the redemptions. Bawa and Shoemaker (1987) find that 70% of the coupon redemptions do not take place during the first purchase, but especially early redemptions are those that appear to be associated with incremental sales (sales that would otherwise not have been made) (Neslin 1990). We were able to identify these phenomena, because we had access to complete customer purchase histories and knew, for instance, on which transactions vouchers were used. Many coupon studies, especially those using store data, lack this important information.

Summing up, we find that 45.9% of the vouchers were redeemed, which is relatively often. Redemption seemed to be especially likely for vouchers with a high face value, for those customers who redeemed a voucher in the previous period as well, and in case a customer received many direct mailings during the redemption period. On the other hand, vouchers were not always redeemed during the first purchase, and a high percentage of the

non-redeemers still made purchases. From this analysis it is therefore not straightforward whether vouchers lead to incremental purchases. The next section therefore assesses the influence of vouchers on purchase behavior is presented in the next sections.

4.4 The effects of vouchers on purchase behavior: Research framework

4.4.1 Potential effects of vouchers on customer lifetime value

Our research aims to assess the impact of store vouchers on customer equity (the sum of customer lifetime values over all customers). Customer lifetime value measures the discounted value of all customer-related cash flows during the lifetime of the customer-firm relationship (Jain and Singh 2002), and can be represented as in equation (4.2). To obtain the net cash flow, total revenues are multiplied by the average margin (*m*), and direct marketing costs (*DC$_{it}$*) are subtracted (Berger and Nasr 1998). The net cash flows are discounted with the time preference rate *r*; the term *t+0.5* means that we assume that expenditures are spread equally over the time interval between *t* and *t+1*.

$$(4.2) \quad CLV_{it} = \sum_{t=0}^{\infty} \frac{(REV_{it}) * m - DC_{it}}{(1+r)^{t+0,5}},$$

with

REV$_{it}$	=	total revenues on household *i* in period *t*;
m	=	average margin on retailer's merchandise;
DC$_{it}$	=	direct costs made on household *i* during period *t*;
r	=	time preference rate.

For our application, we use *t* for weekly intervals. We take a 26-week time frame covering exactly one redemption period. We split up the weekly income flow of a household into the probability of purchase incidence (*PI$_{it}$*), and the expected purchase quantity (*PQ$_{it}$*)

conditional on a purchase incident occurring. Purchase quantity measures the total expenditures of a household; the value of the vouchers used is thus not included in this variable. The voucher-related direct marketing costs consist of the mailing costs and the discount costs of the voucher used on a transaction. Costs of voucher usage equal the voucher value times one minus the margin on the merchandise (cost price). The CLV-formula adapted to our research problem is presented in Equation (4.3):

$$
(4.3) \quad CLV_{it} = \sum_{t=0}^{26} \frac{(PI_{it} * PQ_{it}) * m - VO_{it} * vm - VU_{it} * FV_{it} * (1-m) - DCnv_{it}}{(1+r)^{t+0.5}},
$$

with

PI_{it}	=	1 if customer i makes a transaction in week t, 0 otherwise;
PQ_{it}	=	Total expenditures of customer i in week t in Euros;
VO_{it}	=	Voucher received by household i in week t;
VU_{it}	=	Voucher used by household i in week t;
vm	=	Marginal costs of mailing a voucher to a household;
FV_{it}	=	Face value of the voucher possessed by household i in week t;
$DCnv_{it}$	=	Direct marketing costs not related to the voucher.

In order to assess the impact of a loyalty voucher on customer lifetime value, we need to estimate an empirical model for the effects of a voucher on both purchase incidence and purchase quantity. In the second step, these estimates are used to calculate the voucher's effect on customer lifetime value. As such, a conceptualization is needed for the influence of vouchers on consumer purchase behavior. Figure 4.3 presents our conceptual framework. The several components of the framework will be discussed now in greater detail.

Figure 4.3 Conceptual Framework
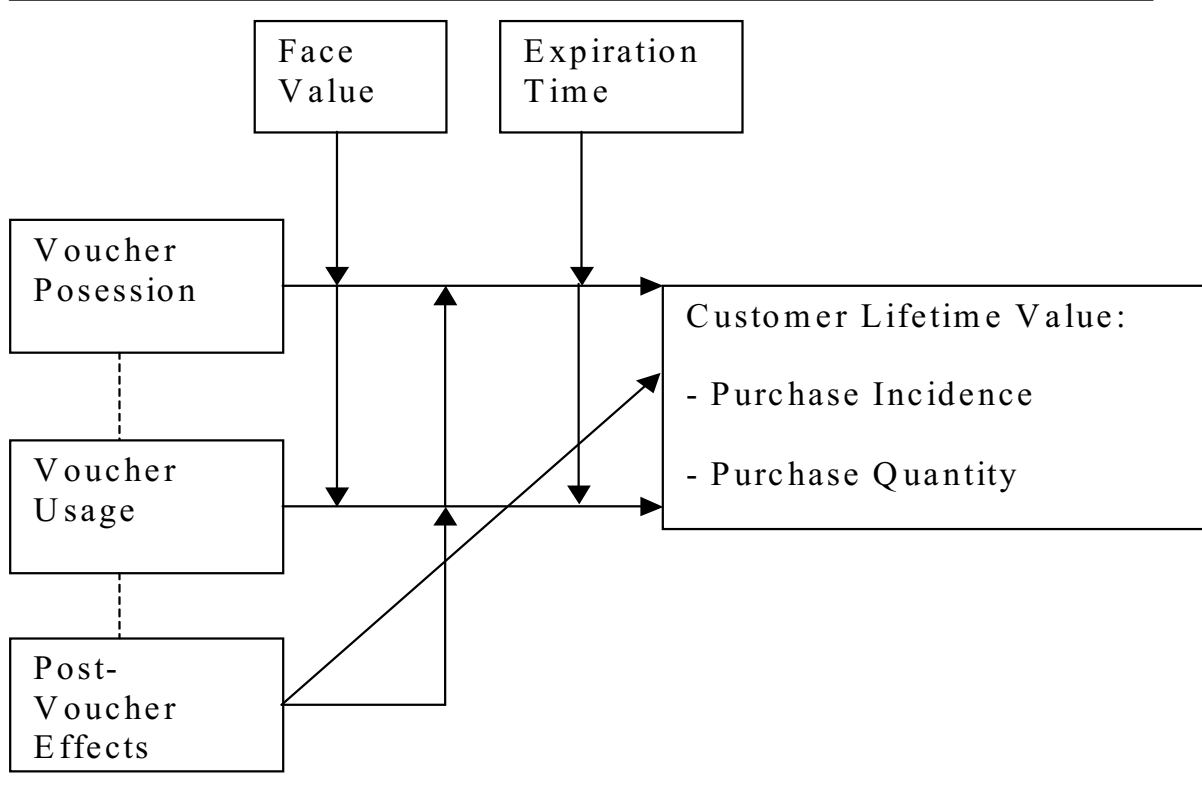
4.4.2 Effect of voucher possession on purchase incidence

Possession of a voucher could affect the timing of a next purchase incident. In general, a clothing purchase is driven by a consumer's need to extend his or her assortment or to replace certain items in that assortment. A consumer assortment (of clothing, in this case) can be defined as a set of heterogeneous products that have the same overall usage goal but different specific applications (Van Herpen 2001, p.24). The consumer's need to extend or renew his or her clothing assortment increases over time as clothes wear out or become outdated. Further, the extent to which the specific retailer can fulfill the clothing need is customer-specific and relates e.g, to past purchase behavior. The goal of this study is to control for normal purchase patterns, and assess the effects of a voucher for given clothing needs and store preference.

A voucher decreases the price of an assortment extension. Similar to price promotions and coupons, the voucher can accelerate purchases, induce switching behavior and increase category expenditures (Gupta 1988). Switching and increased category expenditures both lead to additional transactions; purchase acceleration brings transactions forward in time, thereby

increasing net present value as well. Coupons and vouchers can stimulate brand switching, because lower prices make the retailer's assortment temporarily more attractive (Krishna and Zhang 1999). Clothing is considered to be a shopping good with some fashionable and hedonic features to many customers (Levy and Weitz 2001, p.163). Purchase acceleration and category expansion are thus more likely to occur for clothing than for fast-moving consumer goods (Silverstein and Fiske 2003).

Furthermore, the voucher that we study here has some unique features, distinguishing it from a price promotion or a coupon. Under a loyalty program, customers have explicitly earned the voucher. The fact that customers can attribute the acquisition of the voucher to their own past behavior may stimulate its usage. Possession of the voucher could justify additional consumption, for example, and reduce the pain or guilt related to making expenses (Kivetz and Simonson 2002a). This is related to self-gifts that people allow themselves as rewards for their efforts in the past (Kivetz and Simonson 2002b; Mick and Faure 1998).

On the other hand, the rewarding could also make customers scheming and rational, which tends to reduce incremental transactions. If customers consciously put effort in obtaining the reward, they could become more rational and self-controlled. The voucher's long expiration time combined with a targeting of regular customers could also temper positive tendencies. There is, namely, no need to speed up the next purchase: a regular customer can simply use the next 'normal' purchase event to redeem the voucher. On the other hand, customers may prefer to realize the value incorporated in a voucher soon, because of impatience or formally a positive time-preference rate. Consumers also tend to use vouchers or coupons quickly in order not to forget or lose them (Bawa and Shoemaker 1987).

4.4.3 Effect of voucher usage on purchase quantity

A voucher provides no explicit incentive to purchase more on a transaction, because it provides a fixed (€ x) rather than a proportional (x %) reduction in prices. For coupons, the effects on purchase quantity have been found to be either very limited or absent entirely (Bawa 1996; Krishna and Shoemaker 1992). But the vouchers as studied here may have a stronger effect on purchase quantity than coupons. First, coupons are given for a specific product, whereas the voucher is valid on the complete store assortment. Further, clothing items are used (worn) as a set; individual items are complementary to each other. Consumers

therefore generally prefer to buy a larger product assortment during one shopping trip (Lee and Steckel 1999). As already mentioned, customers have explicitly earned the voucher, which may stimulate their indulgence to larger transactions or more luxury items (Kivetz and Simonson 2002a; Mick and Faure 1998). Moreover, Drèze and Nunes (2004) show that consumers can perceive costs as lower when they pay with a combination of saving points and money, rather than with money (or points) alone. But the rewarding could also make the customers more calculative, which tends to reduce their spending on transactions made with a voucher. They might, for example, create a separate mental budget that must be balanced in such a way that the effort spent on getting the reward is compensated by the additional benefits (Thaler 1985). This could prevent customers from spending on a voucher transaction. In sum, arguments exist both in favor of both higher and lower purchase quantities on transactions with a reward voucher.

4.4.4 Moderators: Face value and expiration time

Face value and expiration time have been found to be important determinants of coupon effectiveness, and we expect them to be important for the voucher's effect on purchase behavior as well. Literature on coupons showed that coupon redemption rates increase with the face value (Bawa and Shoemaker 1987; Leone and Srinavasan 1996). But they also found that higher face values lead to incremental sales mainly due to the attraction of non-buyers (Krishna and Shoemaker 1992). It is therefore not straightforward that higher face values given to better customers stimulate incremental revenues.

Similar to what has been found for coupons, we expect that the effect of a voucher on purchase incidence decreases over time (Inman and McAlister 1994). This relates to the fact that the customers, who do not use their vouchers quickly are those who are less attracted by the voucher or the company's offering. Some customers might have visited the store planning to use the voucher, but found no attractive redemption possibilities (no conversion). Further, customers who show calculated behavior tend to redeem their vouchers later in the redemption period.

4.4.5 Post-voucher effects

The voucher may have consequences beyond the immediate effects on purchase behavior discussed so far. We make a distinction between post-voucher effects on purchasing and post-voucher effects on response behavior on future vouchers.

Post-reward effects on purchase behavior

We distinguish between a short-term post-voucher effect immediately following voucher redemption and a long-term effect of membership lifetime. When a voucher accelerates a next purchase incident, this is likely to be counterbalanced by a purchase decrease in subsequent periods (post-voucher dips), similar to post-promotion dips found in price promotion literature (Van Heerde, Leeflang and Wittink 2000 Grover and Srinivasan 1992).

But some counter forces exist as well. The rewarding nature of the voucher could realize relational improvements, and stimulate brand preference or category expenditures. Bolton, Kannan, and Bramlett (2000) find that members of a loyalty program overlook or discount negative evaluations of the company vis-à-vis competition, with respect to normal prices or product quality. This could possibly be ascribed to getting loyalty program rewards: the rewards make consumers feel that the company nevertheless offers "good value". Next to the value included in the voucher, customers may derive a special sense of satisfaction from the reward they receive (Roehm, Bolman Pullins, and Roehm 2002). In addition, voucher usage could remind customers of the store and reinforce their preferences for it (Erdem 1996). Further, a voucher as given under the loyalty program rewards customers for their relationship with the company. Following the reciprocity argument, consumers may react positively towards the company by retaining the relationship in the future (DeWulf, Odekerken-Schröder, and Iacobucci 2001). Finally, customers redeeming vouchers obtains new saving points, which can motivate them to reach the threshold again. In sum, although voucher redemption may be followed by an immediate post-voucher dip, a long-term positive effect is expected on customer purchasing.

Post-reward effects on future voucher response behavior

A loyalty program reward may affect a customer's reaction to future rewards. Because the sequential saving cycles are comparable, customers can gain insight into the program over

time and adapt their behavior in order to make optimal use of it. Such patterns have already been found for price promotions and advertising, for which campaigns are less systematicly planned than loyalty program redemptions (Mela, Gupta, and Lehmann 1997; Mela, Jedidi, and Bowman 1998). Experienced customers begin to consider rewards less as a windfall, and more as something they have deserved and can attribute to themselves (Mick and Faure 1998; Reinartz and Kumar 2000). Although this could imply that customers become more opportunistic over time, customers may also perceive the rewarding as part of an enduring two-directional relationship (Grayson and Ambler 1999).

In sum, the effects of this loyalty program reward or voucher are theoretically not straightforward. Customers may perceive the reward as a sign of a durable profitable relationship and keep showing loyal behavior to maintain this relationship. But the rewards may also be perceived as something that customers can attribute to their own behavior. This can withhold them from making incremental sales neither during the redemption of their vouchers or during post-voucher weeks. The overall effect on customer purchases is therefore not straightforward and needs empirical investigation.

4.5 The effect of vouchers on purchase behavior: The empirical model

4.5.1 Modeling framework

We model purchase incidence with a discrete hazard rate model, and purchase quantity with a regression model. Hazard rate models have been used widely in marketing to model purchase incidence (or timing) (e.g. Gupta 1991; Helsen and Schmittlein 1993). When incidents are observed during discrete aggregate time intervals (such as weeks), it is statistically more correct to use a discrete rather than a continuous hazard rate model (Vermunt 1996). Seetharaman and Chintagunta (2003) show that discrete hazard rate models outperform continuous models for weekly household purchase data. An additional advantage of a discrete hazard rate model is that it can better account for non-purchase decisions, specifically relevant

in combination with periodically changing marketing-mix variables (Seetharaman and Chintagunta 2003; Wheat and Morrison 1990).

For computational reasons, we use a sample of 5000 households (roughly 10%) randomly drawn from the entire set of 49,559 households. The sample data include 41,308 transactions and on 3,733 transactions a voucher was redeemed.

4.5.2 Discrete hazard rate model

To model purchase incidence, we distinguish purchase spells: a spell s starts after a household i makes a purchase (t_0), and ends when the household's next purchase occurs (t_N). The probability of a purchase event during $T = t_l$ is given by $f_i(t_l)$:

(4.4) $\quad f_i(t_l) = p(PI_{it_l} = 1)$.

Of particular relevance is the conditional purchase probability ($\lambda_i(t)$): the probability of a purchase, given that no purchase has occurred in the previous weeks of the spell. The conditional purchase probability $\lambda_i(t)$ could be considered as the discrete equivalent of the hazard rate in continuous-time models.

(4.5) $\quad \lambda_i(t_l) = P_i(T = t_l \mid T \geq t_l) = \dfrac{f_i(t_l)}{S_i(t_{l-1})}$.

The probability of no purchase before $T = t_l$, is given by the survivor function $S_i(t_{l-1})$, defined as:

(4.6) $\quad S_i(t_{l-1}) = P_i(T > t_{l-1}) = 1 - \displaystyle\sum_{k=l}^{N} f_i(t_k)$.

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Knowing that the survival rate $S_i(t) = 1$ at $t = 0$, $f_i(t_l)$ can be written in terms of $\lambda_i(t)$:

$$(4.7) \quad \begin{aligned} f_i(t_l) &= \lambda_i(t_l)S_i(t_{l-1}) = \lambda_i(t_l)\prod_{k=1}^{l-1}(1-\lambda_i(t_k)) = \\ &= \frac{\lambda_i(t_{li}\mid x_i)}{1-\lambda_i(t_{li}\mid x_i)}\prod_{k=1}^{l}(1-\lambda_i(t_k)) \end{aligned}$$

We introduce a variable y_{it} that indicates if an observation is part of a completely observed spell ($y_{si} = 1$) or a right-censored spell ($y_{si} = 0$). We can then write the complete likelihood-function over all households I and all time intervals t, as follows:

$$(4.8) \quad L(PI_{it}, X_{it}\mid\beta,\gamma) = \prod_{i=1}^{N}\prod_{t=1}^{T}\ [(\frac{\lambda_i(t_l\mid x_{it})}{1-\lambda_i(t_l\mid x_{it})})^{y_{ss}}\prod_{k=1}^{l_i}\ (1-\lambda_i(t_l\mid x_{it}))] .$$

In principle, $\lambda_i(t)$ can be parameterized in several ways, but assuming that the data are generated by a continuous-time proportional hazard model, a log-log transformation is preferred (see Vermunt 1996, p.109):

$$(4.9) \quad \lambda_i(t_l) = 1 - \exp(-\exp(\gamma + X_{1it}\beta)) .$$

The constant term γ measures the baseline hazard rate. To give the baseline hazard function a non-proportional form (allow it to vary over the spell), we must include an appropriate function of the variable 'spell duration' as additional explanatory variable(s) (Allison 1982). To account for a bell-shaped base hazard (a low base hazard right after a purchase incident, which then first increases and then decreases over time), we include both spell duration and its logarithmic transformation. We thus obtain the sum of a Gompertz and a Weibull distribution (Allison 1982); we expect a positive sign for the logarithmic variable and a negative sign for the main effect. We account for unobserved household heterogeneity through random effects. This means that we distinguish between a household-specific error term and an overall error term, similar to what has been done for the voucher redemption model (see p.94).

4.5.3 Purchase quantity model

We model purchase quantities of transactions made as a linear regression model. Although it is possible for a household to make more than one purchase in a given week, for simplicity's sake we speak of a single transaction. Similar to the purchase-incidence model, this model accounts for household heterogeneity through random effects ($\eta_i \sim N(0, \sigma_\eta^2)$). The model is specified as follows:

$$(4.10) \quad PQ_{it} = \delta + X'_{2it}\alpha + \eta_i + u_{it} \quad \text{if } PI_{it} = 1 \quad ,$$

$$PQ_{it} = 0 \qquad\qquad\qquad \text{otherwise} \quad .$$

4.5.4 Explanatory variables

Table 4.3 shows the explanatory variables used. In the models for purchase incidence and quantity, the central explanatory variables of interest are respectively voucher possession (for purchase incidence) and voucher usage (for purchase quantity). For both variables we include a set of moderators: face value of the voucher, time since voucher mailing, voucher history, and membership length. With regard to voucher history, we distinguish between three groups (with two dummy variables): households that used the previous voucher, households that obtained the previous voucher but left it unused, and households that did not obtain the previous voucher (base level). The main effect of voucher possession (or usage) compounds the effect of a voucher with a minimal face value (€ 5), immediate after it becomes valid, for a household that did not receive a voucher in the previous period.

In both models, we control for other marketing-mix elements, seasonal effects, household characteristics, and preference heterogeneity. We account for observed preference heterogeneity by including the lagged choice rate during the previous 26 weeks (purchase incidence model) and lagged purchase quantity on the previous transaction (purchase quantity model). These variables are updated weekly, and control for the effect that households possessing a voucher are those who make many and large purchases, anyway. Further, both models account for unobserved heterogeneity among households with random effects (normal distribution).

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Table 4.3 Explanatory variables

Variable	Description
Purchase feedback	
Spell duration	# weeks since previous purchase incident occurred
LN (spell duration)	Logarithm of spell duration
Voucher related variables:	
Voucher possessed	Valid voucher in possession (0/1)
Voucher used	Voucher is used in this week (0/1)
Moderators:	
Face value	Face value of voucher minus minimal value (€5)
Time since voucher mailing	# weeks since most recent voucher mailing
Previous voucher used	A voucher was used in the previous half-yearly period
Previous voucher obtained, but unused	A voucher was obtained but remained unused in the previous half-yearly period
Lagged voucher usage	Voucher was used on previous purchase incident (0/1)
Marketing-mix variables:	
Direct mail	Direct mail received in this week
Door-to-door flyer	Door-to-door flyer received in this week
Household heterogeneity:	
Lagged incidence rate	Fraction of purchase incidents during previous 26 weeks (between 0-1)
Lagged purchase quantity	Transaction size (in €) of previous purchase incident
Seasonal dummies	Four-weekly dummies (12 per year- 13th is base level)

4.6 Results

4.6.1 Overview

This section presents the results of the models for purchase incidence (4.6.1) and for purchase quantity (4.6.2). The impact of the voucher's moderators is discussed by means of graphical presentations of the effect sizes for different voucher situations. The results of these models are then used to analyze the effect of the voucher effect on customer lifetime value (4.6.3).

4.6.2 Purchase incidence

Table 4.4 shows the results of the purchase incidence model. The model is overall significant ($\chi^2 = 16064.4$; $p < .001$) and has a log-likelihood of -136749.0. Variance due to unobserved household heterogeneity is very small compared to the overall heterogeneity ($\rho < .001$). The low value for the variance due to unobserved household heterogeneity ($\sigma^2_u = .009$) indicates that the error term is almost uncorrelated within a household, which can occur when household differences are well captured by the explanatory variables. Not surprisingly, a model that accounts for unobserved household heterogeneity does not explain purchase incidence significantly better than a pooled model ($\chi^2 < .01$; $p > .10$).

The basis hazard represented by the constant, spell duration and LN (spell duration) shows a bell-shaped curve as expected; purchase incidence drops immediately after a purchase incident followed by an increase, with a maximum value after 3.78 weeks. Next, the basic hazard rate decreases again.

The main effect of voucher possession has a negative but insignificant effect on purchase incidence ($\beta_{1,0} = -.070$; $p > .10$). Note that the main effect does not represent the average effect, but the effect of a voucher with a minimal face value, in the first week after the mailing, for a new customer that did not receive the previous voucher. In addition, the face value has a positive impact on the voucher effect ($\beta_{1,1} = .015$; $p < .01$). The voucher effect turns positive if the value of the voucher is at least € 9.67. As expected, the voucher's effect decreases somewhat over time ($\beta_{1,2} = -.005$; $p < .01$). Further, a consumer's voucher history seems to impact predominantly the voucher's effect on purchase incidence, compared with customers who did not receive the previous voucher. The effect of a voucher on purchase incidence is higher both for customers who used the previous voucher ($\beta_{1,3} = .242$; $p < .01$), and for customers who received the voucher but did not use it ($\beta_{1,4} = .119$; $p < .01$). The length of the membership has no effect on how customers react to the voucher with respect to purchase incidence. The content of the membership (voucher history) is thus more important than the length of the membership.

Table 4.4 Random effects discrete hazard rate model for purchase incidence

		Parameter estimate	*t*-value
Constant	$\delta_{1,0}$	–2.880	–92.01***
Spell duration	$\delta_{1,1}$	–.009	–12.13***
LN (spell duration)	$\delta_{1,2}$	.034	3.89***
Valid voucher possessed	$\beta_{1,0}$	–.070	–1.64
Moderators:			
Face value -/-minimal value	$\beta_{1,1}$	.015	7.44***
Time since mailing (weeks)	$\beta_{1,2}$	–.005	–3.69***
Previous voucher use	$\beta_{1,3}$	.242	10.41***
Previous voucher received, but unused	$\beta_{1,4}$	.119	4.39***
Membership duration	$\beta_{1,5}$	.000	.05
Direct mail	β_2	.368	29.72***
Door-to-door flyer	β_3	.372	25.29***
Lagged voucher usage	β_4	–.074	–4.03***
Lagged incidence rate	β_5	4.349	70.76***
Membership length	β_6	–.0003	–1.83*
Seasonal effects			
1	$\beta_{7,1}$	–.411	–15.15***
2	$\beta_{7,2}$	–.259	–9.54***
3	$\beta_{7,3}$	–.287	–10.54***
4	$\beta_{7,4}$	–.107	–4.23***
5	$\beta_{7,5}$	.183	7.91***
6	$\beta_{7,6}$	–.000	–.01
7	$\beta_{7,7}$	.092	3.88***
8	$\beta_{7,8}$	–.457	–15.57***
9	$\beta_{7,9}$	–.212	–7.96***
10	$\beta_{7,10}$	–.015	–.60
11	$\beta_{7,11}$	–.127	–5.22***
12	$\beta_{7,12}$	–.236	–9.31***
Log Likelihood		–136748.97	
ρ		$8.32*10^{-7}$	

*** $p< .01$; ** $p < .05$; * $p < .10$.

The model shows the existence of a short-term negative post-voucher effect on purchase incidence ($\beta_4 = -.074$; $p < .01$). This suggests that part of the voucher redemptions relate to accelerated purchases, followed by a post-voucher dip in purchase incidence. Membership length has a small negative effect on purchase incidence ($\beta_6 = -.003$), significant at the 10%-level.

The control variables show the expected signs and are mostly significant. Direct mailings ($\beta_2 = .368$; $p < .01$) and door-to-door flyers ($\beta_3 = .372$; $p < .01$) both influence purchase incidence positively. Further, the lagged purchase incidence rate is positively related to the current purchase incidence ($\beta_5 = 4.349$; $p < .01$). The four-weekly dummies show clear seasonal fluctuations.

The results thus show that the effect of a voucher on purchase incidence depends on voucher history, face value, and time expired since voucher mailing. To obtain better insight into the effect sizes, Figure 4.4 presents the hazard rate (according to model predictions) for vouchers with different face values (€ 5, € 7.50, € 10) over the voucher redemption period. The figure presents the expected probability of purchase incidence, given that no purchase incident occurred since the voucher became available. The situation without a voucher is also drawn as a benchmark. For all control variables, the average values are taken from the data set. Figure 4.4a shows the situation for a household that did not receive a voucher in the previous period, Figure 4.4b for a household that received a voucher but did not receive it during the previous period, and Figure 4.4c for a household that redeemed the previous voucher.

Because the time since the voucher mailing negatively influences effectiveness, the voucher curves decrease faster than the no-voucher curve: for some situations the curves cross each other. Comparison of the three figures clearly demonstrates the impact of voucher history. For customers who used the previous voucher, positive effects are observed for all three vouchers over the entire redemption period. For customers who did not receive the previous voucher, the voucher only generates a positive effect only for the largest voucher (€ 10) in the first week. For customers who obtained but did not redeem the previous voucher, all three vouchers generate positive effects in the first weeks but become ineffective before their expiration date. The smallest voucher (€ 5) becomes ineffective in the ninth week. Knowing that only 23.1% of the vouchers are redeemed after the tenth week and that vouchers have on

average a larger value (€ 8.82), we can conclude that the voucher is still effective for most customers within this group. Overall, we observe a positive effect of the voucher's face value, but one that is dominated by the effect of voucher history.

Werner and Reinartz (2000) show the existence of a highly profitable customer segment characterized by short customer lifetimes, which they label as "butterflies". The existence of such a segment could also explain our results. Part of the customers who receive their first voucher are butterflies: they generated high revenues in the preceding period, but easily fly away to other companies. For them, the voucher does not create a sufficient switching barrier, not even for a redemption transaction.

Figure 4.4 The moderated relationship between voucher possession and purchase incidence

Figure 4.4a No voucher received in previous period

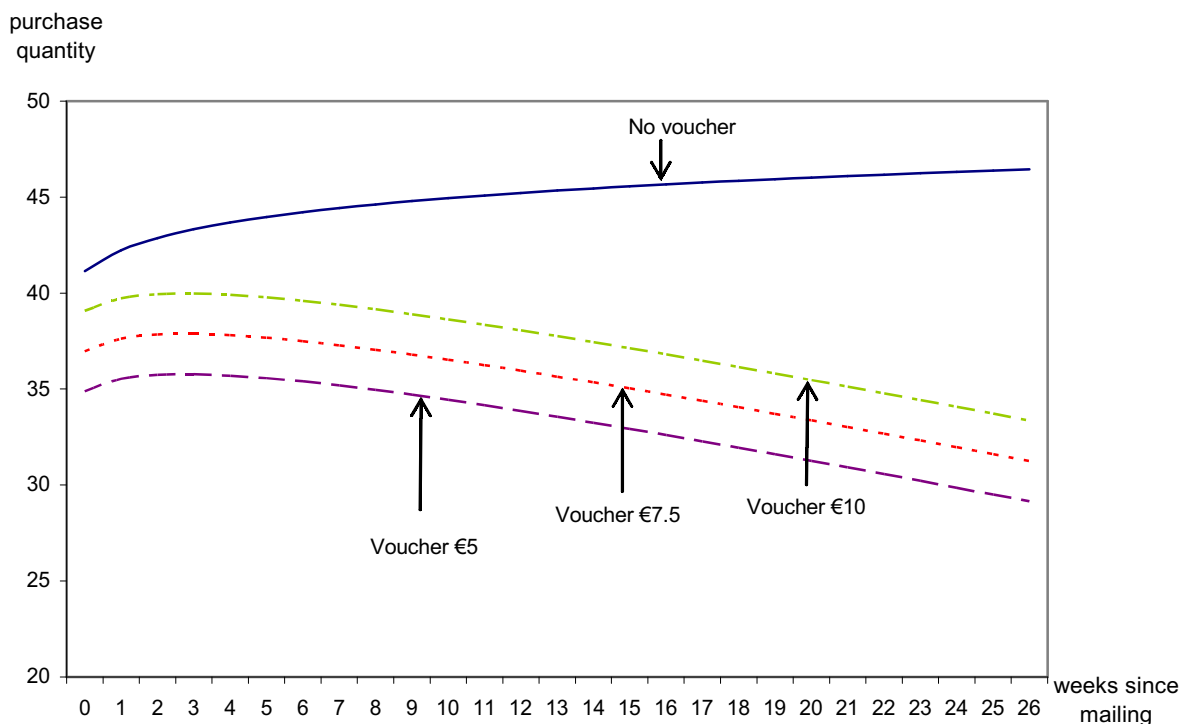

λ(purchase incidence)

weeks since mailing
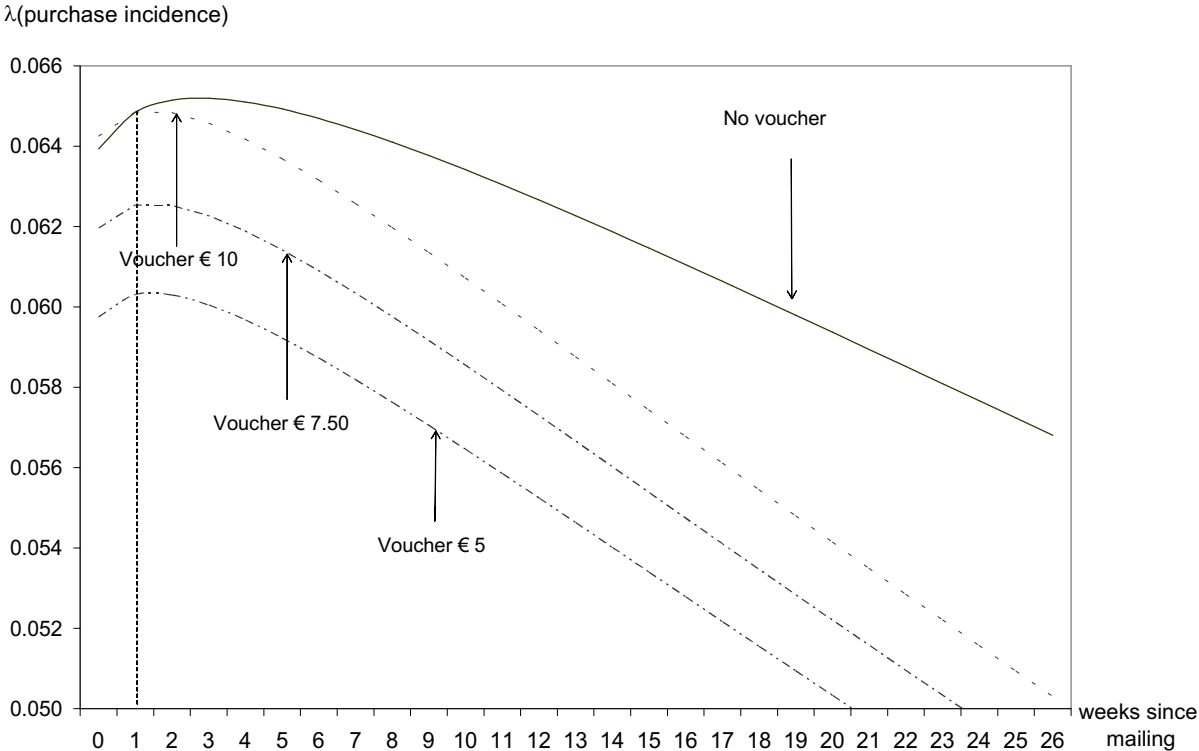
Figure 4.4b Voucher received but unused in previous period
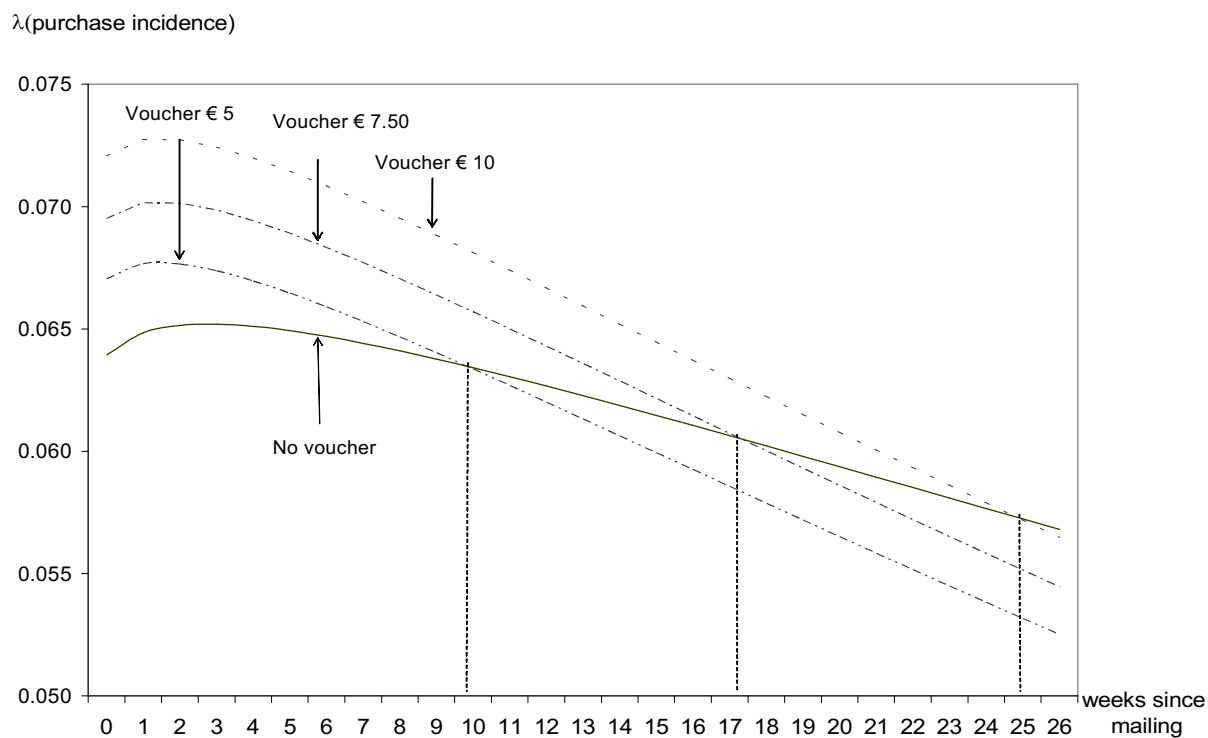
Figure 4.4c Voucher received and used in previous period
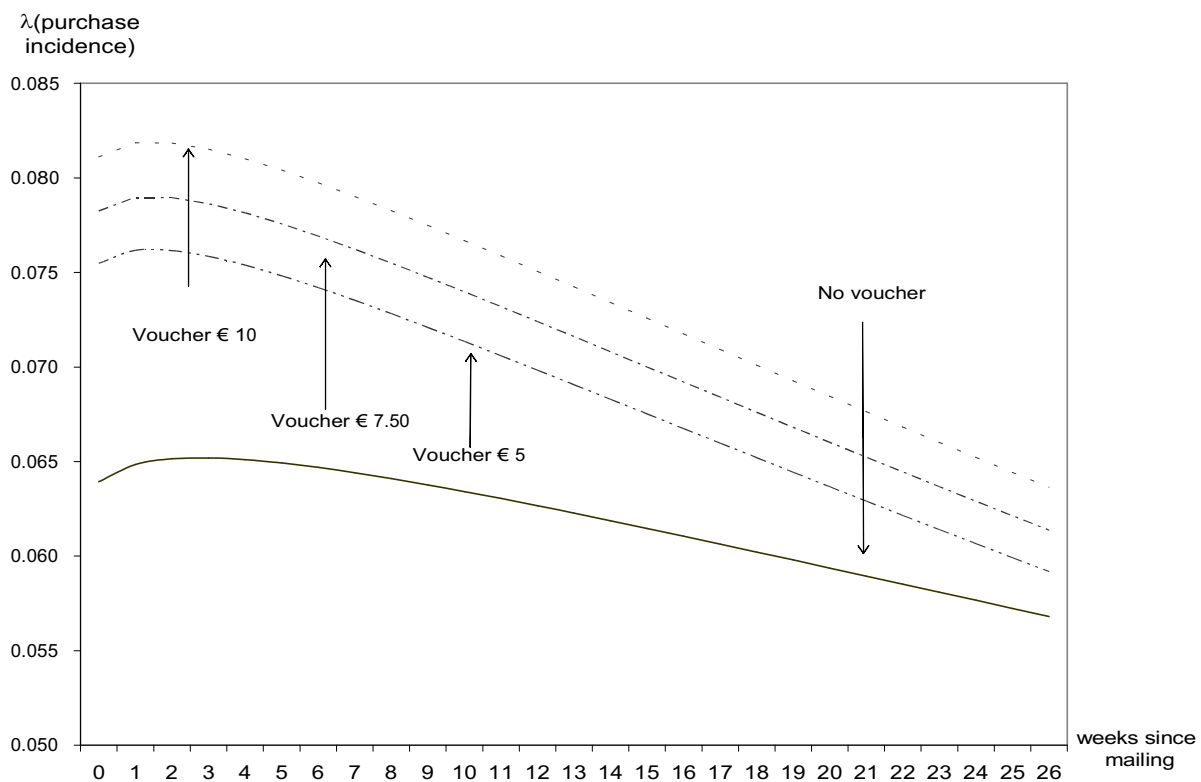
4.6.3 Purchase quantity

The results of the purchase quantity model are shown in table 4.5. The model is overall significant (χ^2 =1286.0; $p < .001$) and has a R^2 of .030 (R^2 between = .302, R^2 within = .002). As for the purchase incidence model, variance due to unobserved household heterogeneity is very small ($\rho < 1*10^{-7}$). Purchase feedback represented by the constant, spell duration, and LN(spell duration) shows an increasing shape, which indicates that the expected purchase quantity of a transaction increases with the time since the last purchase incident.

The main effect of voucher usage is negative and significant ($\alpha_{10} = -6.279$; $p < .05$). As in the purchase incidence model, the main effect represents the effect of a voucher with a minimal face value, in the first week after mailing, for a new customer that did not receive the previous voucher. Again, the face value has a positive impact on the voucher effect (α_{11} = .842; $p < .01$). Given that the voucher value is excluded from the transaction size, this positive effect is more remarkable than for purchase incidence. It means that additional voucher value stimulates customers to spend more than only this additional value. The voucher effect turns positive if the voucher value is at least € 12.46, which holds for only 13.5% of the vouchers. Further, the voucher's effect decreases over time ($\alpha_{12} = -.424$; $p < .01$). We again observe that voucher history has a predominant influence. The effect of a voucher is more positive for customers who used the previous voucher ($\alpha_{13} = 8.451$; $p < .01$) and also for customers who obtained but did not use it ($\alpha_{13} = 7.055$; $p < .01$) compared with customers who did not receive customers a voucher in the previous period. The length of the membership exerts a small negative effect, which is significant at the 10%-level. Similar to the findings for purchase incidence, the content of the membership thus seems to be more important than the length of the membership.

Table 4.5 Random-effects regression model for purchase quantity

		Parameter estimate	t-value
Constant	$\delta_{1,0}$	43.066	38.92***
Spell duration	$\delta_{1,1}$	.006	.21
LN (spell duration)	$\delta_{1,2}$	1.561	4.91***
Voucher usage	$\alpha_{1,0}$	−6.279	−2.48**
Moderators:			
Face value	$\alpha_{1,1}$	.842	6.54***
Time since mailing	$\alpha_{1,2}$	−.424	−3.17***
Previous voucher used	$\alpha_{1,3}$	8.451	5.60***
Previous voucher received, but unused	$\alpha_{1,4}$	7.055	3.16***
Membership duration	$\alpha_{1,5}$	.002	.11
Direct mail	α_2	4.215	8.88***
Door-to-door flyer	α_3	−.284	−.50
Lagged voucher usage	α_4	2.409	3.39***
Lagged purchase quantity	α_5	.094	19.43***
Membership length	α_6	−.010	−1.76*
Seasonal effects			
1	$\alpha_{7,1}$	−10.317	−9.78***
2	$\alpha_{7,2}$	−7.068	−6.83***
3	$\alpha_{7,3}$	3.032	2.90***
4	$\alpha_{7,3}$	.197	.20
5	$\alpha_{7,4}$	−.908	−1.00
6	$\alpha_{7,5}$	−6.831	−7.16***
7	$\alpha_{7,6}$	−9.230	−9.96***
8	$\alpha_{7,7}$	−11.439	−10.00***
9	$\alpha_{7,8}$	−3.958	−3.83***
10	$\alpha_{7,9}$	2.258	2.39**
11	$\alpha_{7,10}$	−.690	−.73
12	$\alpha_{7,11}$	−.819	−.84
	$\alpha_{7,12}$		
R^2 within		.002	
R^2 between		.302	
R^2 total		.030	

*** $p < .01$; ** $p < .05$, * $p < .10$.

Further, the model shows the existence of a positive post-voucher effect on purchase quantity. After voucher usage, the expected purchase quantity of the next purchase increases by € 2.41 ($p < .01$), pointing towards a relational improvement. Direct mails have a positive effect ($\alpha_2 = 4.215$; $p < .01$) and door-to-door flyers an insignificant effect ($\alpha_3 = -.284$; $p > .10$) on purchase quantity. Further, lagged purchase quantity positively relates to current purchase quantity ($\alpha_5 = .094$; $p < .01$). The four-weekly dummies clearly show a two-wave seasonal pattern with extremes around period 1 and 10 (minima) and period 4 and 13 (maxima).

Figure 4.5 The moderated relationship between voucher usage and purchase quantity (in euros)

Figure 4.5a No voucher received in previous period

Figure 4.5b Voucher received but unused in previous period

purchase
quantity

No voucher

Voucher €7.5 Voucher €10

Voucher €5

weeks since
mailing
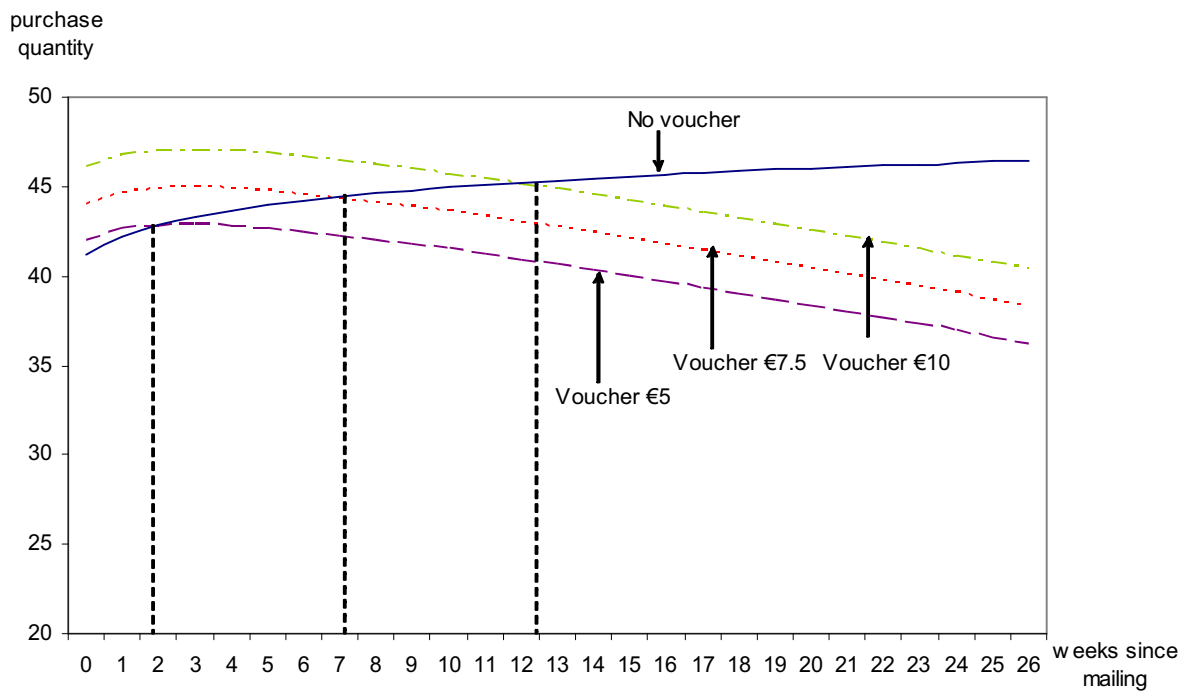
Figure 4.5c Voucher received and used in previous period

purchase
quantity

No voucher

Voucher €7.5 Voucher €10

Voucher €5

weeks since
mailing

116
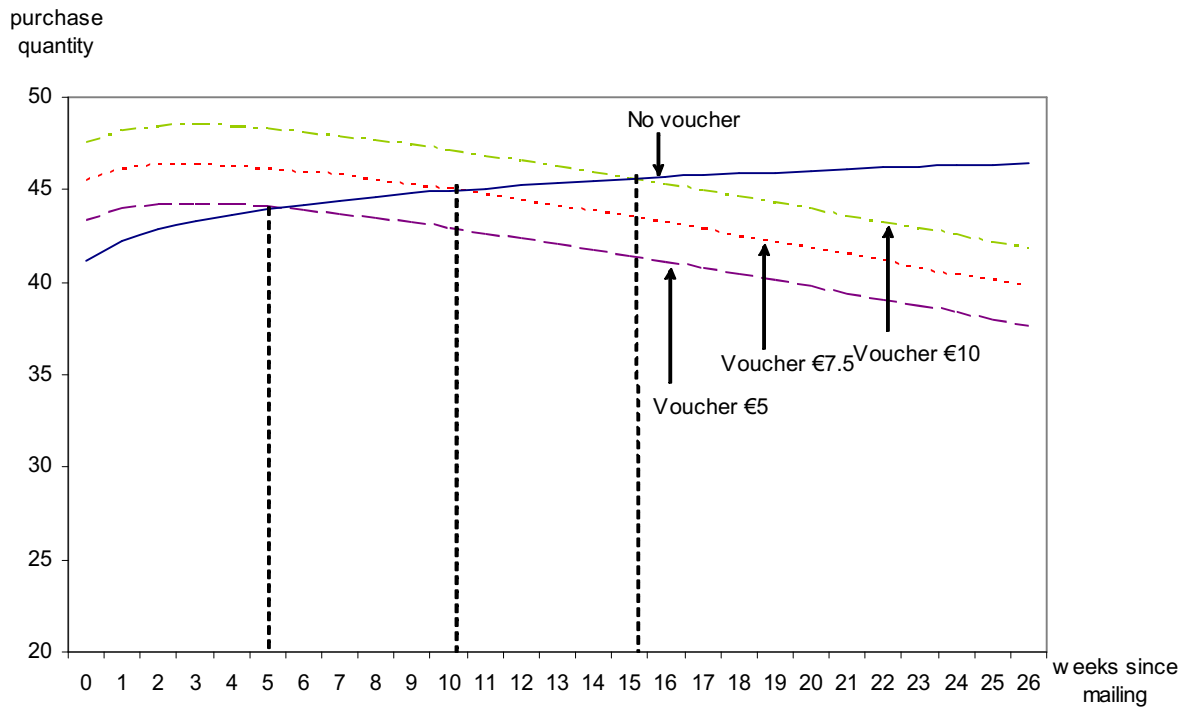
Figure 4.5 shows purchase quantity according to model predictions for vouchers with different face values (€ 5, € 7.50, € 10) over the voucher redemption period. The situation without a voucher is also drawn as a benchmark. Time since voucher mailing negatively influences effectiveness, but time since the last purchase incident has a positive influence on purchase quantity. The no-voucher curve therefore shows an increasing shape, and the curves with a voucher a decreasing shape.

For households that did not obtain the previous voucher the voucher effect on purchase quantity is negative for all three vouchers over all weeks (see Figure 4.5a). For all other situations, the voucher has a positive effect during the first weeks, which then decreases and turns negative before expiration (see Figures 4.5b and 4.5c). Most customers receiving a voucher for the first time thus show calculating usage of the voucher. For customers who obtained or used the previous voucher, this holds only for those households that keep the voucher in their pocket for a long time. Face value has a positive influence on revenues: higher discounts (higher face value) lead to more revenues. This supports the statement that it is good to give most rewards to your best customers. Negative effects on purchase quantity do not necessarily imply that customers buy less on a given transaction, since the voucher value is excluded from the transaction size. The purchase quantity variable, however, shows the effects on revenues.

4.6.4 Vouchers and customer lifetime value

The empirical model estimates make it possible to calculate the voucher effect on customer lifetime-value. The basic idea: the effect of a voucher on the expected cash flow is calculated for every week t during the redemption period, and then discounted to obtain the net present value. To calculate the effect of the voucher on the cash flow, we must calculate the discounted impact on the several components of CLV_{it} (revenues, mailing costs and voucher costs) for every week t of the redemption period, previously formulated as:

$$(4.3) \quad CLV_{it} = \sum_{t=0}^{26} \frac{(PI_{it} * PQ_{it}) * m - VO_{it} * vm - VU_{it} * FV_{it} * (1-m) - DCnv_{it}}{(1+r)^{t+0.5}}.$$

The voucher effect on customer revenues can be split into a direct and an indirect effect. The direct effect is the effect of possessing and using the voucher in week t on the revenues in week t. The indirect effect consists of the feedback of having used a voucher in a previous period on the purchase incidence and quantity in a current week t. Equation (4.11) presents the direct effect of the voucher during a given week (using the chain rule):

$$(4.11) \quad \frac{\Delta REVdir_{it}}{\Delta VO_{ip}} = \left(\frac{\Delta(\lambda_i(t_l) * PQ_{it})}{\Delta VO_{it}} \right) * S_i(t_{l-1})$$

$$= \left(\frac{\Delta \lambda_i(t_l)}{\Delta VO_{it}} * PQ_{it} + \lambda_i(t_l) * \frac{\Delta PQ_{it}}{\Delta VO_{it}} \right) * S_i(t_{l-1}).$$

The total direct effect over the entire redemption period p equals the sum of the discounted direct effects over all weeks $t = 1,\ldots 26$, as presented in equation (4.12):

$$(4.12) \quad \frac{\Delta REVdir_{ip}}{\Delta VO_{ip}} = \sum_{t=1}^{26} \left[\left(\frac{\Delta REVdir_{it}}{\Delta VO_{ip}} \right) * \left(\frac{1}{1+r} \right)^{t+0.5} \right].$$

The indirect effect equals the effect of having used the voucher on a previous transaction made in week l on purchase incidence and purchase quantity during the current week t, as presented in equation (4.13). The total indirect effect then equals the sum of the discounted indirect effects over all weeks t = 1, $\ldots 26$ as presented in equation (4.14). Note that the indirect effect equals 0, because the current voucher cannot have been used yet.

$$(4.13) \quad \frac{\Delta REVindir_{it}}{\Delta VO_{ip}} = \sum_{l=1}^{t-1} \left[\left(\frac{\Delta REV_{it}}{\Delta VU_{il}} \right) * P(PI_l) \right] = \sum_{l=1}^{t-1} \left[\left(\frac{\Delta \lambda_{it} * PQ_{it} + \lambda_{it} * \Delta PQ_{it}}{\Delta VU_{il}} \right) * S_{il2} * P(PI_l) \right];$$

$$(4.14) \quad \frac{\Delta REVindir_{ip}}{\Delta VO_{ip}} = \sum_{t=1}^{26} \left[\left(\frac{\Delta REVindir_{it}}{\Delta VU_{il}} \right) * \left(\frac{1}{1+r} \right)^{t+0.5} \right].$$

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The costs related to the voucher consist of mailing costs and voucher costs (the direct marketing costs not related to the voucher are of no influence). The mailing costs are fixed and made at $t = 0$. The voucher costs are the net present value of the probability of voucher usage times the voucher value over all 26 weeks. The probability of usage then equals the probability of purchase incidence, given no purchase incidence until then.

$$(4.15) \quad \frac{\Delta VC_{it}}{\Delta VO_{ip}} = P(INC_{it} \mid INC_{it-1}, \dots INC_{i0} = 0) * FV_{it} \, ;$$

$$(4.16) \quad \frac{\Delta VC_{ip}}{\Delta VO_{ip}} = \sum_{t=1}^{26} \left[\frac{\Delta VC_{it}}{\Delta VO_{ip}} * \left(\frac{1}{(1+r)} \right)^{t+0.5} \right].$$

We take a time preference rate of 15% on an annual level, which corresponds to a weekly time rate $r = .00269$ ($r = 1 - \sqrt[52]{1.15} = .00269$). Previous studies on CLV use yearly time preference rates between 12% and 20% (Berger and Nasr 1998), and without having specific knowledge we chose to remain conservative. Further, we take a margin m equal to 42%, which equals the average margin for men's and women's fashion retailers as reported by Hoofd Bedrijfsschap Detailhandel (2003). No more precise information is available on margins, neither do we have any indications that the margin for our clothing retailer would be different than average. The mailing costs are set at € 0.50. All control variables are set on the average values in the dataset.

We calculate the voucher's effect on CLV for nine different situations: three different voucher histories * three different face value (€ 5, € 7.50, € 10). The results are presented in Table 4.6. We observe that for customers who did not receive the previous voucher the direct effect on revenues is negative for all voucher values. For customers who obtained the previous voucher but left it unredeemed, the direct effect on revenues is negative for the smallest face value (€ 5), but positive for the other two (€ 7.50 and € 10). Finally, for the group of customers who used the previous voucher, the direct effect is positive for all different face-value levels. From the graphical presentation of the model estimates, we observed already that the voucher effect could turn negative over the redemption period.

Moreover, the probability of redemption is smaller for customers who did not use the previous voucher, so that the probability of a voucher remaining unredeemed in the later stages of the redemption period is higher.

Further, the indirect effects are negative, because the negative post-voucher effect on purchase incidence outweighs the positive effect on purchase quantity. The post-voucher effects hardly show differences for the different situations.

When we balance additional revenues with voucher and mailing costs, we observe that the overall effect on customer lifetime value is negative for all nine situations. The marginal effect of the voucher reward on customer lifetime value is thus negative. But we observe again that the losses are smallest for the group of customers with the previous voucher redeemed. The influence of face value is mixed. For customers who received or used the previous voucher, a positive relation exists between face value and CLV-effect. This is remarkable, because higher face values lead to much higher voucher costs. However, for customers who did not receive the previous voucher, the relation between face value and customer lifetime value is negative. Rewarding customers who spend most in the long run thus provides the best results.

Table 4.6: The effects of the loyalty voucher on customer lifetime value

Voucher history	Face value[1]	Present direct effect on net revenues[1]	Present indirect effect on net revenues[1]	Present voucher costs[1]	Net present value of the voucher[1,2]
Previous voucher not obtained	5	−4.48	−0.19	2.17	−7.34
	7.50	−3.44	−0.19	3.31	−7.44
	10	−2.33	−0.19	4.49	−7.51
Previous obtained, but unused	5	−0.81	−0.19	2.29	−3.79
	7.50	0.46	−0.19	3.48	−3.71
	10	1.80	− 0.19	4.70	−3.60
Previous voucher obtained and used	5	1.48	−0.19	2.39	−1.61
	7.50	2.87	−0.19	3.64	−1.46
	10	4.33	−0.19	4.91	−1.27

[1] In euros

[2] Net present value of the voucher = Present direct effect on net revenues + Present indirect effect on net revenues − Present voucher costs − Mailing costs; Mailing costs = € 0.50

4.7 Conclusions

4.7.1 General conclusions

From the analysis of a loyalty program that rewards customers with store vouchers, we may conclude that vouchers given to good customers can enhance purchases, but not under all circumstances. Vouchers with a high face value— given to the best spending customers— have the most impact on both purchase incidence and quantity. But the rewards become really effective only after a household has been rewarded at least one time before. Instead of becoming more scheming, households thus develop a better relationship with the company. This supports the claim that most investments should be targeted on the best customers. But it seems that at least two rewards are needed in order to receive something from the customer in return. We also show that customer lifetime measured as membership length is no guarantee of developing better relationships, which is in line with recent findings of Reinartz and Kumar (2000). Of relevance are the content and the development of the relationship, rather than its length. Furthermore, we show that the voucher's effectiveness decreases over time and it can become ineffective before the expiration date.

Moreover, the voucher as studied here does not enhance customer lifetime value. Because of the value given away under the voucher, the net effect is negative. But we find that the losses are smallest for the best and most loyal customers, despite the fact that they receive vouchers with the highest face values. The negative effect of the voucher on CLV does not necessarily mean that the loyalty program is not profitable, as stimulating effects may also come from saving points. Several authors have found that customers take account of saving points in making their purchase decisions (Hsee et al. 2003; Nunes and Drèze 2003; Van Osselaer, Alba, and Manchanda 2003). Considered from this perspective, rewarding customers with vouchers makes a saving program less costly, because the reward costs are much lower than the face value of the voucher. But our research shows that unless the store gives customers the right incentives to collect saving points in a preceding period the store voucher will not be profitable.

4.7.2 Managerial implications

Our analysis shows that rewarding your best customers under a loyalty program can be a good strategy, if executed in a proper way. The following managerial advices can be given.

We clearly find that the voucher pays off only after a second time. This implies that companies can better operate a long-standing loyalty program than work with short-term loyalty actions (as defined in Chapter 1). Furthermore, companies may want to try to reduce the losses on the first reward. Increasing the saving points threshold is a possible solution, but this can easily lead to customer demotivation (Nunes and Drèze 2003). An alternative is to design progressive reward schedules, under which loyalty program members are rewarded better if they also reached the points threshold during the previous saving cycle.

We showed that the voucher has a positive post-voucher effect on purchase quantity. Although pleasant, this finding will only lead to considerable higher profits once customers indeed make a purchase. The post-voucher dip in purchase incidence should be reduced, e.g. by sending a direct mail shortly after the redemption has taken place. Further, we find that membership length is not a good indicator either for behavioral loyalty or for voucher response behavior. Voucher response behavior is a better indicator of relationship strength.

Our analysis indicates that in many cases the voucher's effect becomes in many cases negative before the expiration time. A shortened redemption period is therefore advisable for this reward, although it should be of sufficient length. Price promotion literature has shown that purchase increases come for a large share from brand switching (Gupta 1988). In order to enable customers to switch, stores should offer vouchers with redemption periods that capture at least one normal clothing purchase.

4.7.3 Limitations and directions for further research

This paper tested whether a strategy of rewarding customers for their loyalty is effective. A comparison of this strategy with alternative strategies was beyond the limits of this study, however. We could not analyze, for example, how loyal versus disloyal customers would react to a similar store voucher. Neither could we compare the current strategy with a saving feature that discriminates even more strongly by rewarding the loyal customers relatively better than the current strategy. The comparison of differentiation and rewarding strategies is an interesting direction for further research.

Furthermore, the available data did not allow us to observe whether increases in purchase incidence are due to increased store traffic or to higher conversion rates. Such a decomposition is important in retail settings in which comparison shopping is significant, such as fashion retailing (Lam et al. 2001; Van Heerde and Bijmolt 2004). It would be interesting to assess whether voucher possession has the strongest impact on store traffic or on conversion rates.

Our analysis focused on the marginal impact of the voucher on customer lifetime value, and ignored certain additional benefits and costs of the saving feature. We ignored the positive incentive from saving points that customers received in advance of the voucher. Besides, we did not take into account that the collection of purchase data through loyalty cards is used by the retail company for marketing decision making, such as for household selections for direct mailings. Furthermore, we ignored the fixed costs of maintaining a loyalty program (e.g. the administrative costs of points registration). Accounting for all benefits and costs is necessary to judge whether a complete saving program as operated here leads to additional profitability.

Chapter 5
Conclusions

5.1 Overview

For most companies investing in relationships with customers is a preferred strategy over maximizing individual transactions. Relationship marketing is pursued in business-to-business markets and channel relationships already for a long time, but in consumer markets it is an area still in full development. Consumer markets are mostly mass markets, for which relationship marketing is far from straightforward. Customers are anonymous to the company and personal contact with them is limited. Therefore, relational marketing instruments such as loyalty programs are needed to leverage relationships and to differentiate between customers. A loyalty program is a very generic relational marketing instrument, under which several marketing actions can take place to enhance customer loyalty. In this dissertation we studied the (potential) role of loyalty programs, specifically in retailing. Retail industries characterize as mass markets, and many retail companies use loyalty programs.

We started with an overview of extant literature on loyalty programs and identified several gaps in current knowledge (Chapter 1). With the aim of filling these gaps, we conducted three studies in the area of loyalty programs. The first study consisted of a survey among retail managers on the adoption and perceived effectiveness of loyalty programs (Chapter 2). For the second study, we used market-wide panel data to study loyalty program effectiveness accounting for endogeneity (Chapter 3). The third study focused on the loyalty program of a specific retailer. We used information from the customer database of this company to study the effects of a loyalty program reward on customer lifetime value (Chapter 4).

Figure 5.1 shows the research framework proposed in Chapter 1. The components and relations, which have been studied in this dissertation, are bold-printed. The figure shows that this dissertation has covered almost the complete framework, except for the influence of

loyalty program design and competitive loyalty programs on loyalty program adoption of customers.

Table 5.1 shows in which chapters the components are addressed. Some issues are investigated in more than one of the studies, and an integration of the obtained knowledge is therefore needed. In the next section, we will provide general conclusions on base of the problem statement formulated. In Section 5.3 we discuss implications: for research, management, and policy makers. Section 5.4 discusses directions for further research.

Figure 5.1 Investigated components and relations
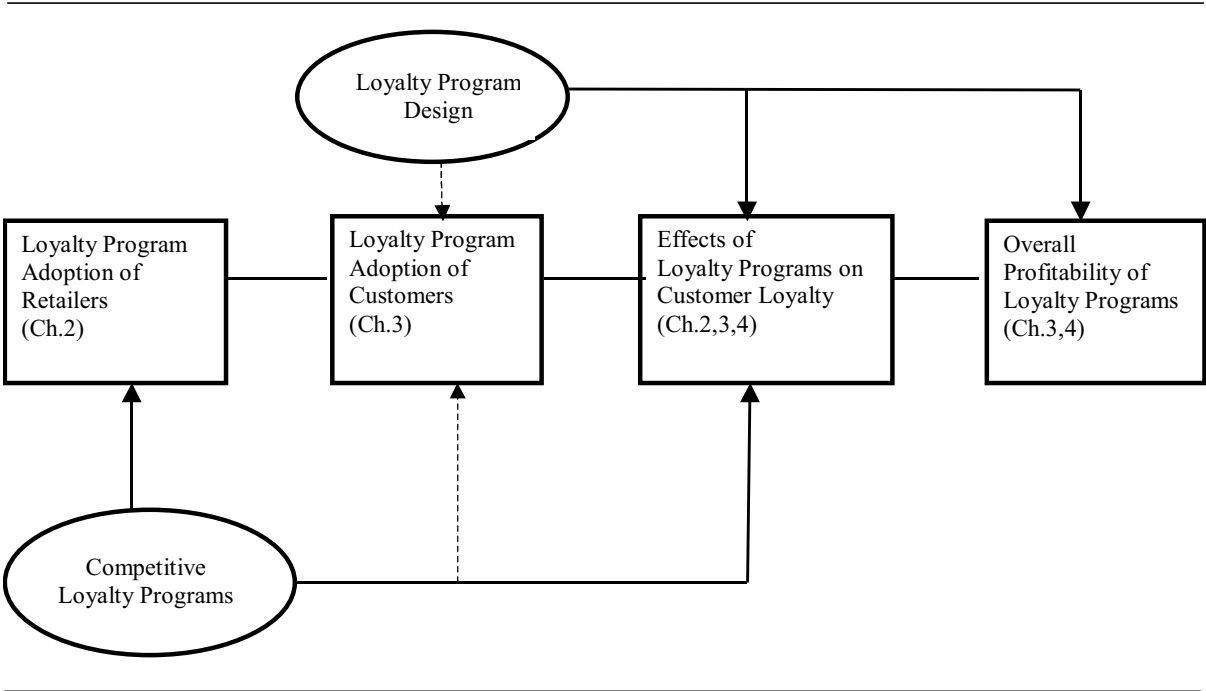
Table 5.1 Overview of studies

	Loyalty program adoption of retailers		Loyalty program adoption of customers			Loyalty program effectiveness			Loyalty program profitability		Data		
	G	C	G	C	D	G	C	D	G	D	Type	Subjects	# Subjects
Study 1 (Chapter 2)	✓	✓				✓	✓	✓			Survey	Retailers	180
Study 2 (Chapter 3)			✓			✓	✓	✓	✓	✓	Panel data	Households	1,926
Study 3 (Chapter 4)						✓			✓		Panel data	Loyal Program Members	40,599
Overall	✓	✓	✓			✓	✓	✓	✓	✓			

G = general

C = influence of competitive loyalty programs

D = influence of loyalty program design

5.2 General Conclusions

5.2.1 The problem statement

We defined the following central research problem for this dissertation: *Which role can loyalty programs play in the marketing-mix of retailers?* In this section, we formulate conclusions based on the problem statement in Chapter 1. We will first provide an answer on the five research questions (section 5.2.2 until 5.2.6). Section 5.2.7 integrates this knowledge and provides an answer on the central research problem.

5.2.2 Which factors drive retailers to adopt loyalty programs?

The retailer survey (Study 1, Chapter 2) addresses the issue of retailers' loyalty program adoption. Among the 181 retailers we surveyed, 37% use loyalty programs. Our study identified several market and organizational factors that influence retailers' loyalty program adoption. We found that the loyalty program adoption decision is strongly driven by competitive factors. Above all, competitors' loyalty programs but also competitive intensity in general drive retailers to adopt loyalty programs. Our findings doubt the pretended defensive nature of loyalty programs, because loyalty programs seem to be used to catch up with others in competitive situations. Indeed in many retail sectors, retailers compete for the same customers because consumers are often polygamous loyal and involved in comparison-shopping.

Customer and organizational factors play a secondary role in the adoption decision. The potential loyalty programs to differentiate between customers in mass markets yield highest benefits in case of considerable consumer variety. Companies with a customer base that varies strongly in terms of profitability are indeed more likely to adopt loyalty programs. Customer variety in product preferences does not play a role, which suggests that loyalty programs are not used to differentiate in terms of their needs and wishes. Indeed we find that loyalty programs are predominantly used for rewarding purchasing behavior and less for differentiation on base of product interests, service needs, media usage, etc. Finally, retail companies are more likely to adopt loyalty programs when they are customer oriented and have a decentralized organizational structure. The company is thus more likely to adopt a

loyalty program when the distance between the firm and its customers is smaller. In sum, we find that the competitive factors are dominant over customer factors in retailers' loyalty program adoption decision.

5.2.3 Which factors drive customers to adopt retailers' loyalty programs?

The second study (Chapter 3) found that consumers' initial share-of-wallets drive them to become a loyalty program member. This points towards a two-sided causality between loyalty program membership and behavioral loyalty: loyalty program memberships may affect customer loyalty, but loyal customers are also more likely to become loyalty program members. In effectiveness measurement, we should account for the endogeneity problem that this two-sided causality creates.

Further, we found that customers' privacy concerns withhold them from becoming a loyalty program member. This relates to the requirement to provide personal information at subscription and the registration of purchase data through scanning of loyalty cards. Because of existing proper privacy legislation and the restrained usage of data by retailers, these concerns of information misusage seems unjustified. Therefore the reluctance to adopt is unwishful for both retailer and consumer. Furthermore, we found that loyalty program enjoyment stimulates loyalty program membership. We thus show that some customers derive benefits from a loyalty program, beyond purely economic benefits. This indicates that loyalty programs have the potential to create social ties beyond the rational-economic incentives of loyalty programs.

5.2.4 Which effects do loyalty programs have on loyalty and profitability?

Studying loyalty program effectiveness is challenging. First, comparing loyalty program members with non-members to study the effects of loyalty program membership normally leads to endogeneity problems. Second, the effects of a loyalty program are multi-dimensional. Customer loyalty relates to different behavioral and attitudinal phenomena (Dick and Basu 1994; Jacoby and Chestnut 1978). Furthermore, obtaining customer-specific purchase data can be considered as an additional benefit of a loyalty program. Such detailed information could enhance customer knowledge and improve customer differentiation and targeting. Finally, a loyalty program consists of several components, and effectiveness studies

can relate to specific components or the program as a whole. All three studies of this dissertation address loyalty program effectiveness, and the findings are to large extent complementary.

The retailer survey shows that the majority of retail companies perceive their loyalty programs as effective in enhancing customer loyalty, measured with a construct that captures both attitudinal and behavioral loyalty. Taking the retailer's perspective, we were able to investigate whether the customer-specific data obtained through loyalty programs stimulate the retailers' customer knowledge. The enhancement of customer knowledge strongly depends on the intensity with which loyalty program data are analyzed, as well as on buying frequency with which customers normally buy within the product category. By knowing its customers better, a retailer is also better able to use the loyalty program as such that it optimally stimulates loyalty. Contrary to loyalty program adoption, the perceived effectiveness of a loyalty program is hardly affected by market factors. Instead, it mainly depends on how the retailer designs and uses its loyalty program.

In the second study we investigated the impact of loyalty programs on behavioral loyalty, taking share-of-wallet as the key dependent variable. We used market-wide panel data of grocery purchases with 7 out of 20 supermarket chains having loyalty programs. In general, loyalty programs are shown to influence share-of-wallet positively, but our model revealed that three out of seven loyalty programs in the study are not significantly effective. By comparing our results with that of a benchmark model without endogeneity correction (but all other specifications equal), we also showed that ignoring endogeneity leads to substantial overestimation of effectiveness. The benchmark model judges all loyalty programs as effective, and reports effect sizes which are between 1.4 and 7.9 times as high as the effect measured according to the original model with endogeneity correction.

In the third study we investigated the effects of a loyalty program reward, namely a store voucher, on customer purchase behavior. The redemption rate of this voucher is high, which indicates customers' appreciation for it. Furthermore, we found that store vouchers often have a positive effect on purchase incidence and purchase quantity. Loyal customers react most positively on the voucher. This is not completely surprising, because they receive vouchers with a higher face value on average. But the results are also better for customers who also obtained or used a voucher during the previous saving cycle, given a certain face

value. After voucher usage, the time until the next purchase is longer than normal. But when the next purchase is made purchase quantity is somewhat higher.

The second and third study also give insight in the profitability of loyalty programs. The second study calculated whether a loyalty program leads to positive net revenues, by taking the difference between additional revenues and the reward value given away to loyalty program members. The analysis showed that not all loyalty programs are profitable; four out of seven loyalty programs under study give greater value away to their members than they earn back in terms of additional customer revenues. The third study calculated the change in customer lifetime value as a result of the store voucher given away as loyalty program reward. We found that rewarding customers with vouchers does not directly stimulate customer lifetime value. It is therefore that a retailer must provide purchasing incentives before rewarding a customer. Further, a retailer should best reward its most loyal customers, because the losses are smallest for the best customers (despite they receive highest rewards).

5.2.5 How does loyalty program design influence effectiveness?

The retailer survey and the market-wide panel data study both consider several loyalty programs simultaneously which enabled us to study design differences. The retailer survey showed that retailers make only limited use of their loyalty programs. Loyalty programs are predominantly used for offering saving features (77%) and promotion features (62%). In addition, a wide majority of the companies send direct mails to program members (74%). Only a few loyalty programs provide other forms of rewards, such as credit card usage or product demonstrations. Further, only 14% of the programs are multi-vendor programs, despite the potential benefits of cooperation. The loyalty programs studied in Chapter 3 all provide a promotion feature and all but one a saving feature. We discriminated between the designs by measuring the percentage of rewards given away through both features.

The retailer survey finds that loyalty programs with a saving feature enhance customer loyalty better. Furthermore, a saving feature increases the customer knowledge effect as well. A saving feature stimulates consistent use of loyalty cards (in order to obtain saving points), and provides additional information on relationship status and reward/product preferences. In addition, the panel data study shows that loyalty programs that give more value away through a saving feature are more effective. On the other hand, a promotion feature does not add to

loyalty, as has been shown by the retailer survey. Giving more value through promotion feature even hurts the effectiveness of the loyalty program, as has been shown in study 2. So, both studies show that a saving feature is preferred over a promotion feature. Direct mails have a positive but insignificant effect on customer loyalty. The high imprecision of the estimate suggests that retailers differ in the effectiveness of direct mail targeting.

5.2.6 How do competitors' loyalty programs influence effectiveness?

The retail survey showed that retailers' loyalty program adoption is driven by competitors' decisions. In addition, it appeared that many consumers hold duplicate memberships. This hurts the competitive advantage of the loyalty program as has been modeled in the second study. But we found that retailers do not perceive the loyalty program as less effective if many competitors use loyalty programs as well (Chapter 2). This indicates that some markets are more suitable for loyalty programs than others, but that retailers do not overreact by placing more loyalty programs in the market than can be effective.

5.2.7 Which role can loyalty programs play in the marketing-mix of retailers?

Overall, a loyalty program is potentially a good instrument for customer differentiation and customer relationship management, especially when considerable variety exists in the retailer's customer base. Many retailers let their decision lead by the existence of competitors' loyalty program adoptions. This is somewhat dangerous, because competitive programs could hurt effectiveness if many customers hold multiple loyalty program memberships. Furthermore, retailers should make proper use of their programs. Since the loyalty program membership itself is often not a strong differentiator, loyalty program design must take care of a proper differentiation in rewards between loyalty program members. Loyalty program rewards are more effective when they are delayed (e.g. a saving feature), and are more effective for the most loyal customers. Furthermore, the loyalty program has the potential to enhance customer knowledge by the analysis of customer data obtained through the program. Finally, an effective loyalty program is not necessarily a profitable program. Loyalty programs can easily give more rewarding value away than gaining back in terms of additional revenues.

5.3 Implications

5.3.1 Implications for research

The contribution of this thesis is not purely limited to loyalty programs. In this section we will discuss the broader implications of our findings.

- Endogeneity in consumer models

Though endogeneity problems are not econometrically new, they have often been ignored in marketing. Recently, the issue has received growing interest (Villas-Boas and Winer 1999). Biases have been shown for the effectiveness assessment of e.g. price promotions, which timing is partly based on to researchers unobserved management information (Chintagunta 2001). In this dissertation, we showed that ignoring endogeneity leads to considerable biases in the assessment of loyalty program effectiveness. Similar biases are likely to exist for other marketing actions for which customers are selected or select themselves. Because customer selection is inherent to customer relationship management, endogeneity problems are relevant for all relational marketing instruments. Therefore, further research in this specific area is important. In addition, methodological improvements are needed to enable endogeneity correction for a wider range of models and to compare alternative strategies to deal with endogeneity. For example Yang, Chen and Allenby (2003) recently showed how to account for endogeneity in a Bayesian framework. There is also need for conceptual guidelines on how to find and select proper exogenous (instrumental) variables.

- Customer differentiation

A study on loyalty programs provides insight in the more general question whether and how customer differentiation should take place. We find that providing certain customers with additional value only makes sense if it is based on positive consumer behavior in the past (such as under a saving feature). Relationship length does not function as a proper selection indicator, for either loyalty or response behavior. Further, differentiation between customers is more effective and efficient under the umbrella of a long standing problem, rather than as a

incidental action. In general, rewarding your best customers with the best value seems a good strategy, despite possible ceiling effects.

- Profitability of marketing investments

Recently, academic marketing research has realized that the profitability rather than the effectiveness of a marketing strategy or tactic is the most relevant criterion variable (Rust, Lemon, and Zeithaml 2004). This dissertation shows that effective loyalty programs are not necessarily profitable, and as such we confirm this notion. We therefore propagate that marketing instruments are considered in terms of their profitability, rather than only their effectiveness, as much as possible.

5.3.2 Implications for management

Based on the results of the studies conducted in this dissertation, we can provide several advices on loyalty program management.

Our research showed that loyalty program design critically determines the success of a loyalty program. For managers that consider a loyalty program adoption, the decision how to design the program is equally important as the decision whether to adopt a loyalty program. For retailers that currently use a loyalty program we advice a careful (re)consideration of its design in order to optimize the program's profitability. One design component on which our study gives consistent results are delayed versus direct rewards. Though price promotions may be preferred by customers and support the retailers' value proposition (Dowling and Uncles 1997), we clearly found that saving features enhance customer loyalty better. Under a saving feature prolonged repurchasing is a necessary condition to obtain a reward. We therefore advice managers to use predominantly delayed rewards in their programs, i.e. reward customers only after they have made considerable effort towards the company.

Obtaining customer-specific data is considered as a key benefit of loyalty programs, but companies use the obtained data to a limited extent. Customer-specific data can support decision making better than store data (Gupta et al. 2001), especially when membership

characteristics are added (Rossi, McCulloch, and Allenby 1996). The data can be used for several tactical and strategic decisions, such as segmentation, micro-marketing, selection for direct mailings, etc. Cooperation with academic researchers or research companies could be fruitful to make use from advanced research expertise.

Finally, our analyses showed that effective loyalty programs can easily be unprofitable programs. Using the loyalty program to its full potential (with several components and proper data analysis) could help to spread the operational costs. Furthermore, the company should only give additional value away to customers if this is earned back in terms of additional revenues from customers. Loyalty programs relate to considerable initiation costs and other fixed costs. Our study also shows that loyalty programs are more effective for customers who receive a series of program rewards. Therefore, we are strongly in favor of loyalty programs over loyalty actions (as defined in Chapter 1).

5.3.3 Implications for policy makers

The usage of loyalty programs has mainly received policy makers' attention because of possible privacy violations. Furthermore, it is sometimes argued that loyalty programs lead to competitive distortion and unfairness because of cross-subsidies between customer groups (Deane 1988; Liston-Heyes 2002). We discuss these issues and argue to what extent policy makers should take actions.

A considerable part of the loyalty programs require consumers to provide personal data at subscription (77% of the loyalty program in the retail survey). However, we find that companies only make limited use of the data obtained. Moreover, analysis of purchase data does not necessarily mean that customer privacy is hurt, and can instead help to fulfill customers' needs better and provide attractive mailings and coupons. On the other hand, the request to provide personal data withholds some customers from becoming a loyalty program member (see Chapter 3).

The Dutch organization CBP (College Bescherming Persoonsgegevens) is responsible for taking care of privacy infringement of loyalty program providers. CBP only allows the registration of personal data if customers are well-informed about the consequences of the data provision (Artz 1999). We agree with this policy, and advice the policy makers to control

whether companies indeed inform their customers properly. Furthermore, CBP requires that customers receive direct benefits from giving their data (e.g. through direct mails), and argue that otherwise retailers could very well use store data instead. We disagree on this point. Customer-specific data provide more detailed information than store data (Gupta et al. 2001), and can provide customers also with indirect benefits, e.g. micro-marketing, store location decisions, etc. In sum, we advice policy makers not to restrict retailers on requiring data, but stimulate them to provide better information on how data will be used in the customers' advantage.

Differentiation between customers is sometimes considered as unethical. Moreover consumer organizations such as consumer reports prefer low prices over loyalty programs. This ignores the fact that some customers intrinsically enjoy being in a loyalty program. Furthermore, cross-subsidies are also very common without loyalty programs (e.g. in airline industries, lodging, etc.). It is only that loyalty programs make differentiation more transparent to customers, in this way providing clear incentives. Furthermore, we observe that in all retail markets, companies exist without loyalty programs, so that customers always have the option to choose for retailers without a program. This also tackles the point of the fancied distortion of competitive forces. Because loyalty programs have only moderate effects on loyalty, and all markets contain players without loyalty programs, we can conclude that loyalty programs do not raise unacceptable entrance barriers.

5.4 Further Research

Academic research in the area of loyalty programs is scarce, and plenty fruitful areas for further research exist. We structure our discussion around the components of the research framework.

- Loyalty program adoption of retailers

We showed that retailers' loyalty program adoption is strongly driven by the existence of competitors' programs. However, our retailers' survey was static and did not provide insight

in the sequence of adoptions: which retailer exactly reacted on which other retailers' adoption. Furthermore, additional research is needed on retailer decision process concerning the design of their programs, given that the design decision is just as important as the adoption itself. Which design do retailers' take at the program launch and how do they change their design along the way? Another interesting vein for research exist in the abolishment (rather than the adoption) of loyalty programs. The effects are not necessarily symmetrical, and it is possible that the abolishment of a non-effective program generates negative customer reactions.

- Loyalty program adoption of customers

This dissertation provides limited insight in the determinants of customer's adoption of loyalty programs, and neither does existing research. Because loyalty program offer their members certain benefits that non-members do not receive, it is important to know which customers the program attracts. Furthermore, a retailer needs to understand how he can attract the customers to its program that he wants to attract. A retailer may want to withhold customers from holding many different loyalty programs simultaneously. The influence of loyalty program design is definitely of importance for this issue. Further research could e.g. investigate the potential of requiring entrance fees on loyalty program memberships.

- Loyalty Program Effects

In our study we mentioned several mediators that drive loyalty program effectiveness, such as identification, belonging, reciprocity, pride, etc. Though we justified the existence of these mediating effects with findings in related areas, more research is definitely needed on the behavioral effects of loyalty program memberships. Bell et. al (2002) bring up the relevant issue that when differentiating between customers a certain degree of fairness is needed. Related to this, negative behavioral effects may exist on non-program members who perceive their treatment as unfair or feel worse than in a situation without a loyalty program.

Though this dissertation took into account both the benefits and the costs related to a loyalty program, we had no information on all related costs (e.g. operation costs, administrative costs) and benefits (e.g. positive word-of-mouth, growth in category expenditures). More research is therefore needed on the overall profitability of loyalty programs. Because taking into account all different benefits and costs is challenging, future

research could conduct an event study as has been done for e.g. channel additions (Geyskens, Gielens, and Dekimpe 2002) or brand) and new product introductions (Chaney, Devinney, and Winer 1991).

- Loyalty program design

The studies conducted in this dissertation were field studies, and therefore limited to the loyalty program designs offered in these markets. We will discuss some of the design elements that are interesting for further research. Bolton, Lemon, and Verhoef (2002) distinguish between economic and social loyalty programs. The programs we observed and studied in this thesis are predominantly economic. More research is needed on social programs that do not provide less tangible benefits but aim to enhance commitment and social satisfaction. Further, little is know about the benefits of multi-vendor programs, though they seem attractive at least from a cost-perspective (Cigliano et al. 2000). Costs can also be reduced by asking for membership fees, either entrance or maintenance fees, a practice which has not received attention in the literature. Further research can also be done in the direction of saving schedule design, e.g. how do customers react when they are progressively better rewarded as they spend more? Finally, how can a membership webpage as offered by many programs support an offline program?

In sum, this dissertation not only provides more insight in loyalty programs, but also propagates further academic research on this contemporary marketing instrument.

Appendices

Appendix A

Scale Operationalization, Retailer Survey (Chapter 2)

VARIABLE	OPERATIONALIZATION (Items)
MARKET FACTORS	
Customer Diversity: Profitability	Our customers differ strongly in profitability.
Customer Diversity: Preferences	Our customers differ strongly in their preferences.
Buying Frequency	How often do your customer buy something at your company or that of your competitors? * ≤ 5 times a year　　　(n =65) * 6 - 30 times a year　　(n =81) * ≥ 30 times a year　　(n =34).
Competitive Intensity α = .79 Adapted from Jaworski and Kohli (1993)	1. Competition in our industry is cutthroat. 2. In our industry one competes often with price promotions and other marketing actions. 3. Price competition is a hallmark of our industry.

VARIABLE	OPERATIONALIZATION (Items)
ORGANIZATIONAL FACTORS	
Customer Orientation α = .85 Adapted from Narver and Slater (1990)	1. We are very committed to our customers. 2. Customer satisfaction is an important objective when determining our strategy. 3. The creation of customer value plays a central role in our strategy. 4. We thoroughly study the needs of our customers.
Technological Skills α =.89 Adapted from Gatignon and Xuereb (1997)	1. Our company is one of the first to adopt new technologies. 2. We have more technological knowledge than the competition. 3. Compared to the competition we make use of more advanced technologies.
Centralization α =.78 Adapted from Jaworski and Kohli (1993)	1. Also for minor decisions, individual outlets have to consult the head office. 2. Individual outlets can take only limited actions without approval of the head office. 3. In general, important decisions are announced only to the individual outlets after the final decision has been taken by the head office.
Company Size	Logarithm of total number of outlets

VARIABLE	OPERATIONALIZATION (Items)
LOYALTY PROGRAM EFFECTS	
Customer Loyalty	1. Customers are convinced better of the companies benefits.
$\alpha = .76$	2. Customers feel a stronger tie with our company.
Adapted from Oliver (1997)	3. Customers are less prone to buy at competitors.
	4. Customer loyalty in terms of buying is higher.
Customer Knowledge	1. We better understand customers' needs and wishes.
$\alpha = .84$	2. The distance between our customers and us has decreased.
	3. We can better distinguish between different customer groups.
Data Analysis	With which intensity do you analyze loyalty program data?

Appendix B

Retailer Questionnaire (Chapter 2)

Tilburg, (datum) 2003

Geachte heer/mevrouw……………,

Tijdens een telefoongesprek op (datum), heeft u aangeven mee te willen werken aan een onderzoek naar het gebruik van loyaliteitsinstrumenten in de Nederlandse detailhandel. Dit onderzoek wordt verricht vanuit het departement Marketing van de Universiteit van Tilburg. De verkregen gegevens zullen uitsluitend worden gebruikt voor dit academisch onderzoek en NIET voor commerciële doeleinden. Uw anonimiteit is dus volledig gewaarborgd.

De resultaten van het onderzoek kunnen voor uw bedrijf zeer interessant zijn! Gegeven de huidige economische situatie is het meer dan ooit belangrijk om klanten te binden op een duurzame manier. Het is dan ook mogelijk kosteloos een onderzoeksverslag te ontvangen, u kunt dit op de vragenlijst aangeven.

Het invullen van de vragenlijst neemt ongeveer 15 minuten in beslag. U kunt de vragenlijst middels de retour enveloppe terugsturen of faxen.

Alvast onze hartelijke dank voor uw medewerking!
Met vriendelijke groet,

Prof. dr. Tammo H.A. Bijmolt
Drs. Jorna Leenheer

Contactpersoon: Drs. Jorna Leenheer
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Vragenlijst Relatiemarketing Detailhandel

Enkele aanwijzingen bij het beantwoorden van de vragen:

- Bij gesloten (meerkeuze) vragen kunt u het antwoord van uw keuze aankruisen. Bij open vragen kunt u uw antwoord op de lijnen ernaast of eronder noteren.

- Er zijn geen goede of foute antwoorden mogelijk; probeert u zo objectief en eerlijk mogelijk antwoord te geven. Daarbij gaat het steeds om de feitelijke situatie van uw onderneming, dus niet om de door u gewenste situatie.

- Nadat u de vragen heeft beantwoord, kunt u de vragenlijst middels de bijgesloten enveloppe aan ons retourneren of faxen.

Deel 1 Strategie en Markt

We willen u een aantal stellingen voorleggen. U kunt telkens aangeven in welke mate u het eens of oneens bent met de stelling ('1 = Zeer mee oneens' tot en met '7 = Zeer mee eens').

I. De volgende stellingen hebben betrekking op *de verschillen die bestaan tussen uw klanten.*

	Zeer mee Oneens						Zeer mee eens
	1	2	3	4	5	6	7
Onze klanten verschillen sterk in winstgevendheid.	☐	☐	☐	☐	☐	☐	☐
De voorkeuren van onze klanten zijn zeer uiteenlopend.	☐	☐	☐	☐	☐	☐	☐

II. De volgende stellingen hebben betrekking op *de rol die klanten spelen binnen uw organisatie.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
Wij voelen ons zeer betrokken bij onze klanten.	☐	☐	☐	☐	☐	☐	☐
Klanttevredenheid is een belangrijke leidraad bij het bepalen van onze strategie.	☐	☐	☐	☐	☐	☐	☐
Het creëren van waarde voor de klant speelt een centrale rol in onze strategie.	☐	☐	☐	☐	☐	☐	☐
Wij verdiepen ons sterk in de behoeftes die onze klanten hebben.	☐	☐	☐	☐	☐	☐	☐

III. De volgende stellingen hebben betrekking op *het assortiment van producten dat uw bedrijf aanbiedt.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
We hebben een breed assortiment. (veel verschillende productgroepen)	☐	☐	☐	☐	☐	☐	☐
We hebben een diep assortiment. (veel verschillende producten per productgroep)	☐	☐	☐	☐	☐	☐	☐

IV. De volgende stellingen hebben betrekking op *de verschillen die bestaan tussen aanbieders met betrekking tot het productaanbod.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
In onze sector is het moeilijk om je met de samenstelling van het assortiment van de concurrentie te onderscheiden.	☐	☐	☐	☐	☐	☐	☐
De assortimenten die de spelers in onze sector aanbieden, verschillen onderling sterk.	☐	☐	☐	☐	☐	☐	☐
De producten die de verschillende aanbieders in onze sector verkopen, zijn in grote mate gelijk.	☐	☐	☐	☐	☐	☐	☐

V. De volgende stellingen hebben betrekking op *de concurrentie in de sector waarin u opereert.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
De concurrentie in onze sector is meedogenloos.	☐	☐	☐	☐	☐	☐	☐
In onze sector beconcurreert men elkaar vaak met promoties en andere marketingacties.	☐	☐	☐	☐	☐	☐	☐
Sterke prijsconcurrentie is kenmerkend voor onze sector.	☐	☐	☐	☐	☐	☐	☐

VI. De volgende stellingen hebben betrekking op *de wijze waarop uw bedrijf omgaat met concurrenten.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
We reageren snel op de acties van concurrentie.	☐	☐	☐	☐	☐	☐	☐
Ons management bespreekt regelmatig de strategieën van de concurrentie.	☐	☐	☐	☐	☐	☐	☐
We richten ons sterk op de zwakheden van de concurrentie om zelf voordelen te behalen.	☐	☐	☐	☐	☐	☐	☐

VII. De volgende stellingen hebben betrekking op *de verhoudingen tussen de verschillende bedrijfsfuncties en afdelingen binnen uw bedrijf*, zoals inkoop, marketing, ICT, etc.

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
De afdelingen/bedrijfsfuncties binnen ons bedrijf wisselen voortdurend informatie uit.	☐	☐	☐	☐	☐	☐	☐
Er wordt door afdelingen/bedrijfsfuncties intensief samengewerkt om de bedrijfsstrategie succesvol uit te voeren.	☐	☐	☐	☐	☐	☐	☐
Alle afdelingen/bedrijfsfuncties leveren een duidelijke bijdrage aan de klantwaarde.	☐	☐	☐	☐	☐	☐	☐
Afdelingen/bedrijfsfuncties maken vaak van elkaars diensten en middelen gebruik.	☐	☐	☐	☐	☐	☐	☐

VIII. De volgende stellingen gaan in op *de mate van centralisatie binnen uw bedrijf.*

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
Ook voor kleine zaken moeten individuele vestigingen in ons bedrijf het hoofdkantoor raadplegen, voordat een beslissing kan worden genomen.	☐	☐	☐	☐	☐	☐	☐
Individuele vestigingen kunnen zelf weinig acties ondernemen zonder goedkeuring van het hoofdkantoor.	☐	☐	☐	☐	☐	☐	☐
Belangrijke beslissingen worden meestal pas aan de vestigingen medegedeeld, nadat deze reeds op het hoofdkantoor zijn genomen.	☐	☐	☐	☐	☐	☐	☐

IX. De volgende stellingen hebben betrekking op *de gebruikte technologie binnen uw bedrijf*. Onder technologie verstaan wij de automatisering zoals die plaatsvindt in de detailhandel. U kunt hierbij denken aan zaken als scanners voor streepjescodes en voorraadbeheersingsystemen.

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
Onze onderneming is vaak één van de eerste die nieuwe technologieën in gebruik neemt.	☐	☐	☐	☐	☐	☐	☐
We hebben meer technologische kennis dan de concurrentie.	☐	☐	☐	☐	☐	☐	☐
Vergeleken met de concurrentie maken wij gebruik van modernere technologieën.	☐	☐	☐	☐	☐	☐	☐

Deel 2   Loyaliteitsprogramma's

We willen u nu enkele vragen stellen die betrekking hebben op loyaliteitsprogramma's. Loyaliteitsprogramma's komen in verschillende vormen voor. Wij hanteren daarbij de volgende definitie.

Loyaliteitsprogramma: Een klant kan deelnemen aan het programma en krijgt daarbij een klantenkaart. De klant dient vervolgens bij iedere aankoop de klantenkaart te tonen, waarbij aankoopgegevens en eventueel spaarpunten electronisch worden geregistreerd. Het loyaliteitsprogramma geeft diverse voordelen zoals spaarpunten, speciale kortingen voor klantenkaarthouders, etc. Het gaat hierbij niet om een kortlopende spaaractie, maar om een structureel programma.

■ Maakt uw bedrijf gebruik van een loyaliteitsprogramma?
☐ Ja

☐ Nee → Ga verder bij Deel **2B** op **pagina 9**.

Deel 2A   In te vullen door bedrijven <u>met</u> een loyaliteitsprogramma

I. Algemeen
■ Wanneer heeft uw bedrijf het huidige loyaliteitsprogramma geïntroduceerd?
_____(maand en jaar)

■ Hoeveel procent van uw verkopen wordt met een loyaliteitskaart geregistreerd?
_____%

■ Hoeveel procent van uw concurrenten heeft, naar uw inschatting, op dit moment een loyaliteitsprogramma?   _____%

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II. Vormgeving van het loyaliteitsprogramma

De volgende vragen zijn bedoeld om een beeld te krijgen van uw loyaliteitsprogramma. Gaat u uit van de huidige situatie van uw programma.

⇒ U kunt bij dit onderdeel **meer dan één** alternatief per vraag aankruisen!

Sparen

■ Kunnen klanten punten (of iets soortgelijks) sparen met hun loyaliteitskaart?

☐ Ja → Waarvoor kunnen klanten sparen?

☐ Producten uit het gewone assortiment van ons bedrijf (of kortingen hierop)

☐ Producten uit het assortiment van een ander bedrijf (of kortingen hierop)

☐ Producten uit een collectie cadeaus (of kortingen hierop)

☐ Contant geld

☐ Anders, namelijk _____

☐ Nee

Prijskortingen

■ Kunnen klanten speciale prijskortingen krijgen met hun loyaliteitskaart?

☐ Ja → Wat voor kortingen betreft het?

☐ Vaste kortingen op een deel van het assortiment (bijv. op huismerken)

☐ Tijdelijke prijskortingen op producten uit het assortiment

☐ Geselecteerde kortingen die per kaarthouder verschillen

☐ Andere, namelijk _____

☐ Nee

Creditcard functie

■ Kan de loyaliteitskaart worden gebruikt om op krediet te kopen?

☐ Ja

☐ Nee

Mailings

■ Verstuurt u wel eens post aan uw loyaliteitskaarthouders, zoals brieven, e-mail of magazines?

☐ Ja → Wat voor post betreft het?

☐ Persoonlijke post, bijv. informatie over spaarsaldo, verjaardagskaart, etc.

☐ Post over acties speciaal voor de loyaliteitskaarthouders, zoals speciale koopavonden, aanbiedingen, spaarartikelen, etc.

☐ Post met algemene productinformatie en acties waarvan iedere klant gebruik kan maken

☐ Andere post, namelijk _____

☐ Nee

Acties

■ Welke acties houdt u wel eens onder de kaarthouders van uw loyaliteitsprogramma?

☐ Loterijen
☐ Wedstrijden, zoals prijsvragen
☐ Speciale koopavonden voor loyaliteitskaarthouders
☐ Productdemonstraties, modeshows, workshops of iets soortgelijks
☐ Andere acties, namelijk _____

Lidmaatschap

■ Welke informatie moet de klant verschaffen om een loyaliteitskaart te krijgen?

☐ Adresgegevens
☐ Gezinssamenstelling
☐ Geboortedatum
☐ Telefoonnummer en/of e-mail adres
☐ Voorkeuren met betrekking tot het product assortiment
☐ Algemene interesses en/of lifestyle karakteristieken
☐ Additionele informatie, namelijk _____
☐ Geen informatie vereist

■ Welke financiële bijdrage moet de klant betalen om een loyaliteitskaart te gebruiken?

☐ Een eenmalige bijdrage
☐ Een periodieke bijdrage (bijv. jaarlijks)
☐ Geen financiële bijdrage vereist

III.   Samenwerking met andere bedrijven

■ Werkt u bij de uitvoering van uw loyaliteitsprogramma samen met andere bedrijven?

☐ Ja → Op welke manier vindt samenwerking plaats?

☐ De klant kan de loyaliteitskaart bij verschillende ondernemingen gebruiken om bijvoorbeeld spaarpunten of kortingen te krijgen.
☐ De klant kan zijn spaarpunten inwisselen bij een ander bedrijf.
☐ Er vindt samenwerking plaats met producenten bij de samenstelling van de beloningen van het loyaliteitsprogramma.
☐ Incidenteel vinden er acties plaats bij andere bedrijven, maar niet structureel.

☐ Nee → U kunt IIIA overslaan en verder gaan met vraag **IIIB** op **pagina 8**.

IIIA. In te vullen door bedrijven die samenwerken

U hebt aangegeven om samen te werken op het gebied van loyaliteitsprogramma's. Hoe belangrijk waren de volgende motieven bij de beslissing om samen te gaan werken op het terrein van uw loyaliteitsprogramma?

	Zeer onbelangrijk					Zeer belangrijk	
	1	2	3	4	5	6	7
Lagere vaste kosten	☐	☐	☐	☐	☐	☐	☐
Betaling van de partneronderneming(en) aan ons	☐	☐	☐	☐	☐	☐	☐
De aantrekkelijkheid van het programma voor de klant verhogen	☐	☐	☐	☐	☐	☐	☐
Vertrouwen van de klant in het programma vergroten	☐	☐	☐	☐	☐	☐	☐
Verbetering van ons imago	☐	☐	☐	☐	☐	☐	☐
Het aantrekken van nieuwe klanten uit de klantenkring van onze partneronderneming(en)	☐	☐	☐	☐	☐	☐	☐

■ Hoeveel vertrouwen hebt u in uw partner(s) binnen het loyaliteitsprogramma?

	1	2	3	4	5	6	7	
Zeer weinig vertrouwen	☐	☐	☐	☐	☐	☐	☐	Zeer veel vertrouwen

■ Hoe tevreden bent u over de samenwerking met uw partner(s) binnen het loyaliteitsprogramma?

	1	2	3	4	5	6	7	
Zeer ontevreden	☐	☐	☐	☐	☐	☐	☐	Zeer tevreden

IIIB. In te vullen door bedrijven die niet samen werken

U hebt aangegeven niet samen te werken bij de uitvoering van uw loyaliteitsprogramma. Hoe belangrijk waren de volgende motieven bij de beslissing om niet samen te gaan werken op het terrein van uw loyaliteitsprogramma?

	Zeer onbelangrijk					Zeer belangrijk	
	1	2	3	4	5	6	7
Snellere introductie van het programma mogelijk	☐	☐	☐	☐	☐	☐	☐
Grotere flexibiliteit	☐	☐	☐	☐	☐	☐	☐
Het ontbreken van geschikte partners	☐	☐	☐	☐	☐	☐	☐
Ons concurrentievoordeel niet verliezen	☐	☐	☐	☐	☐	☐	☐

Het risico dat een imagoverlies bij een partner overslaat op ons.
☐ ☐ ☐ ☐ ☐ ☐ ☐

Sterkere link tussen loyaliteitsprogramma en het imago van ons bedrijf.
☐ ☐ ☐ ☐ ☐ ☐ ☐

## IV.	Het loyaliteitsprogramma binnen uw onderneming

■ Gebruikt u de data die u verkrijgt van kaarthouders om analyses te doen?

	1	2	3	4	5	6	7	
Nooit	☐	☐	☐	☐	☐	☐	☐	Zeer regelmatig
Zeer oppervlakkig	☐	☐	☐	☐	☐	☐	☐	Zeer intensief

■ Gebruikt u uw analyses voor marketingbeslissingen?

☐ Ja → Voor welke marketingbeslissingen?
  ☐ Segmentatie (het onderscheiden van klantgroepen)
  ☐ Samenstelling assortiment
  ☐ Prijs- en promotiebeleid
  ☐ Selectie van klanten voor het sturen van direct mailings
  ☐ Verbeteringen in het loyaliteitsprogramma zelf
  ☐ Het bieden van after sales service
  ☐ Anders, namelijk _____
☐ Nee

■ Welke effecten denkt u dat uw loyaliteitsprogramma heeft?

Door het loyaliteitsprogramma:…

	Zeer mee oneens						Zeer mee eens
	1	2	3	4	5	6	7
Zijn klanten sterker overtuigd van de kwaliteit van ons bedrijf.	☐	☐	☐	☐	☐	☐	☐
Voelen klanten een sterkere band met ons bedrijf.	☐	☐	☐	☐	☐	☐	☐
Zijn klanten minder geneigd bij concurrenten te kopen.	☐	☐	☐	☐	☐	☐	☐
Is de klantentrouw in het koopgedrag groter.	☐	☐	☐	☐	☐	☐	☐
Begrijpen wij de wensen en behoeften van de klant beter.	☐	☐	☐	☐	☐	☐	☐
Is de afstand tussen ons en de klant kleiner geworden.	☐	☐	☐	☐	☐	☐	☐
Kunnen wij beter onderscheid maken tussen verschillende klantgroepen.	☐	☐	☐	☐	☐	☐	☐

■ Over het geheel genomen zijn wij over ons loyaliteitsprogramma:

	1	2	3	4	5	6	7	
Zeer ontevreden	☐	☐	☐	☐	☐	☐	☐	Zeer tevreden

■ Alle kosten en baten afgewogen, denkt u dat uw loyaliteitsprogramma winstgevend is?

	1	2	3	4	5	6	7	
Zeer verliesgevend	☐	☐	☐	☐	☐	☐	☐	Zeer winstgevend

Deel 2B   In te vullen door bedrijven <u>zonder</u> loyaliteitsprogramma

■ Is binnen uw bedrijf ooit overwogen een loyaliteitsprogramma te introduceren?

	1	2	3	4	5	
Nooit over gesproken	☐	☐	☐	☐	☐	Serieus overwogen

■ Hoe waarschijnlijk is het dat uw bedrijf in de komende drie jaar een loyaliteitsprogramma zal introduceren?

	1	2	3	4	5	
Zeer onwaarschijnlijk	☐	☐	☐	☐	☐	Zeer waarschijnlijk

■ Hoeveel procent van uw concurrenten heeft, naar uw inschatting, op dit moment een klantenkaart-programma? _____ %

Deel 3   Algemene bedrijfsgegevens
We willen u nu naar enkele meer algemene karakteristieken van uw bedrijf vragen. Bij de open vragen geldt dat u een inschatting mag maken indien u geen exacte cijfers beschikbaar hebt.

I.   Karakteristieken van het Bedrijf
■ In welke sector van de detailhandel opereert uw bedrijf hoofdzakelijk?
- ☐ Supermarkten en levensmiddelen
- ☐ Kleding en mode
- ☐ Wonen en Woninginrichting
- ☐ Wit-, bruin- en grijsgoed
- ☐ Doe-het-zelf producten
- ☐ Warenhuis
- ☐ Brandstof (Benzinestation)
- ☐ Persoonlijke verzorging
- ☐ Hobby & vrije tijd

☐ Anders, namelijk _____

■ Hoeveel winkels (vestigingen) heeft uw onderneming? _____

■ Is uw bedrijf een franchiseonderneming of een vrijwillig filiaalbedrijf?

      ☐ Ja
      ☐ Nee
      ☐ Gedeeltelijk → Om welk percentage van de winkels gaat het? _____ %

■ Hoeveel werknemers zijn er in uw bedrijf werkzaam, gemeten in Full Time Equivalents?
      _____ FTEs

■ Hoeveel SKU's (unieke producten) heeft van een gemiddelde winkel van uw bedrijf?
      _____ SKU's

■ Hoe vaak koopt uw gemiddelde klant iets bij uw bedrijf of bij één van uw concurrenten?
      ☐ 30-60 keer per jaar (ongeveer wekelijks)
      ☐ 5-30 keer per jaar
      ☐ minder dan 5 keer per jaar

■ Hoe presteert uw bedrijf op de volgende zaken, in vergelijking tot uw naaste concurrenten?

	Veel slechter						Veel beter
	1	2	3	4	5	6	7
Het opbouwen van een positief imago	☐	☐	☐	☐	☐	☐	☐
Het realiseren van klanttevredenheid	☐	☐	☐	☐	☐	☐	☐
Het behouden van bestaande klanten	☐	☐	☐	☐	☐	☐	☐
Het aantrekken van nieuwe klanten	☐	☐	☐	☐	☐	☐	☐
Het realiseren van het gewenste marktaandeel	☐	☐	☐	☐	☐	☐	☐
Het realiseren van de gewenste groei	☐	☐	☐	☐	☐	☐	☐

II.   De respondent

■ Wat is uw functie binnen de onderneming?
      ☐ Directeur
      ☐ Commercieel directeur
      ☐ Marketing manager
      ☐ Marketing analist, Marktonderzoeker
      ☐ Anders, namelijk _____

■ Hoe lang bent u al werkzaam bij deze onderneming? _____ jaar

Tot slot…

Indien u nog opmerkingen of suggesties heeft, stellen wij het zeer op prijs wanneer u deze hieronder kenbaar maakt.

_____
_____
_____
_____

Wilt u een samenvatting van de onderzoeksresultaten ontvangen?

☐ Ja → U kunt hier uw naam en adresgegevens invullen.

_____
_____
_____

Einde van de vragenlijst

Wij danken u hartelijk voor uw medewerking

Appendix C

Data Sources used for Empirical Study Chapter 3

Source	Obtained data
GfK Panel Services 1998-2000	Purchasing behavior of Dutch households in supermarkets, loyalty program memberships, privacy concerns, loyalty program enjoyment, and socio-demographics of the households
Dutch Consumer Reports 2000	Discount Rate of Dutch Supermarket Loyalty Programs
Dutch Consumer Reports 1998-2000	Price Level Dutch Supermarket Chains
Elsevier Business Information 2000	Outlet Locations of Dutch Supermarket Chains
ACNielsen Consumer Insight 2002	Loyalty Program Membership rate of American and Canadian households in supermarkets.

Appendix D

Instrumental variable measurement (Chapter 3)

Enjoyment of program membership

Measured by the following items on five-point Likert scale

(1 = strongly disagree; 5 = strongly agree):

- I enjoy participating in loyalty or saving programs.
- Loyalty and saving programs offer attractive benefits.
- I appreciate being selected for loyalty programs and special offers.

Cronbach's alpha = .79

Average value = 3.14, standard deviation = .82

Privacy concerns of registration

Measured by the following item, on five-point Likert scale

(1 = strongly disagree; 5 = strongly agree):

- The registration systems of loyalty programs infringe on my privacy.

Average value = 2.90, standard deviation = .96

Summary in Dutch

(Nederlandse Samenvatting)

In de detailhandel wordt veelvuldig gebruik gemaakt van loyaliteitsprogramma's, in de vorm van klantenkaarten. Een loyaliteitsprogramma geeft vorm aan een strategie van klantrelatiemanagement (customer relationship management ofwel CRM). CRM stelt zich tot doel om in continu contact te staan met klanten en met een persoonlijke behandeling van de meest waardevolle klanten, de effectiviteit van marketing initiatieven en klantretentie te vergroten. Daarbij staan de relaties met klanten centraal en niet productlijnen of merken. Het creëren van klantloyaliteit is een belangrijk element van relatiemanagement. Loyale klanten voelen zich verbonden met het bedrijf, hetgeen zich gedragsmatig uit in herhalingsaankopen en een hoge share-of-wallet[1]. Voor de meeste bedrijven geldt dat hun klanten sterk onderling verschillen in loyaliteit en winstgevendheid. Daarom is differentiatie tussen klanten een belangrijk element van klantrelatiemanagement.

In massamarkten is het vormgeven aan klantrelatiemanagement niet gemakkelijk omdat klanten meestal anoniem blijven, er slechts beperkt direct contact bestaat met klanten en klantrelaties niet-contractueel zijn. Om klantspecifieke informatie te verwerven is het opbouwen van databases onontbeerlijk. Daarnaast is er behoefte aan relationele marketinginstrumenten om te komen tot klantdifferentiatie en een gerichte en persoonlijke benadering van klanten. Relationele marketinginstrumenten kunnen relaties versterken door het verschaffen van economische of sociale waarde. Dit proefschrift spitst zich toe op een specifiek relationeel marketing instrument: het loyaliteitsprogramma.

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[1] Share-of-wallet meet de bestedingen bij een specifieke detaillist als fractie van de totale bestedingen in een sector; het begrip kent geen duidelijke vertaling in het Nederlands.

Een loyaliteitsprogramma kan worden gedefinieerd als een geïntegreerd systeem van marketing acties die tot doel hebben om de loyaliteit van deelnemers aan het programma te versterken. Deze acties kunnen bestaan uit bijvoorbeeld prijskortingen, spaarprogramma's loterijen, persoonlijke post, etc. Daarnaast wordt door middel van het scannen van klantenkaarten klantspecifieke informatie verkregen. De manier waarop klanten deelnemer kunnen worden van het programma en de acties die onder het programma plaatsvinden, bepalen de exacte vormgeving (design) van het loyaliteitsprogramma.

De centrale onderzoeksvraag van dit proefschrift is welke rol loyaliteitsprogramma's kunnen spelen in de marketing-mix van detaillisten. Daarbij dienen een aantal deelvragen te worden beantwoord. Wat drijft detaillisten om een loyaliteitsprogramma te adopteren? Welke factoren zetten vervolgens klanten ertoe aan om het programma te adopteren, dat wil zeggen deelnemer van het programma te worden? Daaropvolgend kan de vraag worden gesteld hoe loyaliteitsprogramma's invloed hebben op de loyaliteit en de winstgevendheid van klanten. Belangrijke deelvragen zijn hoe de vormgeving van het loyaliteitsprogramma en het bestaan van concurrerende loyaliteitsprogramma's van invloed zijn op de effectiviteit. De onderzoeksvraag wordt aan de hand van drie empirische studies geanalyseerd.

De eerste studie (**hoofdstuk 2**) bestaat uit een onderzoek onder 180 detaillisten met behulp van vragenlijsten. Een onderzoek vanuit het perspectief van de aanbieder biedt inzicht in de loyaliteitsprogramma-adoptie van detaillisten. Daarnaast kan het een meer compleet beeld geven van de effectiviteit van loyalteitsprogramma's dan met consumentendata mogelijk is, bijvoorbeeld met betrekking de ontwikkeling van klantkennis. Soortgelijk adoptieonderzoek bestaat naar de adoptie van bijvoorbeeld MDS systemen en database marketing. Samen met de literatuur op het gebied van loyaliteitsprogramma's en relatiemarketing is deze kennis gebruikt om te komen tot een conceptueel raamwerk, dat als basis ligt voor het opstellen van de vragenlijst. De ondervraagde detaillisten zijn actief in een groot aantal sectoren waar loyaliteitsprogramma's voorkomen zoals supermarkten, warenhuizen, kledingwinkels, benzinestations, etc. Van de respondenten heeft 37% een loyaliteitsprogramma geadopteerd.

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De adoptie van loyaliteitsprogramma's wordt sterk gedreven door concurrentiële factoren. Zo blijkt de adoptie van loyaliteitsprogramma's door concurrenten een sterk stimulerende invloed te hebben evenals de algemene concurrentie-intensiteit. Een secundaire rol is weggelegd voor klantrelationele en organisatorische factoren. Omdat loyaliteitsprogramma's een detaillist mogelijkheden geeft voor klantdifferentiatie, mag verwacht worden dat een meer gevarieerde klantenkring aanzet tot adoptie van een loyaliteitsprogramma. Detaillisten met een klantenkring die sterk varieert in winstgevendheid blijken inderdaad vaker een loyaliteitsprogramma te hebben; dit geldt niet voor variatie in productpreferenties. Klantoriëntatie en decentralisatie van de onderneming zijn organisatorische factoren die detaillisten aanzetten tot adoptie.

De detaillisten met een loyaliteitsprogramma (n = 66) blijken deze vooral te gebruiken voor spaarprogramma's, directe prijspromoties en het sturen van persoonlijke post. Van andere elementen zoals loterijen, kredietfaciliteiten of speciale evenementen voor klantenkaarthouders wordt slechts sporadisch gebruik gemaakt. De overgrote meerderheid van de programma's maakt geen gebruik van samenwerking met andere bedrijven (single-vendor programma's). De detaillisten is gevraagd in hoeverre zij hun loyaliteitsprogramma als effectief beschouwen met betrekking tot de vergroting van klantloyaliteit (zowel gedrags- als attitudeloyaliteit) en van klantkennis. Het merendeel van de detaillisten beoordeelt zijn programma positief, hoewel er duidelijke onderlinge verschillen bestaan.

De mate waarin een loyaltiteitsprogramma leidt tot betere kennis van klanten is sterk afhankelijk van de intensiteit waarmee de data worden geanalyseerd. Ook een spaarcomponent stimuleert de opbouw van klantkennis, waarschijnlijk omdat het ontvangen van spaarpunten klanten ertoe aanzet hun klantenkaart consequent te gebruiken. Betere klantkennis heeft op zijn beurt een positief effect op klantloyaliteit. Daarnaast wordt klantloyaliteit wederom positief beïnvloed door een eventuele spaarcomponent van het loyaliteitsprogramma.

In de tweede studie (**hoofdstuk 3**) staat het effect van loyaliteitsprogramma's op gedragsloyaliteit centraal. Voor de empirische analyse wordt gebruik gemaakt van panel data van 1926 Nederlandse huishoudens aangaande hun koopgedrag in supermarkten en hun deelname van de zeven loyaliteitsprogramma's in deze sector.

De studie houdt expliciet rekening met de tweezijdige causaliteit tussen deelname aan een loyaliteitsprogramma en gedragsloyaliteit. Het vergelijken van de loyaliteit van leden en niet-leden levert namelijk geen correcte meting van effectiviteit op, omdat juist loyale klanten sterker geneigd zijn deelnemer te worden van het programma. Om dit endogeniteitsprobleem op te lossen wordt gebruik gemaakt van twee instrumentele variabelen die de beslissing om deelnemer te worden van een loyaliteitsprogramma beïnvloeden, maar niet gerelateerd zijn aan de preferentie voor een specifieke supermarkt. Het gaat daarbij om: 1) privacy zorgen gerelateerd aan de deelname aan loyaliteitsprogramma's en 2) het plezier dat de consument ondervindt van deelname aan loyaliteitsprogramma's.

Verder maakt de studie gebruik van marktbrede data. Dit stelt ons in staat om share-of-wallet te gebruiken als maat voor gedragsloyaliteit. Daarnaast kunnen we modelmatig rekening houden met deelnamepen van concurrerende loyaliteistprogramma's (ongeveer 53% van de panel-huishoudens blijkt deelnemer van meerdere loyaliteitsprogramma's). Ook kunnen verschillen in effectiviteit tussen loyaliteitsprogramma's worden geanalyseerd.

De effectiviteit van de zeven loyaliteitsprogramma's wordt gemeten met een Tobit-II model met instrumentele variabelen. Daarbij wordt eerst de loyaliteitsprogramma-adoptie van huishoudens verklaard uit een aantal variabelen waaronder de twee instrumentele variabelen. De variabele privacy zorgen gerelateerd aan loyaliteitsprogramma's heeft een negatieve invloed op loyaliteitsprogramma-adoptie. Klanten moeten persoonsinformatie geven om deelnemer te kunnen worden van een loyaliteitsprogramma en hun zorgen zijn gerelateerd aan eventueel misbruik hiervan. De variabele plezier van deelname aan loyaliteitsprogramma's is positief gerelateerd aan adoptie, hetgeen aangeeft dat sommige huishoudens ook niet-economisch nut ondervinden van een loyaliteitsprogrammadeelname. In een tweede stap worden de geschatte adoptiekansen als verklarende variabele opgenomen in het Tobit-II model. Dit model is

gespecificeerd als een attractiemodel waarbij voor een selectievertekening wordt gecorrigeerd door opname van een vergelijking voor supermarkt-keuze.

Uit het Tobit-II model blijkt dat loyaliteitsprogrammadeelname een positieve invloed heeft op share-of-wallet. Voor vier van de zeven individuele programma's is het effect significant. Een loyaliteitsprogramma vergroot de share-of-wallet van een klant gemiddelde met 8.3%, maar het effect varieert tussen 2.4% en 26.6% voor de verschillende loyaliteitsprogramma's. Als we rekening houden met de kosten van beloningen aan klantenkaarthouders, dan blijken drie van de zeven loyaliteitsprogramma's te leiden tot positieve netto-opbrengsten. Het prijspromotiepercentage van het loyaliteitsprogramma (directe prijskortingen als percentage van totale aankopen) blijkt een negatieve invloed en het spaarbeloningspercentage (waarde van beloningen onder het spaarprogramma als percentage van de totale aankopen) een positieve invloed te hebben op de grootte van het effect. Een analyse waarbij geen rekening wordt gehouden met tweezijdige causaliteit concludeert dat alle programma's positief bijdragen aan share-of-wallet en meet effectgroottes die 1.4 tot 7.9 zo hoog zijn als voor het volledige model met endogeniteitscorrectie.

De derde studie (**hoofdstuk 4**) houdt zich bezig met de dynamische effecten van een specifieke beloning gegeven als onderdeel van een loyaliteitsprogramma. Het gaat om een winkelcheque die loyaliteitsprogrammadeelnemers krijgen als beloning voor het sparen van voldoende punten in een spaarprogramma. De waarde van de cheques groeit met het aantal gespaarde punten; de cheques worden eens per half jaar uitgereikt en zijn vervolgens een half jaar geldig. In brede zin geeft de studie inzicht in de vraag of het zin heeft om goede klanten te belonen boven minder loyale klanten.

De winkelcheque wordt door bijna de helft van de ontvangers ingewisseld. De kans op verzilvering stijgt met de hoogte van het chequebedrag en met het aantal direct mails dat de ontvanger in de inwisselperiode ontvangt. Verder is de kans op inwisselen aanzienlijk groter als de klant ook in de vorige periode een cheque ontving en inwisselde. De tijdsduur dat men al

deelnemer is van het programma heeft een licht negatief effect. Voor klanten die hun cheque niet inwisselden maakte een groot gedeelte nochtans een aankoop in de betreffende periode.

Of de cheque ook leidt tot additionele omzet hangt af van het effect van de cheque op de timing van een aankoop en op transactiegrootte. Aan de ene kant vergroot de cheque de aantrekkelijkheid van de winkel door lagere prijzen en kan ook van het feit dat de klant de cheque zelf 'verdiend' heeft een stimulerende werking uitgaan. Aan de andere kant is er voor een loyale klant geen noodzaak om zijn koopgedrag te veranderen om de cheque te verzilveren en bestaan er mogelijk aankoopdips na de inwisseling. Om dit vraagstuk empirisch te analyseren wordt voor de timing van een aankoop een discreet hazard rate model en voor transactiegrootte een lineair regressiemodel gebruikt.

Uit de empirische analyse onder 5000 huishoudens blijkt dat de winkelcheques een positieve invloed hebben op consumentenaankopen, maar niet onder alle omstandigheden. Cheques met een grote waarde – welke worden gegeven aan de beste klanten – genereren het grootste effect op zowel aankoop timing als transactiegrootte. Verder blijken de cheques aanzienlijke effectiever te worden als de klant ook de vorige cheque ontving en zelfs nog effectiever als deze cheque ook nog werd ingewisseld. Verder blijkt de effectiviteit van de cheques af te nemen gedurende de looptijd en na verloop kan de cheque zelfs ineffectief worden. Na het gebruik van een cheque wordt een aankoopdip waargenomen in de timing van de erop volgende aankoop. Wel blijkt het transactiebedrag van de volgende aankoop iets hoger te liggen.

Met behulp van de modelschattingen kan vervolgens de invloed van de cheque worden berekend op customer lifetime value[2]. Uit de analyse blijkt dat vanwege de aanzienlijk waarde van de cheques het netto-effect op customer lifetime value negatief is. Klanten belonen zonder daaraan voorafgaande gedragsmatige prikkels te geven is dus niet winstgevend. Dit hoeft niet

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[2] Customer lifetime value is de waarde van een klant gedurende zijn volledige economische leven en wordt berekend als de netto conante waarde van alle klantgerelateerde kasstomen. Een Nederlandse vertaling van dit begrip is moeilijk te geven.

noodzakelijk een probleem te zijn omdat het vergaren van spaarpunten voorafgaand aan de beloning waarschijnlijk stimulerend is voor consumenten. Het belonen van loyale klanten blijkt het meest lucratief. In de eerste plaats blijken de cheques met hoge waardes minder verliesgevend te zijn, ondanks de hoge kosten die ermee samenhangen. Verder blijken de cheques veruit het meest winstgevend te zijn voor klanten die ook de vorige cheque ontvingen en inwisselden.

We kunnen concluderen dat loyaliteitsprogramma's een goed instrument kunnen zijn voor klantdifferentiatie en klantrelatiemanagement (**hoofdstuk 5**). Wel worden loyaliteitsprogramma's minder effectief als consumenten veel verschillende klantenkaarten naast elkaar gebruiken. Adoptiebeslissingen moeten derhalve niet enkel te worden ingegeven door de adopties van concurrenten, maar ook door de mogelijkheden en wenselijkheid van klantdifferentiatie en de klantoriëntatie van de onderneming. Omdat de deelname aan een loyaliteitsprogramma geen sterke differentiërende werking heeft, moet het programma zelf voldoende mogelijkheden bieden om tussen leden te differentiëren. Daarnaast biedt de informatie verkregen uit klantenkaarten mogelijkheden om inzicht in klanten te vergroten. Een doelmatig gebruik van een loyaliteitsprogramma is noodzakelijk, omdat het programma anders waarschijnlijk niet winstgevend is.

Detaillisten die overwegen een loyaliteitsprogramma te adopteren dienen zich te realiseren dat de vormgeving van het programma minstens zo belangrijk is als de adoptie zelf. Ook voor bestaande loyaliteitsprogramma's is een heroverweging aangaande de vormgeving nuttig. Van spaarprogramma's blijkt een stimulerende werking uit te gaan waar prijspromoties eerder een negatieve invloed hebben op de effectiviteit. Verder zouden detaillisten beter gebruik proberen te maken van de aankoopdata die middels het scannen van klantenkaarten worden verkegen. Een veelzijdig gebruik komt ook de winstgevendheid van het programma ten goede.

Beleidsmakers zouden detaillisten moeten stimuleren om heldere informatie te geven aan klanten aangaande het gebruik van klantenkaartdata, zonder daarbij additionele restricties te stellen aan het gebruik ervan. De differentiatie tussen klanten die het loyaliteitsprogramma doorvoert is geen reden tot zorg voor consumentenorganisaties. In alle branches bestaan er namelijk ook detaillisten

die geen gebruik maken van loyaliteitsprogramma's. Bovendien zijn de differentiatiecriteria veel transparanter voor de consument dan bij veel alternatieve differentiatie strategieën.

Dit proefschrift toont in brede zin aan dat het belangrijk is om rekenschap te geven van endogeniteitsproblemen in consumentenmodellen. De causaliteit tussen de inzet van relationele marketing instrumenten en klantloyaliteit is namelijk meestal tweezijdig, omdat juist loyale klanten worden geselecteerd (of zichzelf selecteren) voor deze instrumenten. Verder laat het proefschrift zien dat bevoordelen van loyale klanten een goede strategie is, maar dat het altijd belangrijk is om ook met de kosten van een marketinginvestering rekening te houden. Een effectieve strategie is namelijk niet noodzakelijk ook een winstgevende strategie.

Het onderzoek naar loyaliteitsprogramma's heeft in de afgelopen jaren een sterke groei doorgemaakt. Toch bestaan er nog talloze mogelijkheden voor verder onderzoek op dit gebied.

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