The Influence of Marketing Instruments and Rewarding on Cardholders' Behavior in Coalition Loyalty Programs

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The Influence of Marketing Instruments and Rewarding on Cardholders' Behavior in Coalition Loyalty Programs

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To my husband Jakov

CONTENTS

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CHAPTER 1
INTRODUCTION

1.1 Introduction

The past three decades have seen an increased focus on loyalty marketing in marketing strategy. Practitioners and academics alike have aimed to enhance marketing productivity through effective identification and management of relationships with customers (Kumar & Reinartz 2006). The achievement of these aims was facilitated by advances in the development of relationship marketing tools, primarily loyalty programs (hereafter, LPs), as specific marketing programs designed to reward and therefore encourage customer loyalty (usually through the enhancement of customer retention levels; Sharp & Sharp 1998; Berman 2006). From the 1980s when the first contemporary frequent-flier LP was introduced by American Airlines, total LP membership in the United States had increased to 1.8 billion people by 2008, spanning numerous marketing sectors (Ferguson & Hlavinka 2009). In Europe and North America alike, from 70 percent to 96 percent of households today participate in at least one LP (The Chief Marketing Officer (CMO) Council Report 2010). The Food Marketing Institute (FMI) reports that more than 76 percent of all U.S. grocery retailers offer an LP. Furthermore, LP members or cardholders generate between 55 percent and 70 percent of company sales, and some food retailers have indicated that up to 95 percent of their sales come from LP members (FMI Reports 2009). These trends are still increasing, despite the severe global economic recession (Ferguson & Hlavinka 2009; CMO Council 2010). Notwithstanding such dissemination of LPs in practice, the effectiveness of LPs remained a much-debated issue in the academic and managerial literature, focusing on the central question of the effectiveness of LPs. Empirical studies primarily focused on the effects of LPs offered by a single firm (i.e., sole-proprietary LPs). In contrast, networking among firms has become a growing trend, thereby resulting in the creation of powerful coalition LPs, in which several firms jointly participate in an LP (Clark 2006; Ferguson & Hlavinka 2009). This type of LP structure is often claimed to be particularly effective, and it is believed that coalition LPs represent "the future of loyalty marketing programs" (Capizzi & Ferguson 2005: 79) and "the natural end-game for loyalty evolution" (Ferguson & Hlavinka 2006: 297). Little empirical research exists on the effects of coalition LPs, and particularly on cardholders' behavior in such LPs in response to marketing efforts. This thesis

aims to address these gaps in the LP literature by specifically focusing on the behavior of cardholders and the effectiveness of marketing instruments within such a coalition LP.

1.2 Coalition LPs

The proliferation of LPs and LP memberships have resulted in more sophisticated LP designs aimed to enhance LPs' effectiveness and efficiency. One of the resulting trends is an increase in LP partnerships or coalitions of multiple companies that jointly offer an LP scheme (Clark 2006; Blattberg, Kim & Neslin 2008; Ferguson & Hlavinka 2009). This type of LP scheme has been largely underresearched. Through their ability to offer cardholders substantially faster points collection across many vendors and a host of differing redemption options for those points, coalition programs (or multi-vendor LPs) have quickly grown into the largest programs in their respective markets. In Canada, two-thirds of households participate in the Air Miles coalition program (McBride & Sansbury 2009). The Nectar coalition LP in the United Kingdom reaches more than 50 percent of households, and since its introduction in 2002, collectors have redeemed more than £1 billion worth of rewards (Groupe Aeroplan 2010). With 7 million active card users and an average of 750,000 new members signing on per month, Payback has become Germany's leading LP. Its recent introduction in Poland attracted 2 million participants in just two weeks (McBride & Sansbury 2009). According to Wikipedia (2010) in the Netherlands, since the introduction of first coalition LP in the 1990s, the Air Miles program, the popularity and the number of coalition LPs has escalated, resulting today in competition among several coalition LPs. In 2008, 3.1 million households participated in the largest coalition LP, Air Miles.

Coalition LPs differ from sole-proprietary LPs. Their specific structure offers two important, value-increasing benefits for cardholders and participating vendors (Ferguson & Hlavinka 2006; Blattberg, Kim & Neslin 2008): (1) increased benefits from cross-purchasing and (2) faster obtaining of rewards. Usually, LP coalitions feature vendors in various fast-moving consumer goods markets as well as durables and specialized service providers (most often including grocery, gas, department store, and credit card providers, among other vendors). Because customers collect points on purchases at each LP partner, they may be inclined to cross-purchase across coalition vendors to obtain points (and subsequently) rewards more quickly. Furthermore, this faster collection of points (or any other form of reward currency, for that matter) increases cardholders' prospects of collecting sufficient amounts to reach reward thresholds, which subsequently makes rewarding (and rewarding effects on behavior) more likely. Most LP studies have primarily dealt with the potential

effects of introducing a LP on firm performance and the resultant effects of LP membership on cardholders' behavior. However, less research has addressed the effects within an LP itself, particularly with respect to effects of reward redemption on cardholders' prior and subsequent purchase behavior. To the best of our knowledge, this is one of the first studies to systematically, empirically analyze effects within a coalition LP, particularly focusing on the effects of marketing instruments and rewards within this type of LP.

In the following section of this chapter, we first provide a definition of LPs and discuss the terminology adopted in this thesis. The subsequent section 1.4 provides a more thorough discussion of the content and research questions of the studies in this thesis.

1.3 Definition and Terminology

For the purpose of this thesis, we adopt Sharp and Sharp's (1997: 474) definition of LPs as "structured marketing efforts which reward, and therefore encourage, loyal behavior, behavior which is potentially of benefit to the firm." Numerous different terms are encountered in the literature: *reward programs*, *frequency reward programs*, *loyalty cards or schemes*, *points cards*, *advantage card*, *frequent-flier programs*, and more. We use the hypernym *loyalty program* to encompass all these terms and various forms of program designs, which should contain the following critical elements (Leenheer 2004; Berman 2006; Blattberg, Kim & Neslin 2008):

- *Structured*: Customers must (formally) become LP members to obtain benefits of the LP. An LP provider must be able to identify the LP member and use the information obtained through the LP to manage the relationship with the member.
- *Marketing Efforts*: An LP should allow the program provider to tailor marketing efforts to LP members (e.g., through targeted mailings, LP events, personalized offers).
- *Rewarding*: An LP should reward members on the basis of their current or future value to the firm. This is usually done through cardholders' accumulation of some reward currency (e.g., LP points) based on the cardholders' purchase behavior (e.g., 1 LP point for each euro spent at the LP provider). Typically, LP members are offered discounts, various goods or services, personalized offers, or preferential treatment.

- *Fostering Loyalty*: The main purpose of an LP should be to foster and reward members' loyalty and therefore encourage customer retention and customer share development. Hence, LPs typically have long-term span.

LP partnerships have two essential forms: coalitions of equally valued LP partners (usually operated by a specialized, third-party LP provider) or a dominant firm's LP with complementary partners (e.g., an airline's frequent-flier program with partners in credit card services, rental companies, travel agencies, or retailers). Although we discuss both forms of LP partnerships (particularly in chapter 2, in a discussion of the LP literature), throughout this thesis, we primarily focus on the former type, *coalition LPs* (also *multi-vendor LPs* or *multi-partner LPs*). The terms *coalition LPs* and *multi-vendor LPs* are synonyms throughout this text. Another often-used pair of synonyms is *LP member* and *cardholder*, as there is no consensus in the existing literature on which of these two terms is preferred.

1.4 Research Aims and Contributions

This thesis's main research problem statement is delineated as follows:

This thesis aims to provide a further understanding of behavioral responses of cardholders within a coalition LP.

To do so, it is first necessary to understand the effects of LPs in general. Although much has been written about LPs, the field has polarized instead of reaching consensus on the effects of an LP on members' behavior, which has stirred considerable debate among practitioners and academicians alike. Although some studies show a positive impact of LPs on customer behavior and firm performance (Lal & Bell 2003; Taylor & Neslin 2005; Liu 2007), other researchers have questioned the effectiveness of LPs (Dowling & Uncles 1997; Sharp & Sharp 1997; Shugan 2005; Hartman & Viard 2008). Some overviews that targeted practitioners are available (O'Brien & Jones 1995; Uncles, Dowling & Hammond 2003; Wansink 2003; Berman 2006), but it seemed necessary to collect and review the available academic (empirical) research and separate what is known from what is conjectured. Therefore, the first study of this thesis (chapter 2) aims to provide a comprehensive, research-based synthesis of current knowledge about LPs, to identify existing gaps in knowledge and to outline future trends and research directions. The main research questions of chapter 2 are the following:

- *What are the effects of LP participation on customer behavior and attitudes in LPs?*
- *What are the trends and research gaps pertaining to LPs?*

In an attempt to answer the first research questions, the study in chapter 2 specifically focuses on the topics of enrollment in LPs, LP effects on behavior, LP effects on attitudes, effects of LP mechanisms (e.g., points pressure, rewarded behavior, personalized marketing), and the role of LP design. It reviews the available evidence and synthesizes it according to the strength of the evidence.

Among other findings on the trends and gaps in LP literature, the findings of this first study revealed a trend toward LP partnerships and a belief that coalition LPs represent the future of loyalty marketing (Capizzi & Ferguson 2005; Berman 2006; McBride & Sansbury 2009). In contrast, some anecdotal evidence expressed skepticism because of the incongruence of coalition LP benefits with focal products (i.e., they mainly offer indirect rewards) and a division of loyalty across vendors (members buy brand A at vendor B to redeem a reward at firm C) (Dowling & Uncles 1997; Roehm et al. 2002; Kivetz 2005). Because the empirical studies on coalition LPs were scarce, the logical conclusion was to empirically analyze the effects in such an LP. In section 1.2, we noted that coalition LPs may particularly benefit from cross-purchase opportunities and possibilities of faster reward redemption. Studies in chapters 3 and 4 specifically address these two issues. In addition, the literature survey identified a gap in knowledge on the effectiveness of marketing instruments (e.g., sales promotions, targeted mailings) within an LP. Therefore, the subsequent chapters (chapters 3 and 4) present empirical studies of the marketing effects in a large Dutch multi-vendor LP (MVLP), from which we obtained the data for empirical analyses.[1]

Addressing the identified gaps in knowledge in chapter 2, the study in chapter 3 formulated these main research questions:

- *What is the effect of promotions (promotional mailings) within a coalition LP on spending levels across multiple LP vendors?*
- *How do the effects of marketing instruments (promotional mailings) depend on the promotion's size or the type of communication channel used?*

[1] We adopt the term *multi-vendor LP* in this study to emphasize the multiple-vendor structure of the LP, since the focus is on the sales performance of individual vendors within the coalition LP.

- *Do marketing instruments in a coalition LP induce cross-purchasing through joint mailings and cross-vendor promotional effects?*

The marketing instruments analyzed in this study are promotional mailings to LP members, which are a frequently used marketing tool to increase sales (i.e., LP points collection) at LP vendor(s). More specifically, the study examines the effects of individual and joint promotions on the weekly sales performance of main vendors in the MVLP. An examination of the effectiveness of joint versus individual mailings of coalition partners, as well as the effects of individual mailings of one LP partner on the sales performance of other coalition partners provides insights into cross-purchasing (and cross-vendor) effects in the MVLP. The study analyzes weekly aggregated levels of points collection (sales approximation) for the five largest coalition partners in the MVLP.

In chapter 4, we focus on the effects of rewarding within an LP on the basis of the preceding and subsequent behavior of LP members. The main research questions of the study in chapter 4 are the following:

- *What are the effects of reward redemption on cardholders' purchase behavior in a continuous, coalition LP?*
- *How do marketing instruments affect cardholders' purchase behavior before and after reward redemption?*
- *How do cardholders' characteristics and reward type influence the rewarding effects?*

We noted earlier that coalition LPs allow for faster collection of an LP reward currency (e.g., points) and relatively easier and broader reward redemption. Therefore, this setting is beneficial for analyzing the potential effects of rewarding in the LP. Although some studies have examined the effects of rewarding and driving mechanisms in short-term LPs (with a short time span and predefined, automatic rewarding; i.e., "Buy X amount, get Y reward") (Lal & Bell 2003; Taylor & Neslin 2005; Kivetz, Urminsky, & Zheng 2006), little is known about rewarding effects in more typical continuous (i.e., long-term) LPs in which LP members themselves decide when to redeem, how much to redeem, and what. Therefore, this study first develops a comprehensive theoretical explanation of psychological drivers of rewarding effects in continuous LPs and subsequently empirically tests the hypothesized effects. Specifically, this study analyzes effects of reward redemption on weekly purchase incidence and spending behavior of MVLP cardholders in the weeks preceding the reward

and in the few weeks after the reward. Moreover, it explores the influence of marketing instruments (LP mailings and cross-purchasing behavior) on these effects, controlling for individual differences across LP members. The study uses both behavioral and attitudinal data from 763 LP members over a period of 183 weeks.

Finally, chapter 5 presents overall conclusions of this thesis, outlines the main theoretical and managerial implications of the findings, and proposes future avenues for research in the LP area.

As such, this thesis consists of three self-contained studies, based on the research aims and questions presented in this introductory chapter. Table 1.1 presents the main classification and description of the conducted studies.

Table 1.1. Classification and description of analyzed studies

	Chapter 2	**Chapter 3**	**Chapter 4**
Research aim	Literature survey of LP effects	Marketing instruments' effectiveness in MVLP	Effects of rewarding in MVLP
Data	Secondary data	Sales approximation, cross-sectional time series	Transactional (panel) and attitudinal (survey) data
Sample size	115 studies	5 vendors, 141 weeks	763 members, 183 weeks
Methodology	Literature survey	Econometric model (Seemingly Unrelated Regressions)	Panel random-effects sample selection model

CHAPTER 2
LOYALTY PROGRAMS: CURRENT KNOWLEDGE AND RESEARCH DIRECTIONS*

2.1 Introduction

Contrary to the postulations on market saturation, consumer participation in loyalty programs (LPs) continues to increase. Consumer membership in U.S. LPs, for example, increased 25 percent to 1.8 billion memberships from 2007 to 2009 (Ferguson & Hlavinka 2009). Nowadays, LPs span numerous industries (Consumer Reports 2008) and are particularly pronounced among customer-oriented retailers with relatively similar assortments and in sectors characterized by high purchase frequencies and different profitability potentials of customer segments (Leenheer & Bijmolt 2008).

Academic research on LPs has been substantial over the past decade, and the area is still growing with numerous issues that seem to not be abating. For example, the effectiveness of LPs remains a debated issue among practitioners and academicians. Although some studies have shown a positive impact of LPs on customer behavior and firm performance (Lal & Bell 2003; Taylor & Neslin 2005; Liu 2007), other researchers have questioned the effectiveness of LPs (Dowling & Uncles 1997; Sharp & Sharp 1997; Shugan 2005; Hartman & Viard 2008). Overall, there are not yet a sufficient number of studies with comparable methodology to allow for meta-analytic generalizations. Still, there is a sufficient body of literature to allow for initial generalizations.

This study aims to present an overview of the research conducted on LPs, to outline different findings and their sources, to draw conclusions about the impact of LPs, and to point out the most relevant future research avenues. Contrary to available overviews that target a managerial audience (see O'Brien & Jones 1995; Uncles, Dowling & Hammond 2003; Wansink 2003; Berman 2006), we primarily focus on key insights from academic research and suggest directions for further research.

For the purpose of this study, we adopt Sharp and Sharp's (1997: 474) definition of LPs as "structured marketing efforts which reward, and therefore encourage, loyal behavior." We use the hypernym *loyalty programs* to encompass various forms of program design, from simple frequency reward programs to more sophisticated customer-tier LPs, and from short-

* This chapter is based on Matilda Dorotic, Peter C. Verhoef, and Tammo H. A. Bijmolt, "Loyalty Programs: Current Knowledge and Research Directions,", working paper, University of Groningen.

term LPs that last for few weeks to continuous LPs, because all these programs have the main purpose of fostering and rewarding customer loyalty.

True customer loyalty is twofold: it includes the behavioral decision to repurchase a brand and/or product and the attitudinal attachment to the brand or firm (Dick & Basu 1994; Uncles, Dowling & Hammond 2003). Although behavioral responses relate to purchase patterns (frequency, retention, and volume), attitudinal responses are expressed in level of commitment, favorable attitudes, positive affects, and so on. To induce sustainable effects on members' loyalty, LP participation should enhance both behavioral and attitudinal responses of an LP member. Blattberg, Kim and Neslin (2008: 550) provide a framework describing how LPs influence customer behavior to reinforce customer loyalty. We adopt this framework to guide our discussion. But in view of the twofold character of loyalty, we augment this framework with an attitudinal dimension (see Figure 2.1).

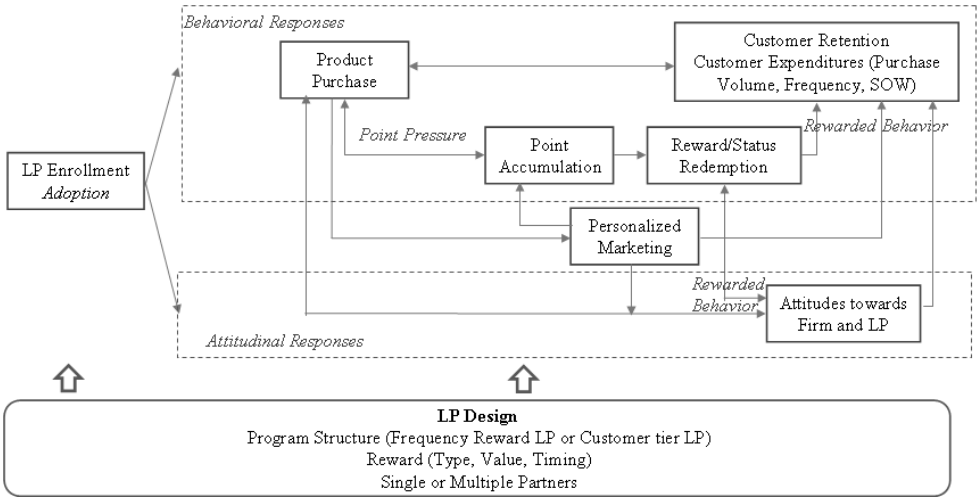

Figure 2.1. Customer responses to loyalty programs (based on Blattberg, Kim & Neslin 2008: 550)

In a typical LP, program members are awarded loyalty points (or some other form of LP currency) for (re)purchases at an LP provider. Members can redeem accumulated currencies for discounts, gifts, and/or membership in higher LP tiers. Three main mechanisms are in play in this process (Blattberg, Kim & Neslin 2008: 550–552). First, the *points-pressure mechanism* relates to the accumulation of loyalty points in the LP for the purpose of obtaining rewards and/or membership in higher LP tiers. The nearer members feel to obtaining a reward, the more likely they are to make the purchases needed to obtain the

reward (Taylor & Neslin 2005; Nunes & Dreze 2006b; Kivetz et al. 2006). Second, the *rewarded-behavior mechanism* affects members' behavioral and attitudinal responses after they obtain the reward and reinforces the dyadic relationship with the firm (Palmatier et al. 2009; Taylor & Neslin 2005). Hence, points pressure encourages members to increase expenditures to obtain a reward, and subsequent redemption of the reward further reinforces customer loyalty by encouraging sustained commitment. The third mechanism is the *personalized marketing mechanism* which comprises personalized marketing efforts directed at members to enhance their behavioral and attitudinal responses. Information about individual preferences and purchase patterns gathered through LPs enables firms to tailor their communication and offers to meet needs of individual customers (Ziliani & Bellini 2004; Kumar & Reinartz 2006). Such personalization increases the value of an offer, thus leading to greater purchase likelihood and attitudinal attachment (Palmatier et al. 2006; Lacey et al. 2007).

The influence of LPs on member's behavior and attitudes are contingent on the LP design (Keh & Lee 2006; Wirtz, Mattila & Lwin 2007). The program design affects the enrollment, behavioral and attitudinal responses to, and effectiveness of the three mechanisms. The LP design comprises the LP structure, rewards, number of LP partners, enrollment requirements, and so on.

In subsequent sections, we use the framework shown in Figure 2.1 to synthesize the literature from which we derive our suggestions for future research opportunities. We summarize available initial generalizations at the end of each section (see Table 2.1). A more detailed overview of selected studies is presented chronologically in tables in the appendix to this text (Tables 2.2 to 2.4). In the following sections, we discuss enrollment in LPs, LP effects on behavior, LP effects on attitudes, LP mechanisms (e.g., points pressure, rewarded behavior, personalized marketing), and the role of LP design.

2.2 Enrollment in LPs

2.2.1 Drivers of LP Enrollment

The effectiveness of LPs critically depends on customer adoption. Customers' decision to enroll in an LP reflects their evaluation of the potential benefits of membership relative to the cost of enrollment and relationship maintenance (De Wulf et al. 2003; Kivetz & Simonson 2003; Leenheer et al. 2007). Low perceived value, as from high participation costs relative to program benefits, is the most prominent reason seemingly satisfied customers avoid enrolling

in LPs or quit their LP memberships (Noble & Phillips 2004). Decreasing the perceived costs of participation and facilitating usage of the LP increase the speed of LP enrollment and its market penetration (Demoulin & Zidda 2009). However, this may encourage enrollment of customers who participate in multiple LPs, which results in a division of purchases across competitors (Uncles, Dowling & Hammond 2003) and lower usage of the LP after enrollment (Mauri 2003; Allaway et al. 2006). Therefore, when introducing an LP, a company must know how customers evaluate its benefits against costs, and it must decide on the level of selectivity at enrollment.

2.2.2 Perceived Cost of LP Participation

On the whole, LP members aim to minimize the monetary and nonmonetary costs of LP participation (De Wulf et al. 2003; Leenheer et al. 2007). The likelihood of enrolling in a new retail LP largely depends on the distance a member lives from the store, which reflects costs of transportation and convenience (Allaway, Berkowitz & D'Souza 2003; Meyer-Waarden 2007; Hunneman, Bijmolt & Elhorst 2008). In addition, privacy concerns are a strong impediment to LP enrollment (De Wulf et al. 2003; Noble & Phillips 2004; Leenheer et al. 2007; van Doorn et al. 2007; Demoulin & Zidda 2009). Other important participation costs include enrollment requirements, requirements for accumulating points, and overall perceived effort to obtain a reward (Kivetz & Simonson 2003; Noble & Phillips 2004; Stauss et al. 2005; Wendlandt & Schrader 2007).

2.2.3 Benefits of LP Participation

Members of LPs are likely to perceive multiple benefits of joining LPs (Leenheer et al. 2007; Mimouni-Chaabane & Volle 2010): utilitarian benefits (e.g., economic savings, convenience), hedonic benefits (e.g., exploration of new products, entertainment through collection and redemption of rewards), and symbolic benefits (e.g., recognition by firm, social status, belongingness). Of these, members attach the greatest importance to economic benefits of LPs (Wright & Sparks 1999; Mimouni-Chaabane & Volle 2010). This explains why customers with an economic shopper orientation are more eager to enroll in LPs (Magi 2003; Leenheer et al. 2007; Demoulin & Zidda 2009). Yet such customers (sometimes known as cherry-pickers) are also more likely to hold multiple LP memberships and thus less loyal to an individual LP provider (Bellizzi & Bristol 2004; Leenheer et al. 2007; Meyer-Waarden 2007). Even though benefits of an LP are crucial to a customer's decision to enroll, their

importance and impact on the behavior of members diminish soon after enrollment (Leenheer et al. 2007; Meyer-Waarden & Benavent 2009).

2.2.4 Characteristics of LP Adopters

The typical early adopters of LPs are heavy users in a category who already possess relatively high levels of loyalty to the provider, who live close to the store, and who hold multiple card memberships (Allaway, Berkowitz & D'Souza 2003; Leenheer et al. 2007; Demoulin & Zidda 2009; Meyer-Waarden & Benavent 2009). Heavy buyers, particularly those with high levels of attitudinal commitment, are the most motivated to enroll in an LP because they can reap the most benefits from the program without changing purchase behavior (Lal & Bell 2003; Dholakia 2006; Hartmann & Viard 2008; Demoulin & Zidda 2009). Although the percentage of such members is low, from 6 to 12 percent, they exhibit a strong influence on the enrollment of new members through social interactions like word-of-mouth recommendations (Allaway, Berkowitz & D'Souza 2003; Allaway et al. 2006). Similarly, customers who live closer to the store have greater convenience benefits from shopping in the store, which makes them more likely to adopt the LP (Allaway et al. 2006). Overall, customers' motivation to join the LP increases if they believe it is easier for them than for other customers to obtain LP rewards (Kivetz & Simonson 2003). Hence, those who live further from the store adopt later (Allaway, Berkowitz & D'Souza 2003; Demoulin & Zidda 2009), have lower spending levels and purchase frequencies, and have longer interpurchase times and greater switching probabilities (Allaway et al. 2006; Meyer-Waarden 2007; 2008). Any enhanced buying behavior of late adopters of an LP erodes soon after the enrollment and returns to pre-enrollment levels within six to eight months (Meyer-Waarden & Benavent 2009).

Customers' sociodemographic characteristics (e.g., age, gender) have little or no influence on LP enrollment (Magi 2003; Evanschitzky & Wunderlich 2006; Demoulin & Zidda 2009). Recently, Melnyk, Van Osselaer, and Bijmolt (2009) found that objects of customer loyalty may differ across gender, but it is unclear how this would translate to LPs. Income, however, shows interesting effects. Higher-income households are more likely to be early adopters of LPs (Allaway, Berkowitz & D'Souza 2003), but they also tend (1) to engage in multiple LPs (van Doorn et al. 2007), (2) to exhibit greater concern about use of their personal data (Graeff & Harmon 2002), and (3) to be more selective in choosing which LPs to adopt (Leenheer et al. 2007). This seems to imply that higher-income households are more open to new LP memberships but are also pickier about which LPs to adopt.

2.2.5 Self-Selection into LPs

Overall, LP members exhibit higher levels of behavioral and attitudinal loyalty than do nonmembers (Smith et al. 2003; Mauri 2003; Meyer-Waarden 2007; 2008; Meyer-Waarden & Benavent 2009). However, self-selection of loyal customers into the LP may partly drive observed differences between members and nonmembers (Leenheer et al. 2007; Meyer-Waarden & Benavent 2009). The self-selection effect results in a large, positive bias in the effects of LP membership on behavior after LP enrollment, if the behavior before enrollment is unknown or if the self-selection effect is not accounted for (Leenheer et al. 2007). Therefore, it is important to establish which behavioral and attitudinal effects can be attributed to LP participation in particular, relative to customer behavior before enrollment.

Finally, beyond the efforts of introducing and maintaining LPs, little research has addressed the effect of terminating an LP. In practice, some companies have considered discontinuing their LPs but fear potential negative consequences (Wansink 2003). Melnyk and Bijmolt (2008) surveyed consumer intentions with respect to customer retention and expenditures in response to a firm's termination of its LP. Their results suggest that only 10 percent of LP members would maintain the positive behavioral effects of joining the LP if the program were to be terminated.

2.2.6 Initial Generalizations

In summary, initial generalizations show that convenience is an important aspect of LP enrollment, as distance from a store and usage level play the most important roles in LP enrollment (in retail LPs). Also, LP enrollment is susceptible to customers' self-selection, because customers with higher levels of purchases and commitment are those most inclined to join the LP. Members perceive multiple benefits of LP participation, but economic benefits of participation are the most important. Despite the fact that the attractiveness of LP design is vital in customers' selection of an LP, its importance to members diminishes soon after enrollment. Sociodemographic characteristics do not play an important role in LP enrollment.

2.2.7 Future Research Directions

1. Relatively few studies have addressed LP enrollment; those that do mostly address grocery retailing. More research is needed in diverse industries to assess customer and firm behavior before and after LP enrollment. In grocery retailing, purchase behavior is characterized by high buying frequency, inertia, and proximity, which drive customer

enrollment in grocery retailer LPs. The conditions in other markets may drive different patterns of LP enrollment and diffusion.

2. Customer experience management is gaining momentum in retail research (Puccinelli et al. 2009; Verhoef et al. 2009). The potential of LP enrollment to enhance customer experience warrants further attention. Do LP enrollment and/or participation make a shopping environment appear more engaging to members? How effective is LP participation in increasing customer involvement in the buying process?
3. With a proliferation of LPs in all markets, some customers' reaction against LPs increases, and some members stop using other LPs they are enrolled in (Mauri 2003; Noble & Phillips 2004; Wendlandt & Schrader 2007). Empirical evidence on these effects is scarce. Therefore, research is warranted into why customers refuse to participate in LPs, decrease their participation rate over time, or stop using an LP. Many LPs remain inactivate after enrollment (Mauri 2003; Allaway et al. 2006). What are the drivers of these phenomena and potentials to increase members' engagement during and after LP enrollment? For example, privacy concerns are becoming an increasingly important issue for consumers (Graeff & Harmon 2002). Is privacy only a hurdle for enrollment in an LP, or does it affect subsequent usage or quitting?
4. Firms' decisions on enrollment criteria and selectivity in LP enrollment have an important impact on firm performance. Little research has investigated the effects of diverse enrollment strategies. Is it better to impose entry requirements to increase selectivity of members, or is it more viable to decrease the cost of membership to attract a broader customer base? Having more requirements may arouse a psychological reactance in some customers, especially if legal bonds are imposed through legal contracts. Alternatively, increasing membership requirements may increase the attractiveness of an LP and enhance feelings of status in LP members.
5. Customers have become increasingly polygamous in their LP memberships (Consumer Reports 2008). However, after members initially proliferate in LPs, they tend to consolidate usage to few selected LPs (e.g., U.S. customers use, on average, only six of fourteen programs they enroll in; Ferguson & Hlavinka 2009). Which programs win in this process? Is it merely proximity to the store and convenience that attract and keep customers active in an LP? Or do specific LP benefits result in a competitive advantage for the LP over other programs?
6. The pervasiveness of LPs in the market has led consumers to hold multiple memberships in competing LPs. More consumer panel studies are required on the impact of LP

competition and to explore relationships among competing LPs (see Liu & Yang 2009). For example, following the research into order-of-entry effects, researchers might study the link between the timing of a firm's LP introduction (first mover or follower) on LP success. Moreover, more insights are needed into competitive interactions among LP providers. Do LP competitors react to one another's actions?

7. Many new LPs are launched, but few programs have been terminated, and firms' struggle to predict the consequences of LP termination on future business performance (Wansink 2003; Melnyk & Bijmolt 2008). More insights are needed into the consequences of LP termination for firms' business performance and their impact on subsequent customer behavior.

2.3 LP Effects on Customer Behavior

2.3.1 Opposing Views on the Effectiveness of LPs

Once a customer has adopted an LP, the question is whether and how the LP induces customer responses (Figure 2.1). We first focus on behavioral responses. There is an extensive, ongoing debate in the literature on the effectiveness of LPs in enhancing behavioral responses. Several studies found that LPs do not substantially change customer behavior in stationary markets (Sharp & Sharp 1997; Wright & Sparks 1999; Bellizzi & Bristol 2004; Meyer-Waarden & Benavent 2006; Gomez et al. 2006; Lacey 2009). Other studies, however, showed positive effects of LPs on members' behavior as well as a firm's sales and profitability (Dreze & Hoch 1998; Lal & Bell 2003; Taylor & Neslin 2005; Leenheer et al. 2007; Liu 2007; Liu & Yang 2009). There are two things that may reconcile these opposing findings: (1) actual differences in responsiveness across various customer segments, markets, and LP designs and (2) methodological differences across studies. Keeping in mind those contextual and methodological differences, we next discuss the effects of LPs on important behavioral metrics (customer retention, purchase volume and frequency, and share-of-wallet).

2.3.2 Effects on Retention Rates

An LP program may increase customer retention, and thereby relationship duration, by creating switching barriers, which can be economic or psychological (Klemperer 1987; Carlsson & Lofgren 2006; Wendlandt & Schrader 2007; Murray & Haubl 2007). Economic barriers are based on utilitarian and monetary benefits (Mimouni-Chaabane & Volle 2010),

which accrue with customers' purchases. By switching to another provider, customers forgo the opportunity to collect for a reward. For example, the size of economic switching costs for frequent-flier LP members ranges from 8 to 12 percent of the ticket price (Nako 1992; Proussaloglou & Koppelman 1999; Carlsson & Lofgren 2006). In contrast, the psychological incentives to stay in the relationship develop through perceived recognition, reciprocity in the relationship, and belongingness to an exclusive LP social group (Bolton et al. 2000; Palmatier et al. 2009; Mimouni-Chaabane & Volle 2010). LP members become cognitively locked in a relationship, because the cognitive effort to search and become accustomed to an alternative product increases as members gain experience with the focal product (see Murray & Haubl 2007). The subtle psychological barriers are hard to quantify, but their effects may be highly significant, particularly in the long run. Empirical findings indicate positive effects of LP participation on members' retention, both in industries with high exit barriers, like contractual financial services (Verhoef 2003), and in the noncontractual setting, like grocery retailing (Meyer-Waarden 2007). In addition, Bolton, Kannan, and Bramlett (2000) found an indirect effect of LP participation on customer retention through members' discounting of negative experiences in repurchase decisions.

An LP provider must be cautious about imposing switching barriers on members, because high perceived barriers deteriorate the customer-firm relationship through increased customer psychological reactance and reduced intrinsic motivation to participate in an LP (Kivetz 2005; Dholakia 2006; Hennig-Thurau & Paul 2007; Wendlandt & Schrader 2007). Furthermore, recent empirical evidence suggests that the impact of LP-induced switching barriers may be overestimated. Hartmann and Viard (2008) found that frequent purchasers experience negligible switching costs because they purchase frequently enough to avoid any bidding deadlines and are likely to earn the reward quickly. At the same time, very infrequent customers rarely ever reach reward thresholds and therefore do not experience switching cost pressures either. Hence, for both customer groups, switching costs play little to no role. This suggests that switching costs in LPs are most relevant to medium-level users. Moreover, Wirtz and colleagues (2007) found that the highest perceived switching costs are reported by members who find LP rewards highly attractive but have low attitudinal levels of loyalty (e.g., cherry-pickers) report the greatest perceived switching costs. In contrast, switching costs do not matter for highly loyal customers. In essence, although LP participation has the potential to induce switching costs, customer retention and thereby relationship duration depend on members' intrinsic motivation to stay in the LP and the LP's perceived value

(Kivetz & Simonson 2003; Dholakia 2006; Hennig-Thurau & Paul 2007; Wirtz, Mattila & Lwin 2007).

2.3.3 Effects on Customer Expenditures

Many studies have addressed the effect of LPs on expenditures of customers, measuring expenditure behavior by variables such as purchase volume, purchase frequency, and share-of-wallet. Share-of-wallet (SOW; also known as share-of-category-requirements or share-of-purchases) reflects a customer's share of purchases of a product category or a service at a vendor relative to the customer's total purchases of that category or service from all vendors (Verhoef 2003; Magi 2003; Leenheer et al. 2007).

Overall, empirical evidence shows that LP members have significantly higher spending levels, purchase frequency, and SOW than nonmembers (Magi 2003; Verhoef 2003; Smith et al. 2003; Gomez et al. 2006; Liu 2007; Leenheer et al. 2007; Meyer-Waarden 2008; Cortinas et al. 2008). To account for self-selection effects, several studies assessed behavioral changes in purchase volume and frequency after enrollment relative to previous behavior. Such studies found that short-term LPs of the kind "spend X over a time-limited period and earn a reward (e.g., ham or turkey)" substantially increase spending and sales (Lal & Bell 2003; Lewis 2004; Taylor & Neslin 2005). This increase mainly comes from increased purchase volumes and the attraction of new customers, which may result in an increase in profit of up to 190 percent (Dreze & Hoch 1998). Even more, a launch of a category-related LP can bring positive effects on overall store traffic and induce positive spillover effect on other store categories (Dreze & Hoch 1998).

Besides the impact on purchase volume, LPs can have a significant impact on purchase frequencies. On average, participation in airline LPs increases members' purchase frequencies by more than 4 percent (Liu & Yang 2009). Significant positive effects on purchase frequency and volume were also found for online and offline retailers (Lewis 2004; Seiders et al. 2005). Overall, the greatest increase in purchase frequency and volume occurs within a few months of the introduction of an LP (Liu 2007; Meyer-Waarden & Benavent 2009).

The effects of LPs on purchase volume and frequency differ across customer segments. LPs exhibit the strongest impact on purchase volume and frequency of light and moderate rather than heavy buyers, both in short-term LPs (Lal & Bell 2003; Taylor & Neslin 2005) and in continuous or long-term LPs (Liu 2007; Kim et al. 2009). We warn, however, that in interpreting these results, one has to consider the ceiling effect of how much customers

are willing to purchase of one product and/or service. Because of the ceiling effect, heavy buyers have less room to grow in purchase volume and frequency (Bolton et al. 2000; Lal & Bell 2003). The differences in an LP's impact on diverse customer segments have important consequences for a firm's profitability. Because loyal, heavy-buying customers are more likely to redeem rewards (Lal & Bell 2003; Liu 2007) and respond to price promotions in some categories (Cortinas et al. 2008), the profitability of an LP strongly depends on the sales impact on members with initially light and moderate purchase frequencies and volumes (Kim et al. 2001; Lal & Bell 2003; Liu 2007). However, it would be wrong to conclude that heavy buyers are a less valuable segment for relationship development. In the analyzed LPs, heavy buyers maintain their high usage levels over time (Liu 2007; Kim et al. 2009). These findings emphasize the importance of nurturing relationships with diverse segments of LP members over their lifetime with a firm. Still, Wansink (2003) found that brand managers tend to overestimate the importance of heavy user segments and underestimate the potential of other segments. Adequate strategies of personalized marketing should be developed for each segment (see section 6).

Finally, effects of LP participation on SOW were assessed with metrics of actual behavioral responses and self-reported measures. Available findings from individual-level studies indicate that LP participation has a significant, positive effect on the focal business's SOW (i.e., a retail chain's LP on SOW to the chain) (Magi 2003; Verhoef 2003; Meyer-Waarden 2007; Leenheer et al. 2007). The average increase in SOW due to LP membership is approximately 4 percent (Verhoef 2003; Leenheer et al. 2007). Attitudinal loyalty and perceived attractiveness of an LP amplify the effect (Wirtz et al. 2007). However, the strongest increase in SOW is likely to occur at and just after LP enrollment, and initial evidence suggests that SOW is likely to return to previous baselines after enrollment (Meyer-Waarden 2007; Meyer-Waarden & Benavent 2009). Only about 20 percent of LP members indicate perceived significant increases in their purchase behavior at focal retailers (Gomez et al. 2006).

Aggregate studies (Dirichlet model studies) have found mixed results, with significant deviations (from a theoretical benchmark) in "excessive" loyalty for some grocery and fuel retailer LPs but not for others (Sharp & Sharp 1997; Meyer-Waarden & Benavent 2006). The mixed findings of those studies stirred the debate on the effectiveness of LPs in general (see Dowling & Uncles 1997; Sharp & Sharp 1997; Shugan 2005). We believe that sufficient empirical evidence exists to suggest a positive impact of LPs on SOW. Nevertheless, this impact may differ with contextual factors like market saturation, competitive intensity and

national culture. The impact of an LP decreases when market saturation increases, unless the LP expands the focal category (Wright & Sparks 1999; Kopalle & Neslin 2003; Liu & Yang 2009). In examining the difference of the impact of LPs across diverse cultures and maturity of markets, Noordhoff, Pauwels, and Odekerken-Schroder (2004) found that LP participation has a significantly greater impact on behavioral and attitudinal loyalty in a less saturated and less mature market. Finally, the impact of an LP on SOW decreases with the number of LPs in which customers participate (Magi 2003; Bellizzi & Bristol 2004; Leenheer et al. 2007). For example, the predicted change in SOW due to becoming a member decreases by about 50 percent when a member participates in four or more LPs (Bellizzi & Bristol 2004; Leenheer et al. 2007).

2.3.4 Initial Generalizations

Research indicates an overall positive impact of LPs on customer retention and expenditures, though contextual factors like market saturation, competitive intensity, and national culture exhibit moderating effects on those relationships. Although LPs have the potential to create switching costs, their importance is greatest to moderate-level buyers. Members' intrinsic motivation to stay in the LP and perceived value of the LP largely drive customer behavior in LPs. Moreover, LPs seem particularly effective for enhancing behavioral loyalty of light and moderate buyers. Though scarce, existing findings suggest that an increase in loyalty metrics of LP members translates to positive effects on firm performance metrics, such as sales and profitability.

2.3.5 Future Research Directions

Although a substantial body of research exists on the effects of LPs on customer behavior, the following research areas warrant further attention.

1. Despite the number of studies that assessed effects of LPs on customer behavior, more research is still needed. In particular, given the substantial variation in observed findings, future research should address the moderating role of various contextual factors on LP effectiveness. For example, most available studies analyze LPs of offline retailers. More insight is needed into LPs' effectiveness in other consumer markets, business-to-business markets, and online settings, because market conditions and the nature of a relationship between a firm and a customer likely moderate LP effects. Future studies should pay attention to the metrics and constructs used, as the existing diversity of metrics hinders the possibility of meta-analytical generalizations.

2. Major differences in LP effectiveness and profitability have been found across customer segments (e.g., light, moderate, and heavy buyers). It is important to establish what causes these differences and to provide directions for targeting these segments. An insufficient number of studies have addressed the issue of how to sustain customer loyalty in LPs. Which LP strategies help maintain high levels of usage of heavy buyers and prevent deterioration? Which growth strategies are the most effective for light and medium LP users? How can firms make those strategies for diverse segments complementary?
3. In many markets, short-term LPs have become popular. Contrary to permanent LPs, these programs have a predetermined end date and typically last about three months. Studies that assess the effectiveness of short-term relative to permanent LPs are lacking. Are short-term LPs effective only during the action period, or do they have a persistent effect? In the long run, is it better for a firm to introduce several short-term LPs or to maintain a permanent LP?
4. Given the increased importance of accountability and financial consequences of marketing investments, an important direction for future research is to relate LP effects on customer behavior to firm valuation metrics, such as Tobin's Q (e.g., Lehmann 2004, Srinivasan & Hanssens 2009). Moreover, additional research is warranted on the contribution of LP members versus nonmembers to firm profitability. It is becoming increasingly obvious that both groups of customers are essential to effective management of the firm (van Heerde & Bijmolt 2005).

2.4 LP Effects on Customer Attitudes

2.4.1 Attitudinal versus Behavioral Components of Customer Loyalty

To induce lasting effects on customer loyalty, any relationship-marketing-building instrument, besides behavioral loyalty, needs to enhance customers' affective commitment or attitudinal loyalty (Dick & Basu 1994; Verhoef 2003; Kim et al. 2009). Without attitudinal loyalty, an LP may encourage spurious retention of customers given the lack of other alternatives, inertia, or convenience. For customers with low attitudinal loyalty, an attractive LP reward increases switching costs of the forgone opportunity, which temporarily increases SOW (Wansink 2003; Wirtz, Mattila & Lwin 2007). However, once the spuriously loyal customer obtains the reward, the principal reason for the purchase disappears, and the customer may switch in search of a better deal (Rothschild & Gaidis 1981; Dick & Basu

1994). Spuriously loyal customers therefore prefer small, immediate rewards over the relationship (Kivetz 2003). In this respect, some have questioned LPs' potential to increase attitudinal loyalty and thereby induce "true" loyalty as a combination of behavioral and attitudinal loyalty (Dowling & Uncles 1997; O'Malley 1998; Shugan 2005; Nunes & Dreze 2006a; Lacey 2009).

Contrary to these arguments, some studies in consumer psychology indicate that LP participation may enhance emotional benefits, which in turn induce attitudinal loyalty. Through the sense of gratitude, belongingness, elevated status, prestige, recognition, or gain of an exclusive treatment, LP membership may strengthen a member's attachment (Gruen 1994; Palmatier et al. 2009; Dreze & Nunes 2009; Mimouni-Chaabane & Volle 2010;). Empirical studies have demonstrated that LP members, compared to nonmembers, tend to have higher levels of positive attitudes such as satisfaction, trust, and commitment, as well as more stable brand and store perceptions (Magi 2003; Smith et al. 2003; Gomez et al. 2006). Satisfaction and attitudinal loyalty of LP members is enhanced by the perceived attractiveness of an LP and its rewards (Keh & Lee 2006; Wirtz, Mattila & Lwin 2007; Demoulin & Zidda 2008) and by the quality of interactions with employees (Vesel & Zabkar 2009). In addition, Bolton, Kannan, and Bramlett (2000) found that LP members tend to discount negative evaluations of a firm relative to its competitors, because LP members weight negative experiences less than nonmembers. However, these effects may pertain only to minor failures. As a result of a more frequent interaction with the provider and greater attachment, LP members are more inclined to give feedback and may become more critical in their evaluations and more sensitive to service failures (Smith et al. 2003; Lacey 2009; Von Wangenheim & Bayon 2007).

Some studies found that participation in an LP increases attitudinal loyalty and store satisfaction (Yi & Jeon 2003; Bridson et al. 2008). Nevertheless, the causal direction of the constructs cannot be unequivocally confirmed because of possible endogeneity and self-selection bias: attitudinally loyal customers are intrinsically more motivated to enroll in an LP (Dholakia 2006; Demoulin & Zidda 2009). Although the general literature on customer management has established a positive relationship between customer satisfaction and repurchase behavior (Szymanski & Henard 2001; Bolton et al. 2004; Verhoef, van Doorn, & Dorotic 2007), it is not clear whether LP participation enhances this relationship. Seiders and colleagues (2005) found that LP participation does not enhance the effect of customer satisfaction on repurchase behavior. Conversely, Evanschitzky and Wunderlich (2006) found that LP participation enhances the link between conative loyalty (attitudinal repurchase

intention) and actual buying behavior. We further note that the effect is likely to differ across customer segments. The reinforcing effect of attitudinal on behavioral loyalty is more likely to occur for LP members with initially high levels of commitment, because they have intrinsic motivation to develop a relationship with the firm (Keh & Lee 2006; Dholakia 2006; Hennig-Thurau & Paul 2007; Demoulin & Zidda 2008; Lacey 2009).

2.4.2 Initial Generalizations

Researchers have mainly considered the effects of LPs on either attitudes or behavior; studies of their simultaneous effects on both are scarce. Yet sustainability of the positive effects of LPs depends on both aspects of members' loyalty. Although initial positive effects of LPs on customer attitudes have been demonstrated, the complex process and interaction with customer behavior is not well understood yet. The intrinsic motivation to be in a relationship with a firm seems to be the major driver of members' loyalty; however, existing studies on the effects of LP participation on attitudinal responses rarely account for self-selection bias.

2.4.3 Future Research Directions

We point out the following specific opportunities for future research:

1. An interaction between attitudinal and behavioral aspects of customer loyalty is not well understood. Which dimension is more critical for the longevity and profitability of LP membership: customer attitudinal or behavioral responses? Do attitudes mediate the effect of LPs on behavior, or do LPs directly affect behavior, which subsequently improves attitudes? Ideally, such studies should employ longitudinal data of LP membership, customer attitudes, and behavior, and should account for the endogenous nature of LP membership.
2. Studies with repeated measurements over time are warranted, to explore the causal directions between LP participation and the interrelated constructs of customer behavior and attitudes. Do LP members increase their attitudinal loyalty over time because of participation in an LP? How does this translate to behavioral outcomes? A lack of empirical evidence exists on whether LP members with low levels of attitudinal loyalty increase their attitudinal loyalty over time as much as they increase behavioral loyalty (Liu 2007).
3. Competition among LPs increases members' sensitivity toward rewards and deals offered, which increases the bargain-hunting mentality. So far research has not yet investigated inherent attitudes and loyalty toward an LP. How strong is the effect of

loyalty to incentives and/or rewards among LP members? In a low-involvement setting, loyalty to the LP may fully mediate the effect of an LP on customer attitudes (Yi & Jeon 2003). How detrimental is this effect to LP providers? Do customers become loyal to the LP or to the retailer running the LP?

2.5 The Points-Pressure and Rewarded-Behavior Mechanisms

2.5.1 The Points-Pressure Mechanism

Effects of the LP on customer behavior and attitudes may work through several processes (Figure 2.1). If LP rewards are based on thresholds of accumulated purchases, then the points-pressure mechanism encourages customers to increase purchase frequencies and/or volume to obtain the reward (Nunes & Dreze 2006b; Kivetz et al. 2006). Points-pressure effects can be enhanced by manipulating customers' perceived proximity to obtaining the reward, for example by endowing customers with initial points (Kivetz et al. 2006) or by dividing the reward into subgoals (Dreze & Nunes 2007). However, setting subgoal thresholds too low can demotivate customers and decrease the attractiveness of the rewards (Dreze & Nunes 2007). In contrast, setting high thresholds has negative effects on infrequent users, who may experience the reverse-points-pressure effect, in which they feel discouraged from further purchasing because of their inability to meet thresholds (Lewis 2004; Blattberg, Kim & Neslin 2008).

2.5.2 The Rewarded-Behavior Mechanism

The rewarded-behavior mechanism occurs after a customer has obtained the reward and encourages rewarded customers to maintain or further increase purchase levels. The rewarded-behavior mechanism subsequently dampens the fall in purchase patterns that would occur after the reward is obtained (Blattberg, Kim & Neslin 2008). In a short-term LP, Lal and Bell (2003) found a positive difference in spending levels between LP members who had redeemed rewards and those who had not. The rewarded behavior enhances behavioral responses through the behavioral learning that repurchase leads to a reward (Rothschild & Gaidis 1981; Taylor & Neslin 2005). In addition, rewarding may increase affect, which in turn reinforces the attitudinal attachment of a member to a firm, which may subsequently increase retention and purchase rates (Engel, Blackwell, & Miniard 1995; Taylor & Neslin 2005; Palmatier et al. 2009). The strength of the effect depends on the member's previous levels of loyalty, intrinsic motivation to be in a relationship, and type of reward (Roehm et al.

2002; Lal & Bell 2003; Taylor & Neslin 2005; Dholakia 2006; Keh & Lee 2006; Liu 2007; Wirtz, Mattila & Lwin 2007).

2.5.3 Empirical Findings

The existence of the both mechanisms is found among frequent business travelers in the airline industry (Kopalle et al. 2006). The effect of the increased purchase probability carries over to the period after the customer redeems a reward, though the rewarded-behavior effect in this study is fairly short term. For an offline retailer, Taylor and Neslin (2005) found that points pressure increased the weekly sales per household by an average of 6 percent, whereas rewarded behavior increased sales by 1.8 percent. The difference in effect sizes between points pressure and rewarded behavior can be attributed to the fact that obtaining a reward reinforces more subtle, attitudinal effects that cannot be measured through the changes in purchase levels in the short run but may exhibit an important effect on the relationship between the customer and the firm. Importantly, the rewarded-behavior effect seems to be stronger for light users (Lal & Bell 2003; Taylor & Neslin 2005).

For rewarded-behavior effects to occur, an LP member needs to obtain or redeem a reward. Similarly, for points pressure to occur, the LP member has to value the reward. Many studies have found that a large percentage of LP rewards are not redeemed. Lal and Bell (2003) found that between 26 percent and 51 percent of LP members did not redeem a reward they were entitled to. Dreze and Hoch (1998) found a redemption rate of 29 percent; Taylor and Neslin (2005), 20 percent; and Kopalle et al. (2006), 75 percent. Few empirical findings explain this phenomenon, its drivers, and its consequences (see also Smith & Sparks 2009).

2.5.4 Initial Generalizations

Overall, existing research on the points-pressure and rewarded-behavior mechanisms has indicated their positive effects. In particular, stronger empirical support exists for points-pressure effects, which experimental studies on consumer decision making and empirical studies of actual LPs have confirmed. The evidence is less clear regarding the effect sizes and persistence of the rewarded-behavior effect. Available studies substantially differ regarding the persistence of the effect, from up to eight weeks (Taylor & Neslin 2005) to a very short-term impact (Kopalle et al. 2006).

2.5.5 Future Research Directions

1. Although multiple studies have investigated the points-pressure and rewarded-behavior effects, longitudinal studies should evaluate the lift potential and long-term effects of the mechanisms. In particular, more evidence is needed on the persistence of the effects in short-term versus permanent LPs. Such future studies could account for the forward-looking behavior of LP members.
2. As noted, there is empirical evidence supporting the existence of the points-pressure and rewarded-behavior mechanisms. However, we still do not fully understand why these effects occur. More insights are needed into processes that drive the loyalty-reinforcing effect (Blattberg, Kim & Neslin 2008: 551). What are the drivers of LP effects in programs without explicit LP thresholds? What drives the behavior of members in LPs in which accumulated points do not expire and members decide themselves when to redeem and how much to redeem. Does rewarded behavior occur because of behavioral learning that reinforces habitual buying and inertia, or does it occur because of enhanced cognitive and affective changes in customer attitudinal loyalty that reinforce positive affect?
3. Related to the previous point, the interaction between switching costs and LP mechanisms is not well understood, particularly with respect to how rewarded behavior affects switching costs. Also, how do perceived switching costs affect the rewarded-behavior effect? Do effects differ for economic and psychological switching barriers?
4. Although positive effects of the points-pressure mechanism are empirically substantiated, not much is known about responses of customers who could not reach reward thresholds. What is the impact of the reverse-points-pressure effect on LP members' behavior and its consequence on profitability? Does failure to reach a reward threshold demotivate LP members in their subsequent behavior?
5. Despite the importance of redemptions, not much is known about why LP members redeem or not. More research is needed to explain why those who qualify for a reward do not redeem it. And how can LP operators increase redeeming rates?

2.6 Personalized Marketing and Sales Promotions

2.6.1 Benefits of Personalized Marketing

Loyalty programs yield a wealth of data about individual customer behavior (e.g., purchases, responses to marketing mix), which provides an important source of information for fine-tuning various marketing efforts (Kumar & Shah 2004; Kumar & Reinartz 2006; Berman

2006; Leenheer & Bijmolt 2008). First, LP data can successfully segment a market and increase the value of an offer to target segments, as the practice of the U.K. retailer Tesco demonstrates (Rowley 2005; Kumar & Reinartz 2006; Turner & Wilson 2006). Second, personalized communication through direct mailing and relationship magazines increases members' behavioral loyalty (Verhoef 2003; van Heerde & Bijmolt 2005; Rust & Verhoef 2005; Meyer-Waarden 2007). Personalized treatment of an LP member also increases relational bonds of the member with a firm, which further reinforces the member's behavioral loyalty (Lacey et al. 2007; Palmatier et al. 2006). Third, personalized marketing offers may increase members' purchases in new consumption areas, which results in cross- and up-selling (Knott et al. 2002; Berman 2006). LP members, particularly those with higher levels of loyalty, are prone to broaden the relationship with a firm through cross-buying of a firm's products (Meyer-Waarden 2007; Lemon & von Wangenheim 2009).

2.6.2 Costs of Personalized Marketing

The benefits of personalized marketing have to be leveraged against its costs. Personalized marketing may evoke negative reactions if members perceive it as used to discriminate among customers. Particularly, the negative reaction is pronounced if targeted price promotions offer nonmembers or light users lower prices than LP members (Feinberg et al. 2002; Lacey & Sneath 2006). Moreover, the effectiveness and profitability of customized promotions varies across market contexts (e.g., online versus offline) and in the sensitivity of program members to personalized marketing efforts (Zhang & Wedel 2009). Customized price promotions are more viable in online than offline settings, and low redemption rates (i.e., low promotion sensitivity) are a major impediment to the success of customized promotions in offline stores (Zhang & Wedel 2009).

2.6.3 Personalized Marketing and Sales Promotions

Little is known about the relative effectiveness and profitability of LPs relative to other marketing instruments, especially relative to the traditional forms of sales promotions (e.g., price discounts, in-store promotions). Zhang, Krishna, and Dhar (2000) found that the impact of sales promotions that offer immediate rewards is greater than the impact of delayed incentives that LPs offer. Still, it is not clear whether firms should prefer traditional forms of sales promotions over LPs. Analytical findings are mixed, and empirical studies are scarce. The available studies indicate that multiple LPs can effectively coexist between two competing firms that both offer LPs, as well as in the situation when one firm competes

through LP and another by lowering prices (Kim et al. 2001; Kopalle & Neslin 2003; Singh et al. 2008).

Rather than choosing between LPs and alternative marketing instrument, it is important to look at synergies between them (Mauri 2003; Lewis 2005). LPs with the highest market share benefit the most from having LPs (Meyer-Waarden & Benavent 2006; Leenheer et al. 2007; Liu & Yang 2009). This suggests that such firms have previously established marketing efforts that an LP complemented. In general, LPs are not likely to increase customer loyalty independent of other marketing efforts. Liu and Yang (2009) indicated that LPs create incremental sales in an interaction with other marketing-mix elements. There is scarce and mixed evidence on the interaction effects of LPs and other elements of marketing mix. On the one hand, the synergy effect between sales promotions and LPs can be used to develop strategies for various customer segments. Although LP strategies are used for involved customers, short-term sales promotions appeal to nonmembers or customers who place less value on the LP (Taylor & Neslin 2005; van Heerde & Bijmolt 2005). On the other hand, sales promotions directed at LP members may further enhance the effects of the LP. Initial evidence speaks in favor of positive interactions between LPs and short-term sales promotions (Sharp & Sharp 1997; Dreze & Hoch 1998; Mauri 2003; Lewis 2004; Kim et al. 2009). Lewis (2004) found that receiving an LP-induced e-mail coupon increases members' purchase incidence rate, spending volume, and average revenues. Similarly, short-term promotions are found to increase purchases of LP members (e.g. Kim et al. 2009). Therefore, the points-pressure effect in an LP may positively interact with the sales promotion effect (Kivetz et al. 2006). Indeed, analytical evidence obtained by Villanueva and colleagues (2007: 120) shows that the most viable long-term strategy for maximizing customer lifetime value in a competitive context is to focus on maximizing short-term profits: "the correct long-term approach to customer relationships in competitive environments may involve period-by-period profit maximization." We believe that interaction between short-term sales-promotions and long-term LPs has the greatest potential to achieve this maximization.

Nonetheless, short-term promotions may have a detrimental effect on long-term LP effectiveness if they encourage deal-prone behavior. LP members, particularly heavy users, are most prone to use a promotion and to redeem a reward (Lal & Bell 2003; Bellizzi & Bristol 2004), though it is likely they would buy the product anyhow. This can have a significant detrimental impact on firm profitability and may increase members' loyalty to program incentives rather than to the firm (Rothschild & Gaidis 1981; Dowling & Uncles 1997).

2.6.4 Initial Generalizations

Because of the lack of empirical evidence, it is hard to make generalizations on the topics discussed in this section. Yet several authors suggest that the main potential of an LP is not its ability to affect customer behavior directly but its provision of individual-level data that enable firms to improve marketing effectiveness and efficiency (Ziliani & Bellini 2004; Kumar & Reinartz 2006; Cortinas et al. 2008). Specifically, this potential can be used in personalized communication and interaction between LPs and other elements of the marketing mix. In particular, initial evidence suggests that sales promotions in LPs may significantly enhance members' behavior.

2.6.5 Future Research Directions

Empirical findings in this domain are particularly scarce, and we outline here only some of the possible research contributions:

1. Initial evidence suggest that members who are close to obtaining a reward are more receptive to promotional offers that help them reach the threshold (Kivetz et al. 2006). The interaction effects among the three LP mechanisms—points pressure, rewarded behavior, and personalized marketing—warrant further investigation. How do personalized marketing offers contribute to points pressure? Personalized marketing may contribute to and enhance rewarded-behavior effects. How does personalized treatment affect rewarded behavior?
2. Using the data from an LP offers high cross-selling and up-selling opportunities for LP providers. There is a need to quantify such potentials, their impact on long-term customer behavior and attitudes, and ultimately their impact on the firm's performance.
3. The integrated communications literature suggests that marketing instruments reinforce one another. More insight is required into interactions between LPs and other elements of the marketing mix. What is the impact of an LP on firm success relative to and/or in combination with the impact of retailers' pricing policies, quality perceptions, location, and so on?
4. The relationship between LPs and traditional forms of sales promotions is not well understood. Is it more effective and profitable for a firm to pursue the traditional sales promotion strategy or to introduce an LP? Do sales promotions have a synergic or detrimental long-term effect on LPs? How do in-store promotions affect LP effectiveness?

2.7 Effects of LP Design

2.7.1 LP Design

The design of an LP plays an important role in the enrollment and the effectiveness of the LP, as it affects customer perceptions of the value of the program and drives customer behavior. Even seemingly irrelevant information in the program design (e.g., different allocations of the same amount of points) affects purchase choices and thereby LP performance (van Osselaer et al. 2004; Dreze & Nunes 2007). The LP design comprises various aspects, which we group into program structure, rewards, and number of program partners. There are numerous other practical aspects of LP design that need to be considered when designing an LP. Because the focus of this overview is to synthesize the available literature findings, we direct interested readers to other sources for more details on other tactical aspects of LP design (e.g. Berman 2006; Blattberg, Kim & Neslin 2008).

2.7.2 LP Structure

Two prevalent LP structures exist: frequency-reward LPs and customer-tier LPs (Blattberg, Kim & Neslin 2008). Frequency-reward LPs have the structure "buy X times/amount, get a reward" and reward discounts or gifts to all LP members who reach required thresholds. The customer-tier LP structure places customers into different segments according to their value to a firm, based on either actual or potential profitability (Kumar & Shah 2004; Blattberg, Kim & Neslin 2008). The firm provides differentiated services or products to each tier, usually through preferential treatment of higher tiers and segment-tailored offers (Lacey et al. 2007; Dreze & Nunes 2009). By providing tailored offers and greater value to distinct segments, a firm is better able to serve diverse customer needs and to build members' "true" loyalty (Zeithaml et al. 2001; Kopalle et al. 2006; Lacey et al. 2007). Still, scarce empirical evidence exists to directly compare the effectiveness of different program structures. Only Kopalle and colleagues (2006) compared the two structures and found that the vast majority (approximately 94 percent) of an airline's business customers prefer the customer-tier component of an LP to the frequency-reward component.

Three prerequisites seem necessary for the effectiveness of customer-tier programs. The first challenge is to identify a set of important differences based on which customer tiers may be created. This set must include not only the right behavioral and attitudinal indicators but also indicators of the customer's future potential (Zeithaml et al. 2001; Kumar & Shah 2004). The second challenge is to discriminate between LP members without alienating or demotivating them, as customers are very sensitive to what they obtain relative to other

customers (Feinberg et al. 2002; Kivetz & Simonson 2003; Stauss et al. 2005). In contrast, the status perceptions in a tier may be diluted if that tier's membership is expanded (due to loss of exclusivity) or when more tiers are included in the LP structure (Dreze & Nunes 2009). The third challenge for a customer-tier LP is to induce customers to increase loyalty over time (Kumar & Shah 2004; Nunes & Dreze 2006; Blattberg, Kim & Neslin 2008). Customer-tier LPs may create the points-pressure effect for members who are close to qualifying for the higher tier or close to being downgraded to a lower tier (Dreze & Nunes 2009). Subsequently, the rewarded-behavior effect of reaching a higher tier may reinforce loyalty. However, offering personalized treatment and attempting to delight the best customers can be very costly, and the resulting gain is uncertain. If heavy buyers, because of the ceiling effect, are not likely to further increase their expenditures regardless of the firm's costly efforts, and the firm undertreats its light users in lower tiers, the LP potentials will be underused. Kim and colleagues (2009) found that awarding customers with LP membership (through a firm's selection of the best customers, to whom it grants LP membership) may induce positive effects on members with low levels of behavioral loyalty only if their attitudinal attachment is high.

2.7.3 LP Rewards

Loyalty programs offer rewards on the basis of members' purchase history, usually through an accumulation of some reward currency based on purchase frequency and volume (Berman 2006; Kopalle et al. 2006). Overall, LPs should tailor rewards to members' expectations, as the perceived satisfaction with LP rewards enhances members' loyalty (Wirtz, Mattila & Lwin 2007; Demoulin & Zidda 2008). The effectiveness of different types of rewards and/or their timing is assessed most often in existing research.

2.7.3.1 Reward Types

Rewards in LPs differ with respect to whether they are related to the focal firm's offering and whether they offer intrinsically economic or nonmonetary incentives.

Rewards may be direct (when related to the focal firm; e.g., "Buy ten coffees, get one free") or indirect (when unrelated to the focal firm's offering; e.g., "Rent a car ten times, get a coupon for massage"). Existing research findings indicate that direct rewards should be preferred over indirect rewards if they can enhance brand associations of the LP provider. In such case, a direct reward reinforces the attitudinal attachment and an intrinsic motivation to be in the relationship (Roehm et al. 2002). These effects increase customer loyalty,

particularly in high-involvement settings or if members had to invest effort to obtain the reward (Yi & Jeon 2003; Kivetz 2003, 2005). The attractiveness of indirect rewards may increase with luxury rewards (e.g., a massage) and as the effort to obtain those rewards increases (Kivetz & Simonson 2002).

Rewards can be intrinsically economic or nonmonetary (Yi & Jeon 2003; Keh & Lee 2006; Bridson et al. 2008). Economic or hard rewards usually offer saving benefits through discounts, coupons, rebates, or cash rewards. Nonmonetary or soft rewards provide primarily psychological and emotional benefits through preferential treatment, additional services and upgrades for members, special events, entertainment, or elevated status. Interesting examples of nonmonetary LP rewards include meeting one's favorite actor or obtaining private jet-flying lessons (Capizzi & Ferguson 2005; InCircle 2009).

Among economic rewards, empirical evidence emphasizes the effectiveness of direct over indirect economic rewards (Yi & Jeon 2003; Kivetz 2005; Keh & Lee 2006). In particular, cash rewards are inefficient for a firm because they incur higher unit costs than direct rewards (Kim et al. 2001; Palmatier et al. 2006). Cash rewards are viable only when the heavy-user segment is small and more price sensitive than the light-user segment (Kim et al. 2001). Otherwise, economic rewards may have a detrimental effect on customer loyalty. If perceived as controlling, economic incentives decrease customers' intrinsic motivation to be in the relationship, which translates to lower future loyalty intentions, higher reaction against an LP, and higher switching rates (Dholakia 2006; Henning-Thurau & Paul 2007; Wendlandt & Schrader 2007). Moreover, economic incentives (particularly indirect ones) may draw customers' attention away from the brand and to the reward, thus inducing spurious loyalty and cherry-picking for incentives (Roehm et al. 2002; Yi & Jeon 2003; Bellizzi & Bridson 2004; Henning-Thurau & Paul 2007).

Studies on soft or nonmonetary rewards have mainly focused on psychological and emotional benefits of rewarding. A reward obtained through an LP can evoke a sense of getting a good deal (Thaler 1985), a feeling of the firm's appreciation that evokes reciprocal feelings (gratitude) in customers (Gwinner et al. 1998; Kumar & Shah 2004; Palmatier et al. 2009), a sense of belongingness (Dowling & Uncles 1997), and an elevated sense of status (Dreze & Nunes 2009). Preferential treatment is the most often studied soft reward. It has a positive influence on customers' commitment, satisfaction, word of mouth, perceived status, repurchase intentions, and willingness to cooperate (Smith et al. 2003; Lacey et al. 2007; Bridson et al. 2008; Dreze & Nunes 2009). Specifically, preferential treatment in LPs strengthens relationship commitment, which enhances SOW and increases purchases in

consumer markets (Lacey et al. 2007). Similarly, LP investments that aim to build relational bonds with business customers through personalized treatment have the greatest potential to increase profits (Palmatier et al. 2006). In customer tier LPs, preferential treatment rewards interact with rewards of elevated status. A stratification of LP members into hierarchical tiers elevates customers' perceptions of status and relative superiority, which increases overall positive feelings about the relationship (Dreze & Nunes 2009). However, once accustomed to benefits of a certain status, LP members may become more critical in their evaluations (Stauss et al. 2005). Higher-status customer tiers, for example, can be particularly sensitive to service failures and loss of status membership (von Wangenheim & Bayon 2007; Wagner et al. 2009). The negative effects of downgrading are much stronger than the positive effects of rewarding by upgrading to higher tiers.

It is difficult to directly compare the effectiveness of various types of LP rewards given differences in reward types, diverse methodologies, and metrics used. However, economic and soft rewards should be considered complementary rather than mutually exclusive (Kumar & Shah 2004; Kopalle et al. 2006). For example, Bridson, Evans, and Hickman (2008) found that hard rewards are important predictors of store satisfaction, whereas soft rewards are important drivers of store loyalty.

2.7.3.2 Reward Timing

The timing of LP rewards relates to the preference for an immediate or delayed reward. When customers are not intrinsically motivated to build a relationship with a firm, they prefer immediate over delayed rewards, even if immediate rewards are of a lesser value (Yi & Jeon 2003; Kivetz 2003; Keh & Lee 2006). Delayed rewards may be viable in markets prone to variety-seeking behavior (Zhang et al. 2000), for high-preference brands (Dhar, Morrison, & Raju 1996), and among satisfied LP members (Keh & Lee 2006).

Blattberg, Kim and Neslin (2008: 567) point out two important but underresearched aspects of LP reward timing: continuity and linearity. Continuity refers to whether the member obtains a reward after each purchase or only after reaching a threshold. Continuous rewarding may, for example, offer one loyalty point for each euro spent in an LP. Although continuous rewarding can reinforce rewarded behavior, it does not create points pressure. The linearity pertains to the ratio between purchases and rewarding at various purchase levels. Linear rewarding therefore awards one point for each euro spent, regardless of the amount of previously accumulated purchases; a nonlinear schedule would increase the ratio for higher levels of accumulated purchases. An issue related to reward timing is the expiration of

obtained loyalty points. Although reward expiration creates stronger points pressure (Kopalle & Neslin 2003), it may also cause frustration or demotivate light users (Stauss et al. 2005).

2.7.4 Single-Vendor LP or LP Partnerships

Although single-vendor (or sole-proprietary) LPs used to dominate markets, partnerships in LPs have become a prominent trend, one that is likely to increase in the future (Capizzi & Ferguson 2005; Berman 2006; Ferguson & Hlavinka 2009). Partnering in LPs takes two forms (Blattberg, Kim & Neslin 2008; Lemon & von Wagenheim 2009). One form includes a dominant firm that offers an LP whose members can earn or redeem collected points at some complementary partners (e.g., an airline's frequent-flier program with partners in credit card services, rental companies, travel agencies, and retailers). Another form of LP partnering includes an LP of a coalition of companies, with the management of the LP independent of coalition partners and run by a specialized operator. Such coalitions are known as multi-vendor LPs (also coalition LPs or multi-partner LPs) and usually comprise partnerships in frequently purchased sectors (e.g., grocery, petrol, apparel, credit card). Nectar in the United Kingdom and Air Miles in Canada are prominent examples.

To members, LP partnerships provide advantages of convenience, faster point collection, and more redemption options in comparison to the single-vendor LPs (O'Brien & Jones 1995; Wright & Sparks 1999; Capizzi & Ferguson 2005; Berman 2006). To partnering firms, besides cost sharing, LP partnerships offer strategic advantages of networking through spillover effects of partners' images and cross-selling opportunities (Varadarajan 1986; Simonin & Ruth 1998; Rese et al. 2008; Lemon & von Wangenheim 2009). Having a sole card for purchases at multiple vendors may encourage members to patronize vendors that belong to a network and use promotions at network partners to collect loyalty rewards more quickly. Wright and Sparks (1999) found that more than 52 percent of LP memberships in an analyzed U.K. sample were memberships in multi-vendor LPs and that such LP cards are used more frequently than single-vendor cards. Although highly relevant in practice, little research has investigated such networking effects across vendors in LP partnerships. Lemon and von Wangenheim (2009) show that customer usage and satisfaction with a core service increases cross-buying from complementary partners in an LP partnership (e.g., car rental, hotel), which in turn reinforces future use of the core service. Nevertheless, the effects are limited to highly complementary partners, and the reinforcing mechanism does not occur between partners with weaker fit, like an airline and a credit card service.

A debate on the effectiveness of multi-vendor LPs is still strong. Although some authors believe that described benefits of such networking make multi-vendor LPs "the natural end game for loyalty evolution" (Ferguson & Hlavinka 2006: 297), others are skeptical because of the incongruence of LP benefits with focal products (indirect rewards) and a division of loyalty across vendors (members buy brand A at vendor B to redeem a reward at firm C) (Dowling & Uncles 1997; Roehm et al. 2002; Kivetz 2005). Two empirical studies that assessed aggregate purchase patterns in multi-vendor LPs obtained mixed findings. Sharp and Sharp (1997) found no support for the network effect in an Australian multi-vendor LP. They assessed network effect across competing partners (all partners were department stores) rather than across complementary businesses. Using the same methodological approach, Meyer-Waarden and Benavent (2006) found significant, positive network effects among French retail stores that belong to the same multi-vendor LP; members were more likely to purchase across partners than from nonpartner stores.

2.7.5 Initial Generalizations

Program design has gained much attention in the literature, which offers the following generalizations. Initial evidence indicates the greater potential of customer-tier LPs to build lasting customer loyalty. The giving of direct rewards from the LP provider's offer (e.g., a cafeteria offering free coffee) is more effective than giving a reward unrelated to the LP offer. Cash rewards are particularly inefficient for firms. Soft LP rewards, which emphasize the relationship between a firm and an LP member, have positive effects on members' attitudinal and behavioral responses. For relationship-building efforts, firms should use delayed LP rewards. Finally, despite anecdotal evidence in favor of LP partnerships, the empirical evidence is too scarce to confirm their primacy over single-vendor LPs.

2.7.6 Future Research Directions

1. In general, more research is needed on the effectiveness of different LP structures and their impact on short- and long-term customer loyalty and firm profitability. Research is warranted on the impact of frequency-reward versus customer-tier LP structures relative to the state when LP is not offered and relative to the everyday-low-price strategy (Singh et al. 2008; Blattberg, Kim & Neslin 2008). Which market conditions (e.g., sector, competition intensity) favor certain LP structures over others?
2. Effectiveness and profitability of a customer-tier LP largely depends on its ability to define meaningful customer tiers with respect to their past, current, and future potential.

Which indicators can profitably discriminate among customers in customer-tier LPs without alienating customers? Which forward-looking metrics related to customer lifetime value are the best metric for customer selection in customer-tier LPs? How are customer lifetime metrics related to selection into customer-tier LPs?

3. One explanation for the weak effects of LPs on changes in purchase behavior of some segments is the low perceived benefits of LP rewards and high thresholds to reach those rewards (Noble & Phillips 2004; Meyer-Waarden & Benavent 2009). Can greater reward differentiation between customers induce changes and customer engagement?
4. Existing research seems to favor hard (economic) rewards. However, hard and soft rewards may strengthen each other. Interactions between hard and soft rewards require further investigation. Which hard and soft rewards can be successfully combined across diverse LP membership segments? Should LP tiers differ in hard and soft and in immediate and delayed benefits offered (e.g., hard, immediate benefits for lower tiers and soft benefits to the higher ones)? Would this induce spurious loyalty among lower-tier LP members and alienate higher-tier members?
5. Although linear continuous LPs are the most common, each combination of continuity and linearity of rewards has its advantages and weaknesses, and more research is needed to assess the effectiveness of various options. How does the effectiveness of continuous versus threshold LPs differ across diverse market contexts and customer segments? Which LP reward is most efficient: linear, convex, continuous, threshold, or some combination of those?
6. Reward structures are not stable over time; firms typically change them to adapt to strategic directions (e.g., reduce number of loyalty points offered). Can firms change their reward structures without repercussions for program attractiveness and effectiveness? Which changes are detrimental to the program, and which changes may benefit it? How should firms communicate these changes?
7. Despite the frequency of LP partnerships, there is a lack of research into their effects. Are LP partnerships more effective and profitable strategies than single-vendor LPs? Which type of LP partnership is more effective, and how do different designs affect profitability across partners? How strong are spillover effects in such networks? How do effects differ across diverse partners (e.g., effects across competing partners versus across complementary or distant partners)?

2.8 Conclusion

As LPs proliferate in the market, despite unequivocal evidence of their effectiveness in managerial literature, thorough research into their effectiveness seems ever more warranted. Not only are LPs costly to initiate and maintain; their success depends on the firm's strategic planning of their design, market, and business goals. Unfortunately, because many LPs are primarily defensive responses to competitors' programs, their potentials may be underused. Moreover, as LPs proliferate, their ability to induce customers' long-term commitment diminishes. Therefore, demand for scientific knowledge about the drivers of LP success continues to increase. This review summarizes the insights from literature pertaining to LPs and differentiates them according to the strength of the evidence provided. From this overview, we note important generalizations that hold across studies (for a summary, see Table 2.1). Tables at the end of this chapter contain a more detailed overview of findings from selected studies discussed herein. We hope this chapter will facilitate better understanding of the impact of LPs and stimulate future research in this exciting area.

Table 2.1 Inital generalizations on the impacts of LPs

Area	*Initial Generalizations*
LP enrollment	• The likelihood of enrolling into a new LP depends on distance from the store, previous purchase levels, and attitudinal commitment of LP members (self-selection of customers into LPs) • Privacy concerns become increasingly important impediment to LP participation • Economic benefits of LPs the most important drivers of LP participation • Sociodemographic characteristics are not important moderators of LP enrollment
LP effects on customer behavior	• In general, LP participation has positive effects on customer behavior (retention and expenditures). • LP participation particularly increases expenditures (spending, frequency) of low and moderate buyers. • Increases in retention and expenditures have positive effects on profitability. • Switching costs occur in LPs, but they are the most relevant to medium-level users. • Findings on the impact on SOW are mixed. • Methodological and contextual differences in analyses explain the mixed findings in LP studies.
LP effects on customer attitudes	• LP members have more positive attitudes and commitment than nonmembers. • Perceived attractiveness of an LP and its rewards enhances satisfaction and overall attitudinal loyalty of LP members.
LP mechanisms	• LP members increase expenditures the closer they are to obtaining a reward (the points-pressure mechanism). • Initial evidence suggests positive effects of obtaining a reward on subsequent attitudinal and behavioral responses of LP members (the rewarded-behavior effect).
LP design	• Rewards related to a firm's offer (direct rewards) are more effective than unrelated rewards. • Cash rewards are inefficient incentives. • Preferential treatment in LPs increases member' attitudinal and behavioral responses. • Delayed rewards should be used for loyalty building among satisfied and committed customers

Table 2.2 Adoption of LPs

Study	Context (Country)	Dependent Variable(s)	Research Design[a]	Selected Findings
Wright & Sparks (1999)	Retailing (U.K.)	LP ownership, types of LP, reasons for applying/refusing LP	Survey (interview)	Economic reasons are most important drivers of LP enrolment: rewards, in-store promotions, credit reasons. Not shopping often enough at the store and having too many cards are the most prominent reasons for refusing LPs.
Graeff & Harmon (2002)	Various (U.S.A.)	Awareness of data collection practices, privacy concerns	Survey	Customers believe retailers use LPs to increase loyalty and competitiveness, low awareness of personal information use. Customers concerned about usage of personal information, especially in Internet purchases. Effect pronounced among women, high income, and younger customers.
Allaway, Berkowitz, & D'Souza (2003)	Retailing (U.S.A.)	Likelihood of adoption	Scanner data	Likelihood of adoption of new LP influenced primarily by distance from store; secondarily by store characteristics, billboards, radio event promotions. Influence of previous adopters is key driver of new enrollments. Innovators have higher income and often executive or professional employment.
De Wulf et al. (2003)	General (Belgium)	Likelihood of joining described LPs	Conjoint analysis	Choice to participate in LP determined by participation costs and expected program benefits (70%). Consumers who value exclusive membership and those with high purchase volumes most likely to participate in LP.
Kivetz & Simonson (2003)	Retailing (gas station, department store) (U.S.A.)	Likelihood of joining LP, willingness-to-pay fees, difficulty to comply with LP requirements	Experimental studies	Evaluation of LPs based on effort to obtain a reward relative to same effort for other customers. When consumers perceive effort advantage, increasing program requirements enhances likelihood of joining LP and perceived value. Effect pronounced among women.
Magi (2003)	Grocery retailing (Sweden)	Share-of-purchases (SOP); share-of-visits (SOV) in the primary store	Store choice diary, follow-up survey	Nonsignificant main effects of sociodemographic variables (age, sex, purchase volume, income, household size, employment, number of small children) on SOP or SOV. Positive moderating effects of purchase volume × satisfaction; heavy buyers more sensitive to changes in satisfaction.
Noble & Phillips (2004)	General retailing (U.S.A.)	Reasons to refuse to enroll in LPs or quit memberships	Focus groups, interviews	Most prominent reason: high initiation requirements. Other important dimensions: requirements for accumulation, mental energy, overall perceived effort, perceived loss of privacy, social status.
Stauss, Schmidt, & Schoeler (2005)	Transportation service (n.a.)	Customer frustration in LPs	Focus groups	The strongest impact on frustration: qualification barriers, impossibility to claim reward, low value of reward, high costs of redemption. Frustration sensation triggers protest and avoidance. Two directions of influence: LP itself or program provider.
Dholakia (2006)	Financial service, car sales, fast-food (U.S.A.)	Purchase propensity, perceived control, positive anticipated emotions	Experimental field studies	Automatic enrollment in a relational LP has positive effects on relational behaviors of self-determined customers (intrinsically motivated). For other results, see Table 2.4.
Evanschitzky & Wunderlich	Retailing (DIY franchise	4 stages of customer loyalty: cognitive-	Survey	Gender does not moderate links among stages. Age, education, and income do not significantly influence decision to act as loyal customers (purchase choice, WOM).

(2006)	system) (Germany)	affective-conative-action loyalty		
Leenheer et al. (2007)	Grocery retailing (The Netherlands)	LP membership decision, SOW	Home scanner panel data	Different drivers of decision to become LP member and maintain membership. Positive effects on enrolment: perceived economic and noneconomic benefits. Negative impact of privacy concern and multiple cards possession. Insignificant effects of sociodemographics, except income (negative effect).
Van Doorn, Verhoef, & Bijmolt (2007)	General (The Netherlands)	Number of loyalty cards consumer owns	Survey (self-reported behavior)	Negative impact of privacy concerns and positive impact of income on number of cards consumer holds. Women, consumers age 35–64, those who live together rather than single, and own property posses more loyalty cards.
Wendlandt & Schrader (2007)	Bookstore (Germany)	Willingness to participate, negative WOM, repurchase intention	Survey(interviews)	LP can arouse psychological reactance of customers, especially if legal bonds are imposed. Reactance against LPs leads to reduced willingness to participate in LP, negative WOM and decreased repurchase intention.
Hunneman, Bijmolt, & Elhorst (2008)	Retail (clothes) (The Netherlands)	LP penetration rate, no of visits, expenditure per visit	Sales data, LP database	Distance to the store negatively affects LP penetration rate and visit frequency, but positively affects expenditures per visit.
Meyer-Waarden & Benavent (2009)	Grocery retailing (France)	Purchase behavior before and after LP enrolment	Home scanner panel data	For late adopters: heavier buyers adopt faster. Relative to nonmembers, LP members show increase in purchase levels before and at enrolment, effects die out within 6–9 months. Increases due to switching from competitors.
Demoulin & Zidda (2009)	Grocery retailing (Belgium)	Adoption likelihood, adoption timing	Survey	Perceived advantages/complexity of increases/decreases probability of adoption but does not affect its timing. Behavioral (SOW) and attitudinal loyalty increase adoption likelihood and timing. Economically driven members adopt faster.
Mimouni-Chaabane & Volle (2010)	Retailing (France)	Perceived benefits of LPs, perceived relationship quality	Survey	Multiple perceived benefits: strongest effects of monetary benefits, followed by benefits of exploration, entertainment, social visibility and recognition. Positive relation between perceived relationship investment and relationship quality.

Notes: LP = loyalty program, SOW = share-of-wallet, WOM = word of mouth. [a]If not otherwise stated, survey refers to a survey of consumers.

Table 2.3 Effects of LPs on customer behavior (attitudinal and behavioral loyalty) and sales

Study	Context (Country)	Dependent Variable(s)	Research Design[a]	Selected Findings
Sharp & Sharp (1997)	Grocery retailing (Australia)	Repeat purchases, SOW, market penetration	Survey (self-reported panel)	Overall weak impact of LPs on repeat-purchase loyalty on aggregate levels. Only for some LP brands observed levels higher than theoretical benchmark ("excess loyalty"). No network effects.
Dreze & Hoch (1998)	Grocery retailing (baby products) (U.S.A.)	Sales, profit	Sales data, quasi experimental design	Category-related LP actions significantly increase total sales and profit in destination category (25% increase in sales 190% profit growth), number of transactions, number of new customers, and total amount of money spent on category on each shopping trip.
Bolton, Kannan,	Financial services	Customers'	Credit card	LP membership does not per se affect repurchase but moderates effects of service

& Bramlett (2000)	(U.S.A.)	repurchase decision, purchase frequency	usage data, survey	evaluations on repurchase. Consumers weight losses more than gains in evaluations. LP members overlook or discount negative evaluations of the company vis-à-vis competition.
Zhang, Krishna, & Dhar (2000)	Grocery retailing (U.S.A.)	Sales, profit	Experiment, market data + survey	LPs profitable in markets with high levels of variety-seeking behavior. In markets characterized by inertia repurchase, LP rewards merely subsidize sales that would have occurred anyway.
Kopalle & Neslin (2003)	Airline industry (U.S.A.)	Customers' purchase decisions, consumer utility, profit, revenue	Game theoretical simulations	LP economically viable strategies if consumers (1) highly value future benefits, (2) LP can expand market, and (3) for higher-preference brands. LP effective if generated sales increases come from category growth, rather than from competitors.
Lal & Bell (2003)	Grocery retailing (U.S.A.)	Spending, purchase frequency, basket size	Sales data	Positive impact of LP on shopping behavior and profitability (relative to levels before LP introduction). Profitability primarily due to incremental sales to casual shoppers. Heavy users redeem the most, which decreases their profitability to retailer.
Magi (2003)	Grocery retailing (Sweden)	Share-of-purchases (SOP) and share-of-visits (SOV)	Store choice diary, follow-up survey	Chain's LP has significant effect on SOV and SOP in that chain but not a store. Modest effect of customer satisfaction on SOP and SOV. Negative effects on SOP of having competing card.
Mauri (2003)	Grocery retailing (Italy)	LP usage	LP application forms, sales	60% of cards issued not activated or used in the first year. Promotional inducements positively affect LP usage, and their absolute value is more important than their percentage of total shopping basket.
Smith, Sparks, Hart, & Tzokas (2003)	Retailing (various) (n.a.)	Attitudes towards retailer/LP, behavioral loyalty, usage levels	Survey, consumer diary panel	Nonmembers less loyal, less involved, and less emotionally attached to retailers than LP members. Substantially higher spending levels and visit durations for members. Members more critical and less satisfied with store but less volatile in perceptions.
Verhoef (2003)	Financial services (The Netherlands)	Customer retention, SOW	Survey, Sales	LP membership positively affects both customer retention and customer share development. Increase in SOW (0.04)
Wansink (2003)	Consumer packaged goods (U.S.A.)	Perceptions of LP effectiveness, incremental sales, profitability	Survey (interviews customers, managers)	Brand managers overestimate potentials of heavy users; underestimate profitability potentials of low and moderate users. Managers believe heavy users are the most profitable to target and should be targeted with costly, high-reward LPs.
Yi & Jeon (2003)	Beauty shops and fried-chicken stores (not specified)	LP value perceptions, brand/ program loyalty (attitudinal loyalty to store/LP)	Survey, experimental study	Moderating effect of level of involvement on customer loyalty (attitudinal preference). In high involvement, value perception of LP has positive effect on loyalty. In low involvement, effect fully mediated by program loyalty.
Bellizzi & Bristol (2004)	Grocery retailing (U.S.A.)	Behavioral loyalty(self reported SOW), frequency of card usage	Survey	Card usage and card ownership are negatively related to supermarket loyalty. Frequent card users are less likely to be supermarket loyal, more likely to patronize different stores and loyalty cards.
Lewis (2004)	Grocery and drugstore retailing (online) (U.S.A.)	Purchase choice probability, revenues, order incidence and	Online sales data, simulation experiments	LP significantly increases repeat purchase rates, revenues, order size (basket), and number of orders.

		order size		
Noordhoff, Pauwels, & Odekerken-Schroder (2004)	Grocery retailing (The Netherlands, Singapore)	Self reported SOW, Attitudinal store loyalty, Store satisfaction	Surveys	LP effects depend on the maturity of the market. Positive LP effects on attitudinal and behavioral loyalty in growing market (Singapore). Positive effects only on attitudinal loyalty in mature market (NL).
Taylor & Neslin (2005)	Grocery retailing (U.S.A.)	Sales, rewarded behavior, point pressure behavior	Self-reported survey data, basket item data	LP positively affects sales. Positive impact of current period points-pressure behavior and long-term post-program rewarded behavior. Point pressure effects greater than rewarded-behavior effects. LP increased sales higher for customers with initially lower baseline purchases.
Seiders, Voss, Grewal, & Godfrey (2005)	Retailing (apparel, home) (U.S.A.)	Customer retention: repurchase visits and repurchase spending	Sales data, e-mail and postal surveys	LP participation positively affects both repurchase visits and repurchase spending. LP membership effects greater for repurchase visits. Nonsignificant effect on repurchase intentions.
Van Heerde & Bijmolt (2005)	Retailing (apparel) (The Netherlands)	Store revenues, profit	Scanner data	Nonmembers of LP more responsive to price discounts than members of LP. Nonmembers important for firm profitability. Door-to-door flyers more effective than direct mailings for attracting additional members.
Carlsson & Lofgren (2006)	Airline (Sweden)	Determinants of switching costs	Sales data	Frequent-flier LP significantly increases switching costs (12% of average ticket price). Large part of switching costs attributed to perceived quality differences.
Evanschitzky & Wunderlich (2006)	Retailing (DIY franchise system) (Germany)	4 stages of customer loyalty: Cognitive-Affective-Conative-Action Loyalty	Survey	LP membership positively moderates influence between customer's buying intentions and actual buying behavior. LP members more likely to transform purchase intention to actual purchase than nonmembers.
Gomez, Arranz, & Cillan (2006)	Grocery retailing (Spain)	Commitment, satisfaction, trust, Perceived behavioral loyalty	Survey	LP members are more behaviorally loyal to retailer, less loyal to competitors, have more positive attitudes, higher satisfaction, trust and commitment than nonmembers. Customers do not modify their behavior due to LP enrolment. LP reinforces loyalty of already loyal customers.
Meyer-Waarden & Benavent (2006)	Grocery retailing, Multi-vendor LP (France)	Purchase frequency and share, category requirement, purchase duplication	Sales data, natural experiment	Mixed findings. Significant deviations of penetration, purchase frequency and SOW above theoretical benchmark for 3 of 6 LPs. Positive network effects in a multi-vendor LP.
Kopalle et al. (2006)	Airline (U.S.A.)	Customer utility (current and expected future utility)	Frequent flier program data	Frequency-reward and customer-tier components of LP increase customer usage. Positive effects on rewarded behavior, points-pressure effects, positive state dependence.
Palmatier, Gopalakrishna, & Houston (2006)	Business-to-business (U.S.A.)	Change in total profit from a customer over time	Survey of customers, salespeople and sales managers	Effects in B2B setting. Negative effect of financial reward LPs on profit (31% loss). Strong positive impact of social LP (personalized treatment and relational bonds) on profit (78% gain). Positive impact of structural LP (customer solutions for building structural bonds) on profit only for high interaction frequency customers (23% gain).
Lacey, Suh, & Morgan (2007)	Retailing (department store) (U.S.A.)	Relationship commitment, WOM, customer feedback	Survey of customers' perceptions	LP's preferential treatment strengthens relationship commitment, which affects positive WOM and customer feedback.

		purchase intentions		
Liu (2007)	Retailing (fuel and store merchandise) (not specified)	Purchase frequency Transaction size Reward claim rate	Sales data	Light and moderate buyers at initial stage of relationship over time significantly increase their purchase frequency. Heavy buyers do not increase purchase frequency and spending over time.
Mayer-Waarden (2007)	Grocery retailing (France)	Customer retention (no-churn), SOW	Home scanner panel data	Positive effects on SOW and retention (negative churn). Negative effect on customer retention of simultaneous possession of multiple cards and geographical distance. High SOW increases retention.
Leenheer et al. (2007)	Grocery retailing (The Netherlands)	SOW, LP membership decision	Home scanner panel data	Smaller (but significant) effect of LP membership on SOW when members' self-selection taken into account (average increase 4%). Positive effects of distribution density and price attractiveness, negative effects of the number of competitive LP memberships, no effects of socio-demographics.
Von Wangenheim & Bayon (2007)	Airline (Global)	Spending levels, revenues	Frequent flier program data	Negative critical incidences significantly reduce LP members' future spending and usage, especially for high-status membership tiers. Positive incidences have weak positive effects only for low status tiers.
Wirtz, Mattila, & Lwin (2007)	Financial services (credit cards) (Singapore)	SOW	Personal interviews	Positive effect of relative attractiveness of LP on SOW at all levels of attitudinal loyalty. Positive effect of perceived switching costs on SOW at low levels of attitudinal loyalty, only when LP is perceived attractive. At high levels of attitudinal loyalty, switching costs do not matter.
Cortinas, Elorz, & Mugica (2008)	Grocery retailing (Spain)	Price sensitivity, promotion sensitivity, brand impact, package size preferences	Sales data	Differences between LP members and nonmembers dependent on category considered. For some product categories, LP members less sensitive to regular price, more sensitive to price promotions. In general, LP members more heavily influenced by brand perceptions; prefer small package sizes.
Leenheer & Bijmolt (2008)	Retailing (The Netherlands)	Perceived customer knowledge Perceived customer loyalty	Survey of marketing managers	Technological skills of a firm have positive influence on perceived customer knowledge. Centralization has positive effects on customer knowledge and negative on perceived customer loyalty.
Lemon & Von Wangenheim (2008)	Airline (Europe)	Cross-buying across LP partnerships, usage, satisfaction	Frequent fliers program	Reinforcing effect: use of core services and satisfaction increases customer cross-buying from LP partners; cross-buying increases subsequent core service usage. Effects moderated by partners' fit with core service. Nonlinear effects of customer relationship duration on cross-buying (the ceiling effect).
Melnyk & Bijmolt (2008)	Various (The Netherlands)	Retention likelihood and spending levels at introductory/termination stage of LP (self-reported)	Survey	Only for 10% of members the increase in loyalty generated by LP introduction would be sustained if LP were terminated. For 47% of customers, LP termination would have no effects on loyalty. For 43% of customers, loyalty would decrease significantly.
Meyer-Waarden (2008)	Grocery retailing (France)	Basket value, inter-purchase times,	Consumer panel	LP members have higher basket values, purchase frequencies and share-of-wallet; lower interpurchase times and switching levels, compared to nonmembers.

		purchase frequency, SOW, switching, visited stores number		
Dreze & Nunes (2008)	Hypothetical examples (U.S.A.)	Status perceptions	Experimental studies	Status impressions of LP members affected by the number of tiers in LP and the relative size of each tier. Three-tier LP more effective than two-tier LP. Status perceptions correlated with future purchase intentions.

Notes: LP = loyalty program, SOW = share-of-wallet, WOM = word of mouth. [a]If not otherwise stated, survey refers to a survey of consumers.

Table 2.4 Design of LPs

Study	Context (Country)	Dependent Variable(s)	Research Design[a]	Selected Findings
Zhang, Krishna, & Dhar (2000)	Grocery retailing (U.S.A.)	Sales, profit	Experiment, market data	LP's delayed rewards more profitable in markets with high levels of variety-seeking behavior. In markets characterized with inertia repurchase, immediate rewards more efficient.
Kim, Shi, & Srinivasan (2001)	Hypothetical example	Firm market share, consumer price sensitivity, optimal price, profit	Analytical game theoretic model	In markets with small, price-sensitive, heavy-user segment profitable to offer cost inefficient rewards (cash rewards). Cost-efficient rewards (free firm products) profitable when heavy-user segment is large and not price sensitive. Firms gain from adoptions of LPs as long as light users are not price sensitive.
Kivetz & Simonson (2002)	Hypothetical examples + Internet LP (U.S.A.)	Preference for various types of rewards, likelihood to join LP	Experimental studies, survey	Higher required efforts shift consumer preferences from necessity to luxury rewards. Effect stronger among consumers who feel guilt about luxury consumption. Increasing monetary cost of participating in LP decreases preference for luxury rewards.
Roehm et al. (2002)	Retailing (beverages) (U.S.A.)	Brand loyalty (brand choice likelihood)	Experimental study	LP effects mediated by program's impact on accessibility of brand associations. Incentive compatible with brand association boosts post-program loyalty. Tangible and concrete incentives undermine post-program loyalty.
De Wulf et al. (2003)	General (commercial consumer database) (Belgium)	Likelihood of joining LP	Survey, conjoint analysis	Consumers want minimal trouble to enroll, prefer immediate benefits combined with product and additional information to other program benefits and unlimited LP duration. Multi-vendor program's effectiveness over single-vendor LP not supported.
Kivetz (2003)	Various hypothetical examples (U.S.A.)	Reward preference	Experimental studies	Required effort affects trade-off between the probability and magnitude of reward. Effort enhances preference for sure-small reward over large-uncertain gains. Inverted-U effect for increased levels of effort.
Wansink (2003)	Consumer packaged goods (U.S.A.)	Perceptions of LP effectiveness, incremental sales and profitability	Interviews with managers, survey (customers, managers)	LP with high, costly rewards least cost-effective for generating incremental purchase intentions across heavy, moderate, and light user segments. Low-reward programs the most cost effective, medium LP most cost-effective for heavy users. Important profitability potential of low and moderate LP rewards that target light users.

Yi & Jeon (2003)	Beauty shops and fried-chicken stores (not stated)	Value perception of LP, brand/ program loyalty (attitudinal loyalty to store/LP)	Experimental study	Level of involvement moderates effects of reward type and reward timing on value perception of LP. With high involvement, direct rewards more effective. In low involvement, immediate rewards more valuable than delayed rewards
Van Osselaer, Alba, & Manchanda (2004)	Airlines (hypothetical) (U.S.A.)	Purchase choice (between two competitors)	Experimental studies	Irrelevant information (e.g., way the same amount of LP points is allocated) influences consumer choices, even when an easily justified basis for choice other than irrelevant attribute is provided.
Kivetz (2005)	Hypothetical examples + café LP (U.S.A.)	Likelihood of choosing a reward, preference for a reward	Experimental studies	When obtaining rewards requires effort, customers choose rewards congruent with their source or sponsor. Customers more likely to redeem congruent reward when they invest effort in attaining them.
Dholakia (2006)	Financial service, car sales, fast food (U.S.A.)	Profit, purchase frequency, volume, churn, SOW, positive emotions	Experimental field studies	Self-determined customers (i.e., believe they joined firm on their own initiative rather than firm's direct efforts) engage in more relational behaviors over extended period than do firm-determined customers. Automatic enrolment in LP has positive effects on relational behaviors of self-determined customers.
Keh & Lee (2006)	Financial services (bank), restaurant service (n.a.)	Repeat-purchase intention, price sensitivity, commitment, positive WOM	Experimental study	Level of satisfaction moderates effectiveness of LPs. Satisfied customers prefer delayed rewards (of higher values) to immediate rewards. Dissatisfied customers prefer immediate, direct rewards. Reward type preference occurs only if timing of rewards is manipulated.
Kivetz, Urminsky, & Zheng (2006)	Cafe LP and Internet site's LP (U.S.A.)	Probability of purchase on a given day, likelihood of joining the program	Experimental studies	The closer individuals get to obtaining rewards, the more effort they expend: accelerate purchases, purchase more, and persist longer. The stronger the tendency to accelerate, the greater is retention and faster reengagement in LP. Even illusionary progress toward the reward goal accelerates consumer effort.
Dreze & Nunes (2007)	Hypothetical, airline (International)	Interpurchase time, effort, perceived ability to reach the goal	Experimental + frequent flier data	Successful goal attainment increases customers' subsequent motivation and effort due to increased self-efficacy. Effectiveness of LP depends on number of rewards offered and their attainability (LP divisibility). Increasing divisibility strengthens loyalty among low-level users. Too much divisibility is demotivating.
Henning-Thurau & Paul (2007)	Restaurant service (hypothetical) (n.a.)	Extrinsic and intrinsic motivation, loyalty intentions	Experimental study	If perceived as controlling, economic rewards can decrease customer loyalty through decreased intrinsic relational motivation and increase in calculative commitment. Implications: lower future loyalty intentions and higher switching.
Leenheer et al. (2007)	Grocery retailing (The Netherlands)	LP membership decision, SOW	Home scanner panel data	Higher reward rates (discount and saving rates) and perceived program benefits positively affect decision to enroll in LP. No effect on behavioral loyalty once customers are enrolled. Positive attitudes toward LPs are key driver.
Bridson, Evans, & Hickman (2008)	Health and beauty retailer (Australia)	Store satisfaction, store loyalty (self-reported)	Survey	Positive effects on store satisfaction and store loyalty. Hard attributes of LP predict store satisfaction; soft attributes drive store loyalty.
Demoulin & Zidda (2008)	Grocery retailing (Belgium)	SOW, patronage frequency (self-	Survey	LP members satisfied with reward scheme more behaviorally, attitudinally loyal and less price sensitive than unsatisfied members. Unsatisfied LP members more loyal

		reported), attitudinal store preference		than nonmembers. Effects particularly significant for behavioral loyalty.
Melnyk & Bijmolt (2008)	Various (The Netherlands)	Likelihood to remaining customer spending levels (self-reported)	Survey	Non-symmetric effects of LP design at introductory versus termination stage. Non-significant effect of discount feature of LP on customer retention. Negative effect of saving feature on loyalty if LP is terminated. Non-utilitarian elements of LP enhance loyalty. Loyalty sustained after termination of LP only for 10% of members.
Rese, Wilke, & Schimmelpfenning (2008)	Various industries, grocery retailing (Germany)	Switching barriers, Repeat purchase intentions, Cross buying intentions	Survey	Multi-vendor LPs (MVLPs) exhibit lower levels of switching barriers and customer repurchase than single-vendor LPs (SVLPs). MVLP membership increases cross-buying intentions from other vendors in MVLP. SVLP has significant, positive effects on customer loyalty's metrics.
Kim et al. (2009)	General retailing (department store) (Korea)	Purchase frequency, purchase volume	Sales, transaction data	Participation in customer-tier LPs (for heavy users) increases purchase amount but not frequency. Sales promotions have positive effect on frequency and volume. The strongest effects are on light buyers. Effects enhanced for members with high attitudinal loyalty.

Notes: LP = loyalty program, SOW = share-of-wallet, WOM = word of mouth. [a]If not otherwise stated, survey refers to a survey of consumers.

CHAPTER 3
DO VENDORS BENEFIT FROM PROMOTIONS IN A COALITION LOYALTY PROGRAM?*

3.1 Introduction

As the number of loyalty programs (LP) proliferate, it is becoming increasingly difficult for LP providers to engage customers in LPs. For example, an average US cardholder is enrolled in more than fourteen LPs but remain active only in six of those (Ferguson & Hlavinka 2009). The main issue for LP managers is therefore retention and the engagement of existing cardholders rather than striving to enroll more cardholders. However, limited evidence exists on how to engage customers once they have become LP cardholders, which has resulted in calls for more research in this area (Grewal and Levy 2007).

Personalized marketing communication through promotions targeted at cardholders can be used to encourage cardholders' engagement (Kumar & Reinartz 2006; Kemp 2006; Blattberg, Kim & Neslin 2008). Promotions of LPs typically aim to increase the frequency and volume of purchases by rewarding cardholders with additional loyalty points or discounts over a limited time period. Still, more research is needed on the effects of LP-related promotions (Grewal & Levy 2007; Hardesty & Bearden 2009).

Program participation may be further encouraged in an LP offered by a coalition of multiple vendors, as such LPs tend to have greater perceived value (Capizzi & Ferguson 2005; Berman 2006). A specific form of such an LP includes a coalition of companies; with a specialized operator independent of the coalition partners that manages the LP (Blattberg, Kim & Neslin 2008: 578). Such coalitions are known as coalition LPs or multi-vendor loyalty programs (MVLPs).[2] They comprise partnerships of noncompeting firms, usually in frequently purchased sectors (e.g., grocery, petrol, apparel, credit card services). Nectar, Air Miles, FlyBuys, and Payback are prominent examples of coalition LPs.

Because LP cardholders obtain loyalty rewards for purchases with each partner in the coalition, MVLPs provide cardholders with advantages of convenience, faster point collection, and more redemption options. Coalition LPs allow vendors to expand their

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[2] Throughout the text, we use the terms *multi-vendor LP* and *coalition LP* as synonyms. In this chapter, the term *multi-vendor* LP is emphasized to highlight the multiple-vendor structure of the LP.

markets, which increases firm profitability (Kopalle & Neslin 2003; Liu & Yang 2009), particularly when the different businesses are complementary. In addition, the coalition may provide strategic benefits through spillover effects of vendors' images and cross-selling opportunities (Varadarajan 1986; Lemon & von Wangenheim 2009). In particular, a joint presentation of vendors' promotions in an MVLP may increase the efficiency and effectiveness of promotions. Furthermore, having one card for purchases at multiple vendors may encourage cardholders to patronize vendors that belong to a coalition and use promotions at MVLP partners to collect loyalty rewards more quickly (Berman 2006). So far, little research has investigated coalition benefits across vendors in an MVLP.

In analyzing longitudinal data of five prominent retailers in an MVLP, this study addresses two main research objectives. First, we aim to investigate the effects of LP-related promotions on a focal vendor's sales in diverse retailing sectors. Second, we study the existence of coalition benefits in the MVLP. This is among the first studies to investigate joint promotion and cross-vendor effects in a typical MVLP.

3.2 Theoretical Background

3.2.1 Effects of LP-related Promotions

In this study, we differentiate between *LP rewards* and *LP-related promotions*. The character of LP rewards is determined by LP design and dependent on accumulated purchases (as in the typical example of buy-X-get-one-free LP rewards). Conversely, LP-related promotions are short-term promotional actions targeted at LP cardholders, who cannot foresee promotions. In general, LP promotions aim to temporarily increase a member's usage of the LP by increasing LP patronage and spending. Typically, LP-related promotions award LP cardholders with additional LP currency for purchases in one or more product categories during a promotional period. The additional amount of loyalty points is added to the regular amounts of points that could be collected on purchases in nonpromotional periods (e.g., double points on purchases during a promotional period). Such LP-related promotions differ from the "classic" notion of sales promotions: they are not price promotions, but essentially promotions related to the LP currency (loyalty points) and directed at collecting behavior.

Little is known about the effectiveness of LP-related promotions, particularly about their effects over time. Related studies on LP design primarily assessed the attractiveness of different types of reward incentives, ignoring the effects of short-term promotions in LPs (Kim et al. 2001; Kivetz 2005; Keh & Lee 2006). In general, the design of LP incentives

significantly influences program enrollment and usage (van Osselaer et al. 2004; Leenheer et al. 2007; Demoulin & Zidda 2009). However, LP participation delivers mainly long-term benefits through delayed rewards that cardholders can obtain for continuous purchases. Therefore, short-term promotions can help leverage a firm's short-term goals and encourage cardholders' engagement in LPs (Lewis 2004; Nunes & Dreze 2006b). Simulations by Lewis (2004) indicate that e-mailing an additional coupon (short-term promotion) increases cardholders purchase incidence rate, spending volume, and average customer revenue compared with offering only LP rewards.

However, LP rewards and LP-related promotions may increase cardholders' sensitivity to incentives, which may divert attention away from the brand and/or firm. The consequence is that the reward may become the primary reinforcement in purchases, which increases customers' spurious loyalty behavior (Rothschild & Gaidis 1981; Dowling & Uncles 1997; Roehm et al. 2002). This effect may be particularly pronounced in MVLPs, because of a possible incongruence of LP benefits with the focal products and a division of loyalty across vendors (Dowling & Uncles 1997; Kivetz 2005).

The effect of an LP-related promotion on sales may depend on the volume (number of cardholders receiving the promotion), the communication channel used (usually e-mail or post), or the number of featured vendors (individual versus joint promotions). An effect of the volume of a promotion is obvious: larger-volume promotions make offers salient to larger numbers of cardholders, which should have a direct, positive impact on effectiveness of the promotion. Direct mail and e-mail are the communication channels MVLPs use most frequently (Precision Marketing 2005; Kemp 2006). The integrated marketing communication literature advocates greater effectiveness from integrating multiple communication channels (Schultz 1996; Naik & Raman 2003). This indicates that using multiple media to reach cardholders with the same promotion might be more effective than using only one medium. Finally, the effectiveness of individual relative to joint promotions is closely related to the coalition benefits, which we discuss next.

3.2.2 Coalition Benefits in Multi-vendor Loyalty Programs

Coalition benefits are particularly important for MVLPs, as they may provide significant benefits to participating vendors and an impulse for consumers to join the program. In particular, the MVLP's promotions may benefit from the coalition in two ways. First, promotions run jointly by multiple firms in the MVLP may have a greater effect than

individual promotions. Second, cross-vendor effects on performance of other vendors in the MVLP may occur with the promotions of one vendor in the program.

Debate exists in the literature on the effectiveness of the joint relative to individual presentation of sales promotions (Simonin & Ruth 1998; Geylani et al. 2008). Because joint offers feature several promotions across different partners, they may induce positive coalition effects through reinforcement of brand images and an increase in perceived value (Varadarajan & Rajaratnam 1986). In contrast, the joint presentation of vendors increases the transparency of incentives across vendors, which may foster comparison and strengthen the importance of incentives rather than products (Rothschild & Gaidis 1981; Dowling & Uncles 1997).

An MVLP promotion that features one vendor in a coalition makes the MVLP itself more salient, which could be beneficial to other partners in the coalition (Bucklin & Sengupta 1993; Simonin & Ruth 1998). Hence, individual promotions of one vendor may affect sales at other vendors through spillover effects of MVLP-related promotions. We refer to this form of coalition benefits cross-vendor effects of LP-related promotions. Another rationale for the potential of cross-vendor effects is that the promotions may induce faster collection of points, which may encourage cardholders to earn more points by purchasing at multiple vendors in the coalition (Sharp & Sharp 1997; Kivetz et al. 2006; Nunes & Dreze 2006b).

3.3. Data Description

To empirically assess own- and cross-vendor effects of sales promotions in an MVLP, we analyze data from a renowned MVLP in the Netherlands. This program spans retailers from various sectors (e.g., department stores, grocery retailing, apparel retailing, drug stores, liquor stores, do-it-yourself, electronics, petrol stations). Cardholders collect loyalty points on their purchases at participating vendors. On average, for each euro spent, a member receives one loyalty point (although policies of some vendors varied over time). Customers can redeem collected points for various merchandise, entertainment, or travel arrangements. Data are available for the largest five vendors in the program, which together account for 91 percent of all promotions in the MVLP (see Table 3.1). All five vendors have strong brand equity in their respective sectors and are not direct competitors.

Table 3.1 Descriptive statistics of promotions and vendors

	Retail sector	No. of individual promotions	No. of joint promotions	Most frequent promotion duration (weeks)	Most frequent medium
Vendor 1	Grocery	2	4	2-3	E-mail
Vendor 2	Electronics	n.a.	16	2 & 4	E-mail
Vendor 3	DIY	35	16	2	Post
Vendor 4	Petrol	46	16	8-9	Post
Vendor 5	Department stores	44	6	1	E-mail+Post

For each vendor, aggregate weekly data on performance is available for 141 weeks, from the beginning of year 2005 until mid-2007. To specify appropriate performance measures, we use the rationale that successful marketing promotions would lead to increases in customer spending (Van Heerde & Bijmolt 2005). A customer's spending level directly corresponds to the number of loyalty points obtained on his or her purchase. Therefore, the number of loyalty points issued in a certain week can be used as a measure of a vendor's performance. Panel unit root tests show that (the log of) this performance measure is stationary over time, as the *p*-values corresponding to the Levin, Lin, and Chu (2002) statistic and the Im, Pesaran, and Shin (2003) W-statistic are indistinguishable from zero.

The MVLP operator sends sales promotion mailings to cardholders with offers of the program's vendors (similar example in Kemp 2006). These LP-related promotions offer cardholders an additional amount of points for purchases in a certain category during a limited time period. To allow for a comparison of promotional and nonpromotional periods, we do not include this additional amount of loyalty points in our performance measure. The resultant dependent variable is the number of (regular) loyalty points issued by each vendor.

The promotions differ in volume, duration, communication channel, and number of vendors featured. The volume of a promotion refers to the number of cardholders receiving the mailing with the promotion. Using a median split per vendor, the promotions were grouped into large-volume and small-volume promotions. The promotion duration differed substantially both within and across vendors. Some promotions lasted only for one week, and a few promotions spanned more than ten weeks, with eighteen weeks being the largest duration of a promotion. As for the utilized communication channel, vendors may use e-mail, direct mail, or a combination of those. Finally, mailings may feature promotions of a single vendor (individual promotions) or promotions of more than one vendor (joint promotions).

Table 3.1 presents some descriptive statistics across vendors in the analyzed database. The table shows that our data spans in total 185 promotions, of which 127 were individual promotions and 58 were joint promotions. The total number of promotions running at the same time in a week ranges from 0 to a maximum of 9 promotions (individual and joint promotions of all MVLP vendors), with an average of 3.7 promotions. Furthermore, there are differences in the promotions the vendors used. Note that in this chapter, we are mainly interested in general patterns and effect sizes, but we allow for vendor-specific effects in our modeling approach.

3.4 Model

3.4.1 Effects of MVLP-Related Promotions

To model changes in vendor j's sales to cardholders in week t, we analyze the number of loyalty points issued by vendor j in a week t (LP_{jt}). The logarithmic transformation of the dependent variable ($\ln LP_{jt}$) facilitates comparison of effect sizes across vendors. Note that effect sizes should, in this case, be interpreted in percentage terms. Our model relates $\ln LP_{jt}$ to the vendor's baseline performance, to the vendor's individual promotion(s) in this period, to the vendor's joint promotion(s), and to the promotion(s) of other vendors in the program in the same period.

A sales promotion may last for several weeks. Hence, it is important to account for possibly declining effects over time. The effect of a promotional mailing is expected to decrease over time because of forgetting and because there is a limit to how much a consumer can consume in response to a promotion (Blattberg et al. 1995). We therefore specify an exponential decay function for the effect of the time that has passed since the beginning of the promotion.

3.4.2 Own Effects and Coalition Benefits

Individual and joint promotions of vendor j and cross-vendor effects of promotions of other vendors ($s \neq j$) in the MVLP may affect changes in the number of loyalty points vendor j issues in week t. The individual promotions of vendor j are denoted by IM_{kjt}, $k=1,\ldots,K_j$, where $IM_{kjt} = 1$ if the k-th individual promotion by vendor j is valid in week t; otherwise, IM_{kjt} equals 0, and K_j is the total number of individual promotions of vendor j in the observation period. In contrast, in a single mailing joint promotions feature offers of multiple vendors that belong to the LP. The mailings with joint promotions that feature vendor j (among

promotions of other vendors) are denoted by JM_{ijt}, with equivalent specifications as for individual promotions; $JM_{ijt} = 1$ if vendor j participated in i-th joint promotion in week t, otherwise $JM_{ijt}, = 0$. We specify the following model for the number of points issued:

$$lnLP_{jt} = \alpha_j + \sum_{k=1}^{K_j} \beta_{kjt} IM_{kjt} + \sum_{i=1}^{I_j} \varphi_{ijt} JM_{ijt} + \sum_{s \neq j} \sum_{k=1}^{K_s} \delta_{kst} IM_{kst} + Z_{jt}'\tau_j + \varepsilon_{jt}. \qquad (3.1)$$

where α_j denotes the baseline performance for vendor j in terms of points issued, β_{kjt} gives the effect of individual promotion k by vendor j in week t, φ_{ijt} gives the effect of joint promotion i, and δ_{kst} denotes the cross-vendor effect of the k-th promotion by vendor s ($s \neq j$) in week t on the performance of vendor j. Because it is possible to have more than one promotion in a given week, the effects of all promotions are summed across all available promotions in week t, for own as well as for cross-vendor effects within the LP. The indicator variables IM_{kjt}, JM_{ijt}, and IM_{kst} ascertain that the appropriate promotions are selected in Equation 3.1. The effects of promotions are specified to depend on time t and on the specific promotion k or i. We discuss this dependence in detail in the next subsection.

The effects of individual and joint promotions of vendor j on its performance create the own effects of sales promotions (β_{kjt} and φ_{ijt}). Because vendor j belongs to the coalition in the MVLP, coalition benefits may occur as a result of synergies in the coalition. The coalition benefits in the MVLP would be lead to the greater effectiveness of joint relative to individual vendor promotions ($\varphi_{ijt} > \beta_{kjt}$) and/or positive cross-vendor effects ($\delta_{kst}>0$).

Equation 1 also contains the vector Z_{jt}, which contains a number of additional regressors. First, because some vendors changed their policy of issuing loyalty points to the cardholders, dummy variables for this policy change are included for these specific vendors. For example, one vendor decided to reduce the number of loyalty points offered per euro spent (before the policy change, a vendor offered one loyalty point for every euro spent; after the change, the vendor offered one loyalty point for every two euros spent). The corresponding dummy is zero initially and becomes one after the policy change.[3] Second, the performance of some vendors is subject to seasonal variation. For those vendors, seasonal adjustment dummies are included in Z_{jt}. The seasonality in these cases corresponds to potential seasonal peaks in sales before holidays or seasonal clear-outs (e.g., Christmas,

[3] Note that the points ratio per se is not problematic, as a log transformation of the dependent variable is used. As long as the ratio is constant over time, it will be absorbed in the equation's constant. In cases when the points ratio per vendor changes over time, we introduced policy change variables.

Easter) and potential seasonal dips in sales during holiday weeks. The appropriate seasonal factors to use were selected on a vendor-by-vendor basis. Finally, ε_{jt} gives the error term for vendor j in week t. We discuss the exact specification of this error term in a later subsection.

3.4.3 Moderating Effects on Promotion Effectiveness

The effect of promotion k by vendor j in week t may depend on the duration of that promotion (time since issuance) and on other idiosyncrasies of a particular promotion (e.g., volume, communication channel). Therefore, the own effect of promotion k by vendor j at time t on the number of loyalty points is specified as follows:

$$\beta_{kjt} = (e^{\gamma_1 T_{kjt}})\left(\theta_j + \gamma_2 LV_{kj} + \gamma_3 MP_{kj} + \gamma_4 MEP_{kj}\right). \quad (3.2)$$

The first part of the right-hand side in Equation 3.2 indicates the effect of time. T_{kjt} is the number of weeks passed since the beginning of promotion k by vendor j in week t (T_{kjt} = 0,1,2,…). The corresponding parameter ($\gamma_1 < 0$) gives the decay rate. The exponential decay function together with $\gamma_1 < 0$ implies that the duration effect proportionally declines over time and therefore does not change sign.

The three variables on the right hand side of Equation 3.2 are dummy variables indicating whether the promotion is of a specific size and medium. The corresponding parameters are $\gamma_2, \ldots, \gamma_4$. The dummy variables are specified as follows:

LV_{kj} = promotion k by vendor j has a large volume (larger than median promotion of the same vendor).
MP_{kj} = promotion k by vendor j uses the post-only medium.
MEP_{kj} = promotion k by vendor j uses both post and e-mail.

The parameter θ_j denotes a vendor-specific effect. This vendor-specific effect captures possible differences in the promotion effects across vendors (e.g., due to differences in brand equity across vendors). The effects of the above-mentioned characteristics of a promotion are all relative to this vendor-specific effect. The parameter θ_j can also be interpreted as a benchmark effect for vendor j. In the case that all promotion dummies are zero, Equation 3.2 implies that the effect of the promotion in the first week equals θ_j. This setting for the dummy variables corresponds with small promotions that are sent via e-mail. As we are primarily

interested in overall effects of the MVLP (rather than particular effects of one promotion on one vendor), we restrict the coefficients of the dummies across vendors.

The effects of joint promotions are specified analogous to Equation 3.2, with the difference that no joint promotions were sent only through post, so the effects of e-mail and combined channels are assessed for joint promotions. Because this specification is analogous we do not state the exact equation here.

In line with the effects of promotions of the vendor itself, for the cross-vendor effect of promotion k by vendor s at time t on the performance of vendor j, we specify the following:

$$\delta_{kst} = (e^{\gamma_1 T_{kst}})(\omega_s + \pi_2 LV_{ks} + \pi_3 MP_{ks} + \pi_4 MEP_{ks}). \tag{3.3}$$

Although we allow for a different impact of the promotion characteristics, for reasons of parsimony, we impose the same decay rate as for the own effects.

3.4.4 Full Model

To deal with possible autocorrelation, we explicitly allow for serial correlation in the error terms. We specify autoregressive processes of order 1 [AR(1)] for the error term as follows:

$$\varepsilon_{jt} = \rho_j \varepsilon_{jt-1} + \varepsilon^*_{jt} \tag{3.4}$$

The error term ε_{jt}^* is assumed to be independent and identically distributed. The combination of Equations 3.1 and 3.4 gives a model that appropriately deals with autocorrelation without affecting the interpretation of the original parameters. Combining specified Equations 3.1 and 3.4 gives

$$\begin{aligned} lnLP_{jt} = {} & \alpha_j + \sum_{k=1}^{K_j} \beta_{kjt} IM_{kjt} + \sum_{i=1}^{I_j} \varphi_{ijt} JM_{ijt} + \sum_{s \neq j} \sum_{k=1}^{K_s} \delta_{kst} IM_{kst} + Z_{jt}{}' \tau_j + \rho_j (lnLP_{jt-1} \\ & - \alpha_j - \sum_{k=1}^{K_j} \beta_{kjt-1} IM_{kjt-1} - \sum_{i=1}^{I_j} \varphi_{ijt-1} JM_{ijt-1} + \sum_{s \neq j} \sum_{k=1}^{K_s} \delta_{kst-1} IM_{kst-1} \\ & + Z_{jt-1}{}' \tau_j) + \varepsilon^*_{jt} \end{aligned} \tag{3.5}$$

For estimation purposes, we combine Equation 3.5 with the definitions of the effect sizes, as given in Equations 3.2 and 3.3 for the points issued. The result is a system of equations

(seemingly unrelated regressions [SUR]) estimated using iterated feasible generalized least squares (Zellner 1962). Since all five vendors belong to the same coalition LP and we believe that vendors' performance within the program is interrelated, it is appropriate to use the model that acknowledges this connection between vendors.

3.5 Results

3.5.1 Effects of Vendors' Sales Promotions on Spending Patterns

For most of the five vendors, we found that analyzed LP promotions do not have a significant impact on aggregate sales to cardholders, that is, on the number of loyalty points issued (see Tables 3.2 and 3.4). The benchmark promotions (small, direct sales promotions sent by e-mail) have a significant impact on the performance measure only for the department store (vendor 5). This may suggest that retailers with relatively larger assortment benefit more from own direct sales promotions in the MVLP.

Table 3.2 Effects of individual versus joint promotions on vendors' performance

	Log number of loyalty points issued			
	Individual promotions		**Joint promotions**	
Explanatory variable	Est.	*t*-value	Est.	*t*-value
Decay rate (γ_1)	-5.850	-0.027	-5.850	-0.027
Benchmark for grocery retailer (θ_j)	-0.010	-0.322	-0.014	-0.437
Benchmark for electronics retailer(θ_j)	n.a.	n.a.	0.033	0.652
Benchmark for DIY retailer (θ_j)	0.001	0.025	0.011	0.364
Benchmark for petrol retailer (θ_j)	-0.023	-1.370	-0.0004	-0.025
Benchmark for department stores (θ_j)	0.214***	3.629	0.054	0.550
Large volume (γ_2)	0.021	1.518	-0.025	-1.056
Post only (γ_3)	0.016	1.008	n.a.	n.a.
E-mail+post (γ_4)	0.129***	2.468	0.038	1.450

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

Notes: n.a. = vendor did not use the selected category in the observed period. The decay rate is restricted to be equal for individual and joint promotions.

Moreover, the results in Table 3.2 show that the effectiveness of a vendor's own promotions does not differ significantly with volume of promotion. Large-volume promotions do not have a significant greater effect than smaller-volume promotions. The only significant effect of promotions we found was for promotions that used multiple communication channels.

Using an integrated communication through e-mail and post (direct mailing) gives a significantly larger effect of promotions on the number of loyalty points issued. Across the analyzed vendors, joint usage of the e-mail and post in individual sales promotions increases the effect on the number of loyalty points issued in the first week of a promotion by about thirteen percentage points. This effect cannot be attributed to a larger part of the cardholders being reached with multiple channels, as we explicitly correct for the volume of the promotion. However, the same effect is not present in joint promotions. The decay rate indicates decreasing effectiveness (contribution) of a promotion over time (Table 3.2).[4]

For example, Figure 3.1 illustrates the contributions of different communication channels for vendor 5. The effect of sales promotions that used e-mail and post (E-mail&Post series) is considerably greater than the effect of promotions using only post (the Post Only series) or only e-mail (the E-mail Only [benchmark] series). However, the effects of a promotion decline rapidly after the issuance week and die out by the second week.

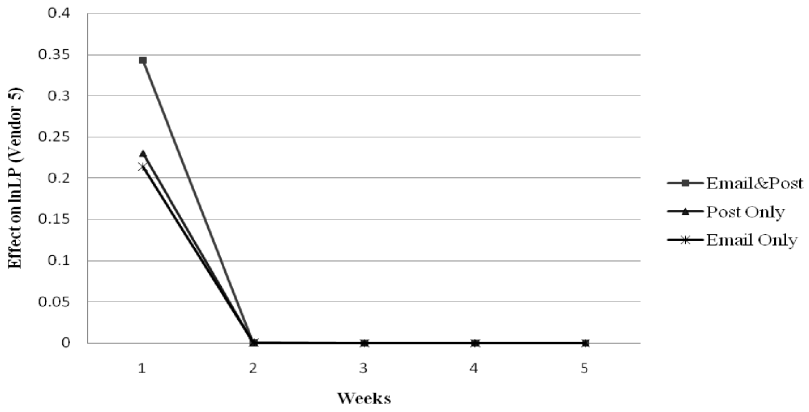

Figure 3.1 Effects of different communication channels on the loyalty points issued over time (an example for vendor 5, small promotions)

Table 3.3 shows the impact of the adjustment variables as well as the adjusted R^2 per equation. The results show a satisfactory explanatory power of the individual equations in the model. Interestingly, only very substantial changes in issuance policies (e.g., giving half a loyalty point per euro spent) have a significant (negative) impact on vendors' issuance of

[4] The fact that the estimated decay parameter is quite large but not significantly different from zero may be counterintuitive. The decay rate of –5.8 implies that there is only a direct effect. Note that $\exp(-5.8*t)$ equals 1 for $t = 0$ and approximately 0 for $t = 1,2,3\ldots$. Because of the exponential transformation, the function of the (generalized) sum of squared errors in the SUR procedure is almost flat in this region of the decay rate. This results in a relatively large standard error and a small t-value for this decay rate.

loyalty points. Vendors 3 and 4, which introduced less drastic policy changes, did not experience negative effects on their approximated sales. Jointly, the results indicate overall habitual (inertia) behavior of existing cardholders, who tend to follow their regular purchase patterns.

Table 3.3 Vendor-specific adjustment effects and explained variance

Vendor/Variable	*Log number of loyalty points*				
	V1	V2	V3	V4	V5
Policy change	n.a.	-0.53***	-0.04	-0.03	-0.83***
Seasonal peaks	0.21***	0.61***	0.25***	n.a.	1.03***
Seasonal dips	-0.09***	n.a.	-0.32***	-0.12***	-2.97***
Autocorrelation ρ	0.68***	0.28***	0.45***	0.73***	0.37***
Adj. R^2	0.62	0.63	0.49	0.62	0.81

***$p < .01$. **$p < .05$. *$p < .10$;
Notes: n.a. = not applicable.

3.5.2. Coalition Benefits in Multi-vendor Loyalty Programs

The analysis shows no evidence of coalition benefits in the MVLP. If coalition synergies would occur, then across all vendors, joint promotions should have a significant impact on

Table 3.4 Cross-vendor effects of individual promotions

Cross-vendor effects	*Log number of loyalty points*	
Explanatory Variable	Est.	*t*-value
Benchmark for grocery retailer (ω_j)	-0.023	-0.852
Benchmark for electronics retailer (ω_j)	n.a.	n.a.
Benchmark for DIY retailer (ω_j)	-0.008	-0.567
Benchmark for petrol retailer (ω_j)	0.003	0.226
Benchmark for department stores (ω_j)	0.008	0.597
Large volume (π_2)	0.006	0.631
Post only (π_3)	0.003	0.221
E-mail+post (π_4)	-0.008	-0.533

***$p < .01$. **$p < .05$. *$p < .10$.
Notes: n.a. = vendor did not use the selected category in the observed period.

members' spending patterns, and this impact should be greater than the impact of individual promotions. The comparison of the results for individual and joint promotions in Table 3.2 indicates that joint promotions are less effective than promotions that feature solely the focal vendor (individual promotions). Moreover, there are no significant cross-vendor effects of promotions of coalition partners on the performance of the focal vendor (see Table 3.4). It seems that neither volume nor communication channel significantly affects cross-vendor effects of promotions of other vendors in the coalition on the performance of focal vendor (in Table 3.4).

3.6 Robustness Checks

Because the finding of insignificant effects of LP-related promotions may seem surprising, we conducted several additional analyses to check the robustness of the findings.

First, to account for the potential effects of the value of a promotion, we consider a model that uses an approximation of the promotion value instead of a dummy variable for IM_{kjt}, JM_{ijt}, and IM_{kst} in Equation 3.5. The value of a promotion is approximated by how many more additional points a cardholder obtains in the promotion relative to nonpromotional periods. For example, if a promotion offers one hundred additional points for spending ten euros at some vendor (and the points ratio is one point for each euro spent), then the promotion offers ten times more points than the cardholder would obtain otherwise. Promotion values ranged from two to thirty times more points and differed across vendors. In the new estimations, we used the natural logarithm of the approximated value of the promotion instead of the promotional dummies. As the value approximation is not always straightforward, and for some promotions the complete information is lacking, we report the original findings as the main results and briefly report the findings of this additional analysis. Overall, estimations in this specification give full support to the original results (ruling out the lack of variation as a possible methodological bias). Again, only the benchmark for department stores had a significant effect on the number of issued points (coefficient = 0.115, t = 4.85). Although of the right sign, the effect of e-mail and post is not significant at the 95 percent significance level (coefficient = 0.026, t = 1.488) in this specification. This is due to the previously explained difficulties in value approximation.

Second, joint promotions may differ with respect to the number of participating vendors. To account for this explanation, we included the number of participating vendors as an additional explanatory variable. The number of vendors that participated in a joint action

does not have a significant effect on the number of collected points (coefficient = –0.001, t = –0.458).

Finally, although promotions may not affect spending levels of cardholders, they may attract more cardholders to stores. Therefore, we conducted the same set of analyses on the natural logarithm of the (weekly) aggregate number of cardholders attracted to stores of analyzed vendors. The estimations showed the same substantive results of insignificant effects of LP related promotions and the lack of spillover effects across vendors.[5]

3.7 Discussion

The findings of this study indicate that, in general, vendors' sales promotions in an MVLP do not change the aggregate patterns of cardholders' purchase behavior. That is, MVLP cardholders use their cards in regular purchases and collect loyalty rewards for them. However, they generally do not change their purchase behavior to respond to LP promotions. Indeed, Leenheer and colleagues (2007) found that neither the discount nor the savings feature of LPs significantly affect cardholders' behavior once they are enrolled in an LP. We emphasize here that our findings do not indicate the lower effectiveness of MVLP relative to LPs of a single vendor, as we do not possess the data to compare the effects across diverse LP types. Keeping that in mind, we further explore possible explanations for the obtained results. The lack of significant impact on cardholders' behavior may be due to a low perceived value of promotions (Nunes & Dreze 2006a; Consumer Reports 2008). If customers do not particularly value a promotion, then the promotion will not induce customers to change their usual patterns of behavior in response to the promotion. The most common direct sales promotions in LPs feature additional loyalty point promotions, in which, for example, cardholders may obtain three hundred additional loyalty points for thirty euros spent at the focal vendor). Such a promotional offer may not provide sufficient value to make cardholders purchase more than planned or to attract cardholders who do not usually purchase at the focal vendor. This may be especially true for purchases of petrol, electronics, or do-it-yourself goods.

Furthermore, two other underlying mechanisms may provide substantive bases for understanding the findings.[6] The first potential explanation is the ease with which cardholders

[5] Details on the additional analyses are available upon request.

[6] We are grateful to co-editor of *Marketing Letters*, Joe Urbany, for pointing out these alternative, substantive explanations.

can translate the obtained points into euros and/or purchase outcomes (Kwong, Soman & Ho 2010). The second related explanation is perceived effort (i.e., inconvenience and thinking costs) of redeeming points. The main question that these explanations aim to answer is whether loyalty points are a pallid currency in the minds of consumers because consumers exert little effort in processing information about the LP and its possible benefits. To explore these issues, we analyzed cardholders' responses to two surveys that the MVLP administered in 2007 and 2008 (sample sizes 274 and 1392, respectively). The surveys revealed that loyalty points may indeed be a pallid currency in consumer minds when consumers are not fully aware or when it is not easy for them to translate loyalty points to a monetary equivalent (Kwong, Soman & Ho 2010). On a question of what respondents think is the value of one loyalty point (in euros), 43.5 percent of respondents (N = 1392) were unaware of the exact points-ratio value and chose a "wrong" answer among several offered amounts (which differed substantially and ranged from 0.01 eurocent to more than 1 euro). This suggests that consumers exert little effort in processing information about the LP and its possible benefits. The reason for such a lack of engagement can be a high perceived effort and/or inconvenience to obtain benefits of the analyzed promotions. Namely, the additional points are not awarded automatically to a cardholder at a point of purchase; instead, the cardholder has to print out a coupon beforehand from the Internet or obtain it through post. Although this practice is used to increase engagement of cardholders with the MVLP, the required effort may diminish the effectiveness of promotions. In a survey of 274 cardholders, respondents indicated that they would prefer direct discounts to promotional offers of additional loyalty points (only 12.8 percent of respondents chose additional points as the preferred type of promotion).

We do, however, find that the effectiveness of individual promotions in the MVLP is enhanced if multiple communication channels are used jointly to present a promotion. In this way, we find support for the effectiveness of integrated marketing communication (Schultz 1996; Naik & Raman 2003). This finding suggests that, in cases when cardholders are not prone to exert effort in processing information and requirements of an LP, joint types of media may be more effective at encouraging response.

A particularly important dimension of MVLPs concerns coalition benefits between program partners. Our findings show no empirical support for the existence of significant coalition benefits among vendors in an MVLP. Joint promotions that feature offers of several vendors in the coalition are relatively less effective than promotions that feature individual vendors. The reason may be that instead of reinforcing the usage of the program at several

vendors to collect points faster, joint offers promote comparison across deals and a division of purchases across vendors (Dowling & Uncles 1997). In addition, the cross-vendor effects are not substantial. Given the limited effectiveness of marketing promotions on own performance measures, the insignificance of cross-vendor effects is to be expected, as cross-effects should be smaller than the own-promotion effects (Leeflang et al. 2008).

3.8 Limitations and Further Research

This study analyzed a single MVLP, and although its design and vendor types represent the typical multi-vendor scheme, replications of this study are needed to reach general conclusions. Because our data refer to only one MVLP, we have focused primarily on the promotional effects in the MVLP rather than on benefits of MVLPs themselves or their effectiveness relative to other types of LPs (e.g., single-vendor LPs). A preferred approach to analyzing the effectiveness of LP-related promotions (relative to other types of promotions) would be to compare the effects of individual promotions by each vendor outside of the MVLP (i.e., the effectiveness of non-LP-related promotions) with the effects of individual promotions in the MVLP. Furthermore, a clearer picture could be obtained with information on other marketing activities that focal vendors run simultaneously, like price promotions and other activities.

Our database provided aggregate performance measures per vendor. Individual data on customer behavior would allow for important additional insights. First, we could not assess differences in behavior of LP cardholders versus nonmembers. The behavior of both groups of customers has important implications for vendors' performance (van Heerde & Bijmolt 2005). Second, aggregate measures cannot explain the heterogeneity that exists across cardholders in the MVLP. Finally, although we assessed the effectiveness of promotions, we cannot say anything about their efficiency because we lack cost data.

CHAPTER 4
EFFECTS OF REWARDING IN A CONTINUOUS LOYALTY PROGRAM: DOES REWARD REDEMPTION MATTER?

4.1 Introduction

Loyalty (or reward) programs (LPs) have become prominent customer-relationship-building tools in many markets (Nunes & Dreze 2006a; Ferguson & Hlavinka 2009). The aim of LPs is to engage cardholders by rewarding them for repeatedly purchasing a firm's product or service (Sharp & Sharp 1997; Taylor & Neslin 2005). Typically, proportional to their participation in the LP (e.g., cumulative spending, profitability), LP members are awarded reward currency (points) that they can redeem for various products or services or preferential treatment benefits (as in customer-tier LPs like frequent-flier programs).[7] Coffeehouses award free coffee after a certain number of coffees purchased; supermarkets reward their retail cardholders with various merchandise, airlines reward travelers with free flights or upgrades to a higher class after accumulating some level of purchases (miles). Yet significant amounts of loyalty points remain unredeemed, which creates liabilities for LP providers (Shugan 2005) and raises the fundamental question of whether reward redemption matters. Although existing research has largely investigated the attractiveness of diverse reward types and their impact on profitability (Zhang, Krishna, & Dhar 2000; Kim, Shi, & Srinivasan 2001; Kivetz & Simonson 2002), an important gap in the knowledge exists on the effects of reward redemption on LP cardholders' purchase behavior (Mauri 2003; Liu 2007; Smith & Sparks 2009a, 2009b). Does rewarding drive changes in cardholders' purchase behavior or are rewards considered by-products of purchase behavior, with no discernible impact on regular purchase patterns?

For LP members, reward redemption is the most tangible aspect of LP membership, as benefits of LP participation become most salient at the moment when the member receives the actual reward (Nunes & Dreze 2006; Smith & Sparks 2009a). Therefore, the decision to redeem an LP reward may increase the salience of the LP, which in turn may affect cardholders' purchase behavior. Reward redemption behavior may, therefore, have an important impact on cardholders' responses to an LP.

[7] We use the terms *cardholder* and *LP member* interchangeably.

The literature suggests that LPs can influence cardholders' behavior through three main mechanisms related to LP rewarding (Blattberg, Kim & Neslin 2008). The prospect of receiving a reward in an LP may motivate cardholders to increase their expenditures in periods before they obtain the reward (Nunes & Dreze 2006; Kivetz, Urminsky, & Zheng 2006). This increase to collect a sufficient amount of points to earn the reward is known as the points-pressure mechanism (Taylor & Neslin 2005; Blattberg, Kim & Neslin 2008). Subsequently, redeeming the reward may increase cardholders' purchase rates, as rewarding enhances feelings of gratitude, importance, satisfaction, or/and obliged reciprocity for receiving the reward (Kumar & Shah 2004; Taylor & Neslin 2005; Palmatier et al. 2009). This phenomenon is known as the rewarded-behavior mechanism. Finally, the provision of what Blattberg, Kim & Neslin (2008: 551) termed *personalized marketing efforts to members* may influence members' purchase behavior. Examples of these efforts include targeted promotions to LP members, cross-selling and/or up-selling efforts, and personalized customer service. The underlying idea is that LP members who experience point pressure are more receptive of sales promotions, direct mailings, and other forms of personalized marketing efforts (e.g., cross- and up-selling) that bring them closer to obtaining a reward (Lewis 2004; Kivetz, Urminsky, & Zheng 2006).

In essence, all three LP mechanisms are related to rewarding within an LP. Points pressure and rewarded behavior are underlying drivers of pre-rewarding and post-rewarding effects on purchase behavior, respectively. Besides direct effects on purchase behavior, personalized marketing mechanism may enhance overall rewarding effects, particularly through its influence on pre-rewarding behavior. To date, researchers have provided evidence mainly for pre-rewarding effects in experimental and empirical studies of short-term LPs in which members had to reach a spending threshold in a time-limited period to obtain a prespecified reward (e.g., "buy ten coffees, get one free") (Lal & Bell 2003; Taylor & Neslin 2005; Kivetz, Urminsky, & Zheng 2006). However, many LPs are continuous rather than short term (e.g., various retail LPs, frequent-flier programs). In continuous LPs, cardholders typically earn a reward currency (points) after each purchase (e.g., one loyalty point for each euro spent), they can collect points for years, accumulated points do not expire in principle, and there is a plethora of possible reward redemption choices (Consumer Reports 2008; Loyalty Card 2010). Therefore, Blattberg, Kim and Neslin (2008: 566) suggested that points pressure would not occur in this situation. Nevertheless, the initial empirical evidence indicates existence of rewarding effects in continuous LPs (Kopalle et al. 2006; Liu 2007), but it is not clear whether the effects occur systematically or what the drivers are of

rewarding effects in continuous LPs. Moreover, the evidence on effects of personalized marketing mechanism in LPs is scarce, and a systematic analysis of all three mechanisms and their interactions is largely lacking (Blattberg, Kim & Neslin 2008).

The purpose of this study is to further investigate whether reward redemptions have an effect in a continuous LP. We state the following general research questions: (1) Do pre-rewarded-behavior effects occur in continuous LPs? (2) Do post-rewarded-behavior effects occur in continuous LPs? (3) Can personalized marketing efforts enhance the two rewarding effects? We develop a congruent theoretical approach for analyzing the reward redemption effects based on theories in consumer psychology, particularly the literature on goal attainment and behavioral mind-sets in goal-directed activities (Hull 1932; Gollwitzer & Bayer 1999; Wyer & Xu 2010). On the basis of those theories, we suggest that mere *redemption momentum* (decision to redeem a reward) may increase motivation (salience) in the LP, thus resulting in an increase in purchase behavior, even if the points-pressure effect would not occur. In other words, once members cross the mental hurdle of whether or not to redeem, their behavioral mind-sets shift toward implementation and completion of the decision, which increases their motivation to adhere to the goal and therefore makes subsequent purchases more likely (Koo & Fishbach 2008; Wyer & Xu 2010). Redemption momentum complements the strictly rational perspective of points-pressure theory in which members evaluate benefits of a specific reward against switching and sunk costs and feel pressured "to accumulate the required sales levels or 'points' to earn it" (Taylor & Neslin 2005: 294). We provide evidence that reward redemption effects (increases in purchase behavior) are driven by the redemption momentum itself (i.e., they occur in a continuous LP even when members do not experience explicit switching costs, because they have sufficient points). Fundamental to understanding rewarding effects in frequently used continuous LPs is the intuitive rationale of points collecting and redemption mechanisms in this context. Rather than thinking ahead about how much more they have to purchase to obtain a reward (points pressure), customers in continuous LPs often accumulate points as by-products of purchasing. Then, in looking at their collected points, they eventually decide to redeem a reward. This decision may subsequently heighten awareness and/or motivation in the LP through increased salience of the program, which reinforces goal-related activities (i.e., purchase behavior). Therefore, it is not only the lack of goal progress that increases motivation to purchase (i.e., the points pressure), but also goal commitment and completion motivation (Koo & Fishbach 2008; Ferguson 2008).

Beyond studying the main effects of rewarding, we also explore whether reward redemption effects differ across important moderators: diverse types of rewards and individual differences (e.g., spending levels, attitudinal involvement, sociodemographic characteristics). Exploring the effects of such moderators on the effectiveness of described LP mechanisms provides important insights in the robustness and the strength of the redemption momentum effects (i.e., pre-rewarding and post-rewarding effects).

The remainder of this chapter proceeds as follows. First, we review prior research relevant to understanding the factors influencing effects of reward redemption in an LP and the effectiveness of the related LP mechanisms. Second, we elaborate on the theoretical underpinnings of what we termed *redemption momentum*, and develop our framework and related hypothesis. Third, we analyze the existence of reward redemption effects in a continuous LP. We conclude by elaborating on the findings of the analysis and implications of the results for both academicians and practitioners.

4.2 Prior Research

This section reviews prior research on several aspects important for understanding the effects of reward redemption within continuous LPs. It begins with an overview of general effects of continuous LPs on cardholders' purchase behavior. Next, we review relevant research on the LP mechanisms as drivers of LP effects. Finally, a survey of literature on moderating effects of reward type and individual traits on the effectiveness of LP mechanisms is provided.

4.2.1 Effects of LP Membership on Cardholders' Purchase Behavior in Continuous LPs

Although research into the effects of LPs is quite substantial, significant still dispute exists over the effectiveness of LPs and their overall ability to enhance customers' purchase behavior (Sharp & Sharp 1997; Shugan 2005; Lacey 2009). The finding that LP cardholders have greater behavioral and attitudinal loyalty than nonmembers does not by itself prove the causal effects of LP participation, because loyal customers are prone to a self-selection into LPs (Leenheer et al. 2007; Meyer-Waarden & Benavent 2009). However, longitudinal studies that accounted for bias still found that cardholders in continuous LPs increase their purchase behavior over time (Magi 2003; Verhoef 2003; Lewis 2004, Meyer-Waarden 2007; Leenheer et al. 2007; Liu 2007; Meyer-Waarden & Benavent 2009; Liu & Yang 2009). These studies measured purchase behavior by changes in purchase volume, purchase incidence and/or

frequency, and share-of-wallet (SOW). The greatest increase in purchase frequency and volume was found within few months of the introduction of an LP (Liu 2007; Meyer-Waarden & Benavent 2009).

4.2.2 Prior Research on Pre-rewarding and Post-rewarding Effects

Empirical support for pre-rewarding effects comes primarily from short-term LPs. These effects have been found both in experimental (Kivetz, Urminsky, & Zheng 2006; Nunes & Dreze 2006; Koo & Fishbach 2008) and empirical studies (Lal & Bell 2003; Taylor & Neslin 2005). The experimental studies found that customers increase their purchase frequency as they get closer to receiving a reward (e.g., in the "buy ten coffees, get one free" setting; Kivetz, Urminsky, & Zheng 2006; Nunes & Dreze 2006). Empirical studies, however, compared average aggregate or individual sales levels before the beginning of reward program promotions (short-term LPs) to the sales levels during the program periods and found that sales increased in the program periods leading up to the reward (Lal & Bell 2003; Taylor & Neslin 2005). Taylor & Neslin (2005: 294) concluded that the increase in purchase frequency and spending occurred because of the pressure to "accumulate the required sales levels or points" to earn the reward, suggesting support for the points-pressure mechanism.

Evidence of post-rewarding effects in short-term programs is less prominent. Only a few studies have analyzed the effects, with mixed findings. Kivetz, Urminsky, and Zheng (2006) found no support for post-rewarding effects (i.e., respondents' purchase frequencies returned to their baseline levels after reward redemption), but some studies have found significant positive post-rewarding effects on purchase behavior, albeit only among light users (Roehm et al. 2003; Lal & Bell 2003; Taylor & Neslin 2005).

Relative to short-term LPs, empirical evidence of reward redemption effects in continuous programs is scarce; we identified only two empirical studies. Those studies formulated dynamic structural models in which customers take into account future benefits of rewarding in their current decision making and may therefore be susceptible to points pressure (Lewis 2004; Kopalle et al 2006). In an online grocery and drugstore retailer LP, Lewis (2004) found that the probability of purchase increases among LP members who are likely to qualify for redeeming a reward as time remaining to earn the reward decreases. The retailer in this case exogenously defined the rewarding, as members were assumed to have automatically obtained the reward as soon as their purchases crossed the reward threshold levels (if a member accumulated expenditures that reached specified threshold levels in a year, he or she would receive a reward of five hundred frequent-flier miles). The increase in

purchase incidence rate toward the end of a year could be attributed to the points-pressure effect, as after this period, the accumulated reward points would expire, and the effect was found only among those members who were likely to qualify for the reward before its expiration ($900 accumulated of $1,000 needed for a reward).

The second empirical study analyzed reward redemption effects in an airline frequent-flier program in which members could choose between redeeming a free flight or an upgrade and reaching a higher customer tiers in the airline's customer tiers LP (Kopalle et al. 2006). This is the first study to analyze the member's decision of whether or not to redeem a reward. Initial findings of this study show that the probability of flying with the airline for frequent business travelers increases with the proximity of obtaining a reward (particularly with respect to reaching a higher customer tier). However, the probability differed substantially across customer segments and types of rewards (flights versus customer-tier benefits), the moderators of which are further discussed subsequently. Furthermore, Kopalle et al. (2006) found positive post-rewarding effects across all rewarded members, which increase members' utility for flying in the short periods after reward redemption. Kopalle et al. (2006) attributed the effects to the rewarded-behavior mechanism.

Overall, the pre-rewarding effects seem more substantial than the post-rewarding effects (Taylor & Neslin 2005; Kopalle et al. 2006). In short periods before reward redemption, LP members tend to gradually increase their purchase behavior with the proximity of redemption (Lewis 2004; Kopalle et al. 2006; Kivetz, Urminsky, & Zheng 2006). Less strong evidence exists for the post-rewarding behavior, and available studies substantially differ regarding the size and persistence of the rewarded-behavior effect, from up to seven weeks (Taylor & Neslin 2005) to a very short-term impact of only one or two time periods (Kopalle et al. 2006).

Finally, scarce empirical evidence exists of the effectiveness of personalized marketing mechanisms in LPs. However, general marketing literature provides strong support for the notion that by using a wealth of data that LPs provide, firms may enhance customer purchases through the provision of personalized marketing offers, tailored communication (e.g., direct mailings), and preferential treatment (Verhoef 2003; Kumar & Shah 2004; van Heerde & Bijmolt 2005; Rust & Verhoef 2005; Kumar & Reinartz 2006; Lacey, Suh, & Morgan 2007). Similarly, important synergies may exist between personalized marketing efforts (e.g., direct mailings, cross-selling) and LP mechanisms (Lewis 2004; Blattberg, Kim & Neslin 2008). The interaction effects may occur through increases that sales promotions and/or mailings exhibit on purchase behavior of LP members (Dreze & Hoch 1998; Sharp &

Sharp 1997; Mauri 2003; Lewis 2004; Kim et al. 2009). Moreover, LP members, particularly those with higher levels of loyalty, are prone to broaden the relationship with a firm through cross-buying of a firm's products (Meyer-Waarden 2007; Lemon & von Wangenheim 2009). Therefore, positive effects of personalized marketing mechanisms in LPs can be seen through cross-selling effects, which are particularly relevant in LP designs with multiple partners (i.e., coalition or multi-vendor LPs, or MVLPs). Lemon and von Wangenheim (2009) found that customer usage and satisfaction with a core LP service increases cross-buying from partners in an MVLP, which in turn reinforces future usage of the core service.

We summarize the available findings and position our research in Table 4.1. Although most studies have analyzed either purchase incidence or spending behavior, our study examines the effects of rewarding on both aspects of purchase behavior in a continuous LP. Moreover, we analyze effects of all three LP mechanisms and explore the impact of both direct mailings and cross-purchasing in the personalized marketing mechanism. Finally, our study explores moderating effects of several aspects of individual traits and the reward type.

Table 4.1 Overview of available findings and positioning of our study

	Study	Design	Purchase incidence	Spending levels	Pre-rewarding effects	Post-rewarding effects	Personalized marketing	Moderators of rewarding effects
Short-term LPs	Kivetz, Urminsky, & Zheng (2006)	Experimental	✓	×	+	–	+Mailings	×
	Nunes & Dreze (2006)	Experimental	✓	×	+	×	×	Effect stronger if presented in earned points (vs. purchases)
	Lal & Bell (2003)	Empirical	×	✓	+	+	×	Effects strongest for low baseline spenders
	Taylor & Neslin (2005)	Empirical	×	✓	+	+	×	Effects strongest for low baseline spenders
Continuous LPs	Lewis (2004)	Empirical	✓	Discretized basket size	+	×	+Prom. mail	Effects strongest for high spenders + Promotional mailings
	Kopalle et al. (2006)	Empirical	✓	×	+	+	×	+ Reward type (customer tier vs. utilitarian)
	This study	Empirical	✓	✓	✓	✓	Prom. mail Cross-buying	Reward type Attitudinal involvement Spending levels

Notes: ✓analyzed effect; × effect not directly assessed; + positive effect; – negative or insignificant effect.

4.3 Conceptual Model and Hypotheses

Figure 4.1 presents the conceptual framework of the effects of an LP on cardholders' purchase responses. Following the process view that Blattberg, Kim and Neslin (2008) depict, the framework illustrates how, through three explained LP mechanisms, a reward redemption may affect cardholders' purchase incidence and spending. Typically, members obtain LP currency for purchases at an LP provider that they can redeem for rewards. If effective, reward redemption may enhance purchase incidence and/or spending in weeks before and/or after the redemption. Moreover, in addition to its direct effect on purchase behavior, personalized marketing mechanisms (e.g., direct mailings, cross-buying) may enhance the effects of rewarding. Finally, it is important to account for individual differences across cardholders, as rewarding effects may depend on customer and reward characteristics.

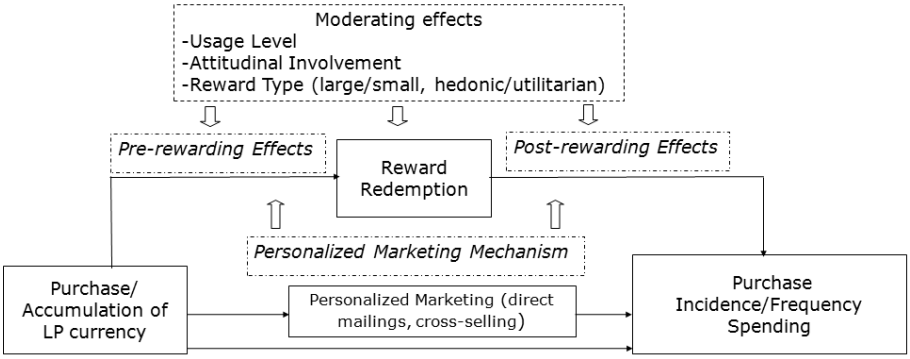

Figure 4.1 LP effects on cardholders' responses (based on Blattberg, Kim & Neslin 2008: 550)

4.3.1 Pre-rewarding Effects

Pre-rewarding effects are believed to be driven by cardholders' forward-looking with respect to future rewards and switching costs, which induce points pressure to collect a sufficient amount to redeem a reward (Lewis 2004; Taylor & Neslin 2005). An interesting question is, What would happen if switching costs do not occur? In other words, for the pre-rewarding effects to occur, is it necessary that a customer has insufficient LP points and needs to accelerate purchases to not "lose" the reward? In numerous continuous LPs (e.g., in retail settings), members collect points regularly on a weekly or monthly basis; on the basis of accumulated points, they eventually decide to redeem some reward (but the accumulated

points do not expire and members themselves may decide which reward and when to redeem) (Consumer Reports 2008, Clark 2008). In this case, it is not likely that switching costs would occur (in a more general context, Hartmann and Viard (2008) found that most LP members are not likely to experience significant switching costs). Hence, the economic rationale for pre-rewarding effects is lacking; we thus might assume an absence of the pre-rewarding behavior effect.

Consumer psychology, however, provides deeper insights into motivational drivers and arguments for why this effect may still be present. Obtaining a reward in general relates to goal-attainment effects, and a motivational strength to reach the goal increases as distance from the goal decreases (Hull 1932; Förster, Higgins, & Idson 1998). Therefore, once members decide to redeem a reward, they internally set the goal and switch to a behavioral mind-set that promotes the implementation and completion of that goal (Gollwitzer & Bayer 1999; Wyer & Xu 2010), even if they are not fully conscious of the goal-setting process (Ferguson 2008). This "switch" from deliberation to implementation motivates members to pursue goal-related behavior (which makes subsequent purchases more likely) and to endow or persist more in this goal-directed behavior (Gollwitzer & Bayer 1999; Dhar, Huber, & Khan 2005; Nunes & Dreze 2006b). In other words, as members realize that their purchase behavior is instrumental in achieving a positive outcome, they become more likely to engage in the behavior, and therefore reward attainment can direct behavior and induce effort (Latham & Locke 1991; Eisenberger & Rhoades 2001). We term this impact of rewarding *redemption momentum*, for which we find much support in consumer psychology. The redemption-momentum notion contrasts with the rational perspective of deliberative cost-benefit evaluation, as adoption of an implemental mind-set to redeem a reward in subsequent actions leads members to focus on means to attain the goal (i.e., receive reward for purchasing with the vendor) without considering again whether to do so (i.e., should I redeem or not?). In a series of experiments, Dhar, Huber, and Khan (2007) found support for a similar shopping momentum effect where merely inducing an initial purchase enhances the propensity of subsequent purchases. Xu and Wyer (2007, 2008) demonstrated that respondents who have made a decision to choose among options in a previous stage (even for completely unrelated decision tasks) in subsequent decision making reapply that (which to choose) mind-set without considering the option of not making a purchase at all (whether to purchase).

In the LP setting, similar conclusions can be drawn on the basis of Nunes and Dreze's (2006b) evidence of endowed progress effects. Providing customers with an illusion of

progress (a twelve-point card with two awarded points versus a ten-point card) also gives the illusion that the task has been undertaken and is incomplete rather than not yet begun. This belief increases customers' commitment toward completing the task (filling the cards) and "provides momentum that endures as people are motivated by the idea of finishing what one starts" (Nunes & Dreze 2006b: 505). These findings are consistent with the notion that, once LP members feel they have made the decision to redeem a reward, they acquire an implemental mind-set. Therefore, redemption momentum may increase their motivation and consequently their purchase behavior, regardless of the amounts previously collected. The motivation to complete what they have started is the driving force behind individuals' persistence in investing to reach the goal, which may endure even when investing becomes economically unjustifiable (Garland & Conlon 1998; Boehne & Paese 2000; Nunes & Dreze 2006b). Moreover, to rule out alternative explanations of sunk-cost effects, reluctance to waste, and self-justification, Nunes and Dreze (2006b) showed that persistence in LPs depends on perceived relative progress and not on the amount that would be lost by failing, thus showing that the pre-rewarding effect would occur regardless of points pressure. In conclusion, the proximity of LP reward attainment is expected to induce short-term lifts in purchase behavior (purchase incidence and spending) of members in a continuous LP. Given that purchase behavior can be measured with more than one metric, we follow existing empirical studies to consider effects on both purchase incidence (likelihood of purchase) and spending levels (Lewis 2004; Liu 2007; Kim et al. 2009; Smith & Sparks 2009a;). This leads to the following hypothesis:

> H_1: Anticipation of reward attainment in a continuous LP induces short-term lifts in (a) purchase incidence and (b) spending of LP members in the periods before the redemption.

4.3.2 Post-rewarding Effects

Reward redemption may enhance subsequent purchase frequency and volume either through increased affect, which in turn reinforces the attitudinal attachment of a member toward a firm (Engel, Blackwell, & Miniard 1995; Taylor & Neslin 2005; Palmatier et al. 2009) or through behavioral learning that repurchase leads to a reward, which subsequently reinforces rewarded behavior (Rothschild & Gaidis 1981; Taylor & Neslin 2005). A reward obtained through an LP can evoke a sense of getting a good deal or a windfall gain (Thaler 1985; Arkes et al. 1994; Smith & Sparks 2009b), a feeling of the firm's appreciation that evokes reciprocal feelings (gratitude) in customers (Gwinner et al. 1998; Palmatier et al. 2009), a

sense of belongingness (Dowling & Uncles 1997), and an elevated sense of status (Dreze & Nunes 2009). These findings suggest that reward redemption may induce positive post-rewarding effects through reinforcement of attitudinal attachment, which subsequently affects purchase behavior (Taylor & Neslin 2005; Blattberg, Kim & Neslin 2008). Still, the strength of the effect may depend on a cardholder's previous levels of loyalty, intrinsic motivation to be in a relationship and the type of reward (Roehm et al. 2002; Dholakia 2006; Keh & Lee 2006; Wirtz, Mattila, & Lwin 2007). Such increase in the post-redemption period (i.e., the rewarded-behavior effect) is instrumental in building long-term relationships with LP members (Kumar & Shah 2004; Taylor & Neslin 2005; Liu 2007; Smith & Sparks 2009a). The underlying rationale is that pre-rewarding effects may build up purchases because of reward anticipation, whereas the rewarded-behavior effect may sustain an increase in purchasing and dampen the fall in expenditures that would occur after redemption (Blattberg, Kim & Neslin 2008). However, dual mind-set theories of the hypothesized redemption momentum suggest that a switch from a deliberative to an implemental mind-set will persist, but subsequent effects will be of short duration. Initial findings of very short post-rewarded effects by Kopalle et al. (2006) seem to support this. Moreover, post-rewarding effects are weaker than the pre-rewarding effects in general (Taylor & Neslin 2005; Kopalle et al. 2006), which may be a result of their more attitudinal drivers (i.e., gratitude, feeling of appreciation). Therefore, we put forth the following hypotheses:

> H_2: Rewarding in a continuous LP increases cardholders' (a) purchase incidence and (b) spending in periods following reward redemption.
>
> H_3: Post-rewarding effects on (a) purchase incidence and (b) spending levels are weaker than pre-rewarding effects.

4.3.3 Effects of Personalized Marketing Efforts within an LP

There are several marketing tools that may enhance members' behavior in LPs, of which we particularly focus on effects of personalized promotional offers (mailings to LP members) and cross-buying opportunities. As Blattberg, Kim & Neslin (2008: 551) indicate, the personalized marketing "efforts are not rewards *per se* but merely the company making use of what it learns about customer preferences through a customer's participation in the program." However, little empirical evidence is available on which to base the hypothesis (particularly

with respect to the potential influence of the personalized marketing mechanism on rewarding effects).

Because short-term promotions increase purchases of LP members (Dreze & Hoch 1998; Mauri 2003; Kim et al. 2009), members who are close to obtaining a reward may be more receptive to promotional offers (e.g., coupons, sales promotions) (Lewis 2004; Kivetz, Urminsky, & Zheng 2006). This effect may be explained by the fact that mailings increase salience of rewarding in an LP and make redemption opportunities more tangible. At redemption, the benefits of being an LP member are the most salient (Nunes & Dreze 2006b; Smith & Sparks 2009a, 2009b). Although some members exhibit highly planned behavior of saving LP points for a particular redemption goal, others use rewards as self-gifts (Soman 1998; Kivetz & Simonson 2002; Smith and Sparks 2009a, 2009b). Therefore, mailings to LP members may encourage customers to purchase for the redemption (a reminder or salience effect) or to encourage customers who have decided to redeem some reward to choose which reward to redeem. In an experimental setting, Koo and Fishbach (2008) found that motivation in an LP can be increased if members are reminded of what they have accomplished to date, as well as by signaling how much more they have to accomplish to obtain the goal. Personalized mailings, therefore, are likely to increase motivation by reminding a member of his or her accumulated points, as well as by suggesting potential reward redemption, which increases awareness of how many more points the member has to collect. The mailing effect is likely to be more prominent in pre-redemption periods, but the positive effect of mailings may spill over to periods after redemption as well (albeit the effects should be weaker). Therefore, we posit the following:

> H_4: Mailings to LP members will increase members' (a) purchase incidence and (b) spending levels in short periods before redemption.
> H_5: Mailings to LP members will increase members' (a) purchase incidence and (b) spending levels in short periods after redemption.

Similarly, because of redemption momentum, members may become more receptive to firms cross-selling intentions. The effects of cross-purchasing may be particularly prominent in LP partnerships with more than one vendor, in which members accrue points for purchases at any partnering vendor (Berman 2006; Lemon & von Wangeheim 2009). Those LP members who cross-buy in the LP may exhibit stronger pre- and post-rewarding effects, as cross-buyers are more involved with the firm (and usually spend more across various products

and/or partners) and can complete the task and gain better or larger rewards more quickly. Because they progress more quickly toward task completion, their involvement with the task and desire to complete the task increase (Garland & Conlon 1998; Nunes & Dreze 2006b). The literature indicates that this effect would occur even when completion is well under way or becoming economically unjustifiable (Garland & Conlon 1998; Boehne and Paese 2000). Finally, previous empirical and theoretical evidence on interaction between cross-buying and post-rewarding is lacking. Using the same rationale of faster project (reward) completion, we postulate that, because of rewarding reinforcement effects (behavioral learning from the rewarding), cross-buyers experience stronger post-rewarding effects (Rothschild & Gaidis 1989). This leads to the following hypothesis:

H_6: LP members who cross-purchase in the LP exhibit stronger pre-rewarding effects on (a) purchase incidence and (b) spending levels.

H_7: LP members who cross-purchase in the LP exhibit stronger post-rewarding effects on (a) purchase incidence and (b) spending levels.

4.3.4 Potential Moderating Effects of Individual Differences and Reward Types

Members may respond differently to LPs depending on their usage level (Liu 2007; Kim, Shi & Srinivasan 2001), intrinsic motivation and attitudinal involvement with the LP provider (Bolton, Kannan & Bramlett 2000; Dholakia 2006; Wirtz, Mattila & Lwin 2007), and the type or perceived value of a reward (Kivetz & Simonson 2002; Kivetz 2003; Keh & Lee 2006).

Over time, light and medium users exhibit the greatest increases in purchase behavior in an LP, because they have the most room to increase their initial purchase levels (Lal & Bell 2003; Taylor & Neslin 2005; Liu 2007; Kim et al. 2009). Also, the strongest pre- and post-rewarding effects in short-term LPs are found among low-level users (Lal & Bell 2003; Taylor & Neslin 2005). Nevertheless, in absolute terms, reward redemption rates are the highest (and most probable) among heavy users (i.e., LP members who purchase greater volumes and/or purchase more frequently) (Lal & Bell 2003; Taylor & Neslin 2005; Liu 2007). Therefore, in continuous LPs, members with low cumulative spending experience negligible points pressure (Lewis 2004). Because they are far from reaching reward thresholds, they face low switching costs for increasing engagement with the LP (Hartmann & Viard 2008) and may even experience reverse points pressure (Lewis 2004; Blattberg, Kim & Neslin, 2008), as they become discouraged from purchasing over time. Overall, little is

known about moderating effects of individual differences on rewarding effects in continuous LPs. Although Kopalle et al. (2006) found positive post-rewarding effects regardless of customer latent differences and preferences for reward types, Liu (2007) found that the increase in reward claim behavior over time is strongest for light and medium users, which suggests that these members may have experienced higher rewarded-behavior effects.

Customer loyalty is a multifaceted phenomenon consisting not only of behavioral responses but also of an attitudinal attachment of LP members, found in levels of satisfaction and commitment to the LP (Dick & Basu 1994; Dholakia 2006; Kim et al. 2009). Satisfied and committed LP members are more inclined to remain with a firm (Bolton 1998; Bolton, Kannan, & Bramlett 2001; Wirtz, Mattila, & Lwin 2007; Henning-Thurau & Paul 2007), increase their purchase volume and frequency (Demoulin & Zidda 2008; Kim et al. 2009), and respond to the firm's promotions (Lacey 2009). Even more, an LP may increase purchase behavior of LP members with low levels of behavioral loyalty if their attitudinal loyalty is high (Kim et al. 2009). These findings suggest that the level of attitudinal loyalty (satisfaction and commitment) may have an important impact on effectiveness of the LP mechanisms.

Finally, members evaluate an LP on the basis of the perceived value and attainability of rewards (Kivetz & Simonson 2002; Kivetz 2003; Nunes & Dreze 2006b). They tend to react differently to utilitarian than hedonic types of rewards (Dhar & Wertenbroch 2000; O'Curry & Strahilevitz 2001; Kivetz, Urminsky, & Zheng 2006); thus, the effects of reward redemption may differ with reward type (Nunes & Dreze 2006b; Smith & Sparks 2009a, 2009b). Greater effort required to obtain a reward shifts customer preferences from necessity or utilitarian rewards to luxury or hedonic rewards (e.g., massage, jewelry, travel) (Dhar & Wertenbroch 2000; O'Curry & Strahilevitz 2001; Kivetz & Simonson 2002). However, mixed findings exist on which types of reward is preferred in different market settings, and the impact of reward type on rewarding effects has received almost no attention. In low-involvement markets (e.g., retail supermarkets), customers prefer rewards that are congruent with their consumption effort (e.g., free product from a supermarket or department store rather than an unrelated reward) (Roehm, Pullins, & Roehm 2002; Yi & Jeon 2003; Kivetz 2005). This would suggest higher effectiveness of necessity rewards in common retail LPs compared with unrelated hedonic rewards (e.g., travel). In contrast, hedonic rewards seem more attractive prizes than utilitarian rewards, and members more readily spend such windfall gains (Arkes et al. 1994; O'Curry & Strahilevitz 2001; Kivetz & Simonson 2002; Smith & Sparks 2009b). This would imply that hedonic rewards enhance reward redemption effects. The only available evidence is an anecdotal report of post-rewarding effects among

Nectar LP members in the United Kingdom and the increase in effects with redemption of hedonic rewards, such as theme park admission (Nunes & Dreze 2006b).

Given the lack of evidence (and sometimes contradictory empirical evidence) in the existing literature, it is difficult to a priori hypothesize on the direction and strength of numerous possible moderators on pre- and post-rewarding effects. Therefore, we refrain from putting forth specific hypotheses on main and moderating effects of individual traits and reward type, and we consider their investigation exploratory. Specifically, we analyze the moderating influence of reward type (e.g., travel, entertainment, products), usage levels (high spenders), and satisfaction on pre- and post-rewarding effects, accounting for the differences in relationship length (how long customer has been an LP member), level of interest in rewards (active versus passive), income, and age.

4.4 Data Description

The study explores a prominent LP in the Netherlands that has the multi-vendor LP (MVLP) form. With a single LP card, program members collect a currency (program points) after purchase at any of more than ten LP partners, online and offline retailers, and service providers. Participating vendors pertain to the following industries: grocery retail, gas retail, insurance companies, and travel agencies. The number of awarded points may be related to the spending amount, as one LP point is offered on average for every euro spent (issuance policies slightly vary across vendors). Members can redeem collected points for a wide variety of awards, ranging from kitchen utensils to full holidays. The LP provider runs periodic promotions in which members can collect additional amount of LP points or in which members are encouraged to redeem promoted awards. The promotions are mailed to members in personalized mailings that feature their accumulated points and promotional offers.

This study combines behavioral and attitudinal data in analyzing the effectiveness of a continuous LP by linking two databases, which we describe next.

4.4.1 Transactional Data

Information on household transactions is gathered from the LP membership card. In cases where more than one card can be linked to a household, the information was aggregated per household. In this way, we initially obtained longitudinal weekly data on cardholders' loyalty points collection and redemption over three and a half years for 4,981 cardholders. Weekly

purchase behavior (number of purchase occasions and collected LP points) is aggregated across LP vendors per cardholder. To differentiate between cardholders who purchase across LP vendors, we created the cross-buying variable, which indicates the average number of LP vendors a cardholder frequented weekly over 183 weeks. On average, cardholders frequented more than one vendor weekly (1.43 vendors). Last, the LP membership card provided information on sociodemographic characteristics (e.g., age, household income) and the date of joining the LP.[8]

4.4.2 Attitudinal Survey Data

The LP operator collected attitudinal perceptions of members toward the LP using an online survey administered by a market research agency. For 881 cardholders, survey responses could be linked to the ID number of the LP, which enabled linking information on purchase behavior from the database with (self-reported) attitudinal information. Respondents indicated the degree of satisfaction with the overall LP system (collection and redemption) and with particular aspects of reward redemption and assortment (quality, completeness, and regular renewal). The four-item scale has a Cronbach's alpha of 0.79. All items were measured on a five-point scale and averaged summated scores were used to obtain the satisfaction score per respondent (Hair et al. 1995). Furthermore, to determine respondents' propensity and interest in collecting and redeeming in the LP, respondents were asked whether they collected points with specific intention to redeem them (dichotomous, yes-no scale). The negative answer indicates a passive collector of LP points who is not particularly interested in redemption (or collection); the affirmative answer indicates active collecting in the LP.

4.4.3 Final Sample

The final sample for the analysis that merged transactional and attitudinal data was selected on the basis of the following criteria. Given that the focus of the study is the analysis of reward redemption effects, LP members were required to have made at least one reward redemption in the observed 183 weeks and at least 30 purchases. Because the LP is used for frequently purchased categories, members often use it on a weekly basis. The criterion of at least 30 purchases ensures elimination of very irregular customers and cherry-pickers with less than 15 percent of weeks with transactions. The final selection criterion is that the

[8] To protect LP members' privacy, the data provider withheld names or full ID number of individual cardholders.

member could be identified in the survey of reward redemption and LP satisfaction, and in the database of received mailings in the observation period (to know when the member received mailings and how many mailings were received in a week). The final sample contained information on transactional and attitudinal responses of 763 LP members over 183 weeks.

4.4.4 Descriptive Statistics

Table 4.2 displays descriptive statistics and an overview of measures in the final sample.

Table 4.2 Descriptive statistics and interpretation of measurements (N = 763)

Measure	Mean	SD	Interpretation
Spending (points collected)	57.5	126.96	Number of collected points per week (when purchasing)
Points redeemed	2570.35	4107.22	Number of redeemed points in redemption week
Reward type, product	0.86	0.35	Redeemed reward for a product
Reward type, entertainment	0.10	0.30	Redeemed reward for an entertainment prize
Reward type, travel	0.04	0.19	Redeemed reward for a travel
Number of mailings	0.79	0.76	Number of mailings received per week
Cross-buying	1.43	0.89	Average number of LP vendors frequented per week
Satisfaction	2.52	0.60	1–5 scale, 1 = very satisfied
Active collecting	0.88	0.32	0–1 scale, 1 = active collecting, 0 = passive collecting
High spenders	0.25	0.44	Members with highest average spending levels, top quartile
Relationship duration	11.60	3.68	Number of years being a member of the LP
Income	16793.52	2272.12	Cardholder's average annual disposable income
Age	47.53	11.67	Cardholder's age

The points collected measure illustrates the weekly number of LP points collected by a member through purchases in the LP. To obtain insights at the LP level (rather than for individual program vendors), we aggregated collecting and redeeming measures across LP vendors. Further analysis of collecting behavior reveals that, on average, LP members in the database make purchases with the LP card every week (standard deviation [SD] = 1.55). Average spending levels differ across members, as Figure 4.2 illustrates (with the natural logarithm of average weekly number of collected points over three and a half years per member, on the horizontal axis).

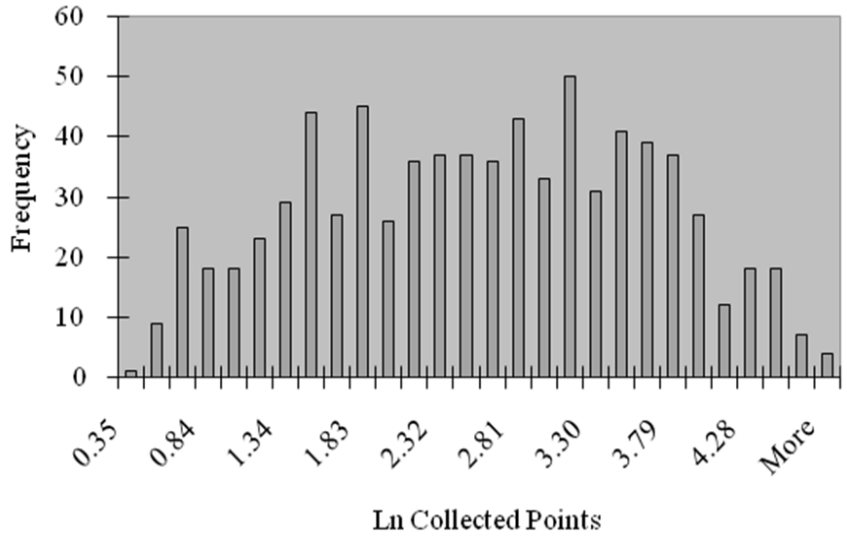

Figure 4.2. Distribution of average (ln)spending levels of LP members

On average, members redeem rewards once every 10 months (43 weeks), but differences across members are substantial (SD = 36.62), and the number of redemptions ranges from 1 to 22 in 183 observed weeks. Because a redemption occasion (total amount of points redeemed per redemption) is our focus, we look at the total amount of points redeemed per week rather than the number of awards or products redeemed per redemption, which is on average more than one award or product (mean = 2.56, SD = 4.12). If more than one type of reward was redeemed per occasion, we coded the type that was more prominent (e.g., 1500 points redeemed for a travel reward and 50 points redeemed on a product was coded as travel redemption). In 86 percent of the redemptions, members redeemed points for products. Entertainment redemptions (e.g., amusement park vouchers, theater tickets) were redeemed in 10 percent of cases. Travel (e.g., flights, holiday packages, hotels) was the least common redemption type (4 percent). Redemption of entertainment and travel rewards shows a distinct seasonal pattern, as these rewards were most often redeemed in the summer (June, July, August). Finally, in 95.6 percent of redemptions, six weeks before redemption, members had sufficient points for the rewards they have subsequently redeemed.

With respect to the personalized marketing mechanism (see Figure 4.1), we observe the number of mailings that members received in a week and the number of vendors they purchased from (on average, members receive 0.79 mailings per week). Although the

database provides information on the number of mailings received in a week, we do not have information on contents of each specific mailing. Finally, members are, on average, neutral to satisfied in the LP (note the mean response of 2.52 on a 5-point scale, where 2 is "satisfied" and 3 is "neither satisfied nor dissatisfied"). Most members (88 percent) claim to actively collect points with an intention to redeem them. Finally, on average, members had been in the LP for more than 11 years, members' age ranges through all the age groups, and the average disposable annual income of €16,794 in the sample corresponds to the national averages per person in the observed periods (on average, €17,000) (Statistical Yearbook of the Netherlands 2009). All the described variables of LP cardholder characteristics were mean-centered when included in the analysis, so the results should be interpreted as effects for an average LP member.

4.5 Modeling Approach

This study aims to analyze the effects of reward redemptions on preceding and subsequent behavior of LP members. Possible effects on behavior are twofold: LP rewarding may make members more likely to purchase (i.e., increase purchase incidence) and/or increase their spending levels when they decide to purchase. Therefore, an influence on both aspects of purchase behavior has to be considered, whereas spending levels can be observed only for weeks in which members made a purchase. This raises the issue of sample selection bias (Heckman 1979), as distribution of purchase behavior observations are censored at zero value and the observations are therefore nonrandomly drawn from a population of purchase utilities for an LP member (Verbeek 2000; Greene 2003). Specifically, the structural model equations are of the following form:

Selection mechanism:
$$PI_{it}^{*} = \alpha_0 + \alpha_1' PR_{it} + \alpha_2' RB_{it} + \alpha_3' W_{it} + \alpha_4' Q_i + \eta_i + u_{it},$$
$$\eta_i \sim N[0, \sigma_\eta^2],\ u_{it} \sim N[0,1]$$
$$PI_{it} = 1 \quad if\ PI_{it}^{*} > 0$$
$$= 0 \quad if\ PI_{it}^{*} \leq 0$$

Spending equation:
$$lnS_{it} = \beta_0 + \beta_1' PR_{it} + \beta_2' RB_{it} + \beta_3' X_{it} + \beta_4' Z_i + \gamma_i + \varepsilon_{it}, \qquad (4.1)$$
$$\gamma_{it} \sim N[0, \sigma_\gamma^2],\ \varepsilon_{it} \sim N[0, \sigma^2]$$

Error structure:
$$Corr\,[u_{it}, \varepsilon_{it}] = \rho$$
$$Corr\,[\eta_i, \gamma_i] = \theta$$

Therefore, we specify a panel data model for sample selection with structural equations in two parts (Greene 2002). In the first stage, a dichotomous selection mechanism is used to model the purchase incidence decision (with a panel binary-choice model). Conditional on this decision to purchase, the second stage analyzes the spending decision.

In Equation 4.1, PI^* denotes LP cardholder's i latent utility of purchasing from the LP in week t, which is observed only if it exceeds an individual's purchase threshold and the person decides to purchase (and thereby collect LP points) in the given week (i.e., $PI_{it} = 1$). Purchase incidence may depend on the proximity of reward redemption (i.e., variables indicating pre-rewarding periods [PR_{it}] and post-rewarding periods or rewarded behavior [RB_{it}]), a vector of time-variant explanatory variables (W_{it}), time-invariant observed personal characteristics (Q_i) and unobserved individual characteristics (η_i).

Conditional on the purchase incidence decision (i.e., the decision to buy or not in a given week), the LP member decides on the spending level (i.e., the amount of LP points to collect). Again, the spending decision may depend on the rewarding effects (PR_{it} and RB_{it}), vectors of time-variant (X_{it}) and time-invariant (Z_i) explanatory variables, and unobserved personal characteristics that affect the decision on purchase amounts (γ_i). In principle, the set of variables in the explanatory vectors of purchase incidence and spending decisions can be the same or different. However, the specification of different variables between two stages should be carefully considered and theoretically justified (Verbeek 2000; Greene 2003). Finally, given that the spending decision is conditional on the decision to purchase, the error terms from the two equations are correlated, which may induce a sample selection bias in estimates (Greene 2002; Verbeek 2000). The adjustment for selectivity in this modeling approach comes in two forms: through the correlation of unobservable error-term components (ρ) and though the correlation of unobserved individual specific components (θ) (Greene 2002).

4.5.1 Analyses of Rewarding Effects

This study uses a stepwise approach to analyzing effects of rewarding on purchase incidence and spending in the LP. Specifically, we advance the following three models:

- **Model 1** explores the nature and potential duration of the pre-rewarding and post-rewarding effects with weekly indicators for six weeks before and six weeks after each reward redemption. We chose the period of six weeks for two main reasons. First, because members on average purchase each week from the LP, a month and a

half before the redemption seemed sufficiently long to analyze potential effects of reward redemptions. Second, the more we extend the window of periods before and after redemption, the more overlapping occurs between consecutive redemptions' windows and periods before and after redemptions. Initial analysis revealed that overlapping increases after six and more weeks.

- **Model 2** builds up a more parsimonious model based on the insights from Model 1. It defines the pre-rewarding and post-rewarding periods with single indicators (rather than a set of weekly indicators used in Model 1). This is the main model of the study; we use it to explore and elaborate on the main effects of the three LP mechanisms (pre-rewarding, post-rewarding or rewarded behavior, and personalized marketing) and the effects of individual- and reward-specific characteristics.
- **Model 3** explores the potential moderating effects of personalized marketing tools (direct mailings and cross-buying), reward types, and spending levels on purchase behavior in periods before and after reward redemption. To ensure comparability, the variables used in this model are the same as those in Model 2, with the addition of interaction terms.

With respect to the variables included in the models, the vectors W, Q, X, and Z from Equation 4.1 should contain the same sets of variables across all three models. The essential difference between models is in the specification of PR and RB vectors, as discussed previously. In each of the models, we initially specify vectors W and X, and Q and Z, to contain the same set of variables, as there is no strong theoretical rationale to assume that any of the (explanatory) variables in Table 4.2 would affect purchase incidence but not spending, and vice versa. Specifically, vectors W–X and Q–Z contain the following time-variant and time-invariant explanatory variables, respectively:

$$W_{it} = X_{it} = f(lnRed_{it}, REnt_{it}, RTrav_{it}, NM_{it-1})$$
$$Q_i = Z_i = g(CB_i, Sat_i, Act_i, HS_i, RD_i, Inc_i, Age_i, Month_n) \quad (4.2)$$

where

$lnRed_{it}$ = natural logarithm of the number of points redeemed by LP member i in redemption week t_r;

$REnt_{it}$ = indicator variable equal to 1 if the redeemed reward by member i in week t is an entertainment reward, and 0 otherwise;

$RTrav_{it}$ = indicator variable equal to 1 if the redeemed reward by member i in week t is a travel reward, and 0 otherwise;

NM_{it-1} = number of mailings received by member i in week $t-1$;

CB_i = average number of LP vendors frequented weekly by member i, mean-centered across the sample;

Sat_i = member i's satisfaction with LP rewarding, mean-centered across the sample;

Act_i = for active collecting for rewards indicator equals 1, 0 otherwise

HS_i = indicator equal to 1 if member i belongs to the top quartile of cumulative spenders in the observation period, 0 otherwise

RD_i = number of years since member i joined the LP, mean-centered across the sample;

Inc_i = average annual disposable income of member i (in €10,000), mean-centered across the sample;

Age_i = age of member i, mean-centered across the sample; and

$Month_n$ = indicators of months of the year, $n = 2,\ldots 12$.

Note that we used lagged value in the mailing variable because there is usually one week difference between the date of receiving a mailing and the actual start of the promotional action. Also, we calculated an aggregate weekly count of mailings. Hence, it is not possible to account for particular effects of an individual mailing (e.g., content, channel). Finally, potential seasonality is accounted for using monthly indicators, but given that the adjustment for seasonality had indiscernible effects on the findings, in the following results sections, we do not report the effects of monthly seasonal indicators.

4.5.2 Estimation

We estimated all models with two-step maximum simulated likelihood rather than the traditionally used Heckman two-step least squares, because the former estimator provides more reliable estimates (Greene 2002). Cuddeback and colleagues (2004: 23) caution that "corrections using the Heckman two-step method can sometimes worsen rather than improve estimates, even under ordinary circumstances" (see also Stolzenberg & Relles 1997). Maximum simulated likelihood is a classical sampling theory counterpart to the hierarchical Bayesian estimator; therefore, it is still necessary to precede this estimator with a panel probit

model and two-step procedure to obtain its starting values (Greene 2002, 2003). Finally, given the panel structure of the data, we accounted for unobserved heterogeneity using a random-effects panel structure (as shown in Equation 4.1). The small value of the Hausman test statistic for fixed versus random effects (H = 0.153) favors a random-effects specification, which allows for estimation of the effects of time-invariant variables in the probit specification (Greene 2003). A group-level unit root test (Levin, Lin, & Chu t = –235.738), as well as individual tests (e.g., Im, Pesaran, & Shin W-stat = –264.483) reject the null hypothesis of the presence of unit root, indicating stationarity of the data. Last, we note that all analyzed models had high goodness of fit across all models (see Table 4.3). For the probit models specification, prediction success (correct prediction of actual 1s and 0s) averaged around 73 percent in three models. In all proposed models, we rejected the joint hypothesis of zero effects of explanatory variables on the basis of high chi-squared statistics (see Table 4.3). The explanation of model fit for the spending equations is less straightforward, as it consists of the results for the two-stage least-squares regression (with average adjusted R^2 of 0.176), which we subsequently reestimated using simulated maximum likelihood (ML). Similar to the findings of Greene (2003), differences between the two-stage and ML estimates were large (particularly with respect to marginal effects), but surprisingly, the direct test for the selection effect in the ML estimates (ρ) failed to reject the hypothesis that ρ equals zero, for all models. Therefore, there is no selection bias in the estimated coefficients, and the simultaneous equation approach with simulated ML is preferred over the two-stage regression approach.

Table 4.3. Fit indices and estimates of ρ across models

Measure	Model 1	Model 2	Model 3	
			Full model	Reduced model
Prediction success rate (probit)	72.892	72.895	72.918	72.803
Chi-square st. (probit)	13701.32	13595.09	26840.91	26800.53
Model F test (sample selection) (p value)	902.44 (.0000)	1545.49 (.0000)	590.97 (.000)	1040.72 (.000)
Bayesian Information Criterion (BIC)	284071.1	283985.3	284035.2	283878.6
Rho (ρ) estimate[a]	-.062	-0.41	-.045	-.045

[a]Estimates of rho are insignificant at p = .001 level in all specifications.

4.6 Results

4.6.1 Nature of Rewarding Effects Explored with Weekly Indicators (Model 1)

Model 1 analyzes the effects of rewarding on cardholders' purchase incidence and spending six weeks before and after reward redemption, using weekly indicator variables in PR and RB vectors in Equation 4.1. Specifically, PR vector for member *i* at week *t* contains six weekly indicators for periods before some redemption *n* (e.g. ,indicator PR1 for the week preceding the redemption *n* (one week before) equals one in this week and zero otherwise, and so on). Weekly indicators for post-rewarding periods (in RB vector) are specified accordingly. Table 4.4 displays the findings of Model 1.

Table 4.4. Effects of reward redemptions (Model 1, weekly indicators specification)

	Purchase Incidence			Spending Levels	
	Coefficient[a]	SE	Marginal Effect[b]	Coefficient[a]	SE
Intercept	.461***	.014	.142	3.142***	.037
lnRed (in Redemption Week, t_{red})	.100***	.009	.028	.034***	.004
1st Week Before Redemption	.205***	.041	.038	.041*	.021
2nd Week Before Redemption	.275***	.044	.065	.051**	.022
3rd Week Before Redemption	.190***	.041	.038	.017	.022
4th Week Before Redemption	.192***	.041	.037	.029	.022
5th Week Before Redemption	.234***	.042	.052	.072***	.022
6th Week Before Redemption	.209***	.042	.044	.011	.022
1st Week After Redemption	.285***	.044	.065	.041*	.022
2nd Week After Redemption	.201***	.041	.038	.005	.023
3rd Week After Redemption	.234***	.042	.049	.044**	.023
4th Week After Redemption	.179***	.041	.033	.017	.023
5th Week After Redemption	.168***	.042	.026	.031	.023
6th Week After Redemption	.208***	.042	.039	-.005	.023
RTravel (RTrav) (t_{red})	-.403***	.247	-.098	.160**	.079
REntertainment (REnt) (t_{red})	-.675***	.138	-.198	-.188***	.066
Number of Mailings (NM)	.127***	.006	.026	.026***	.005
Cross-buying (CB)	1.027***	.021	.253	.488***	.028
Satisfaction (Sat)	.029***	.008	.006	.027***	.005
Active Collecting (Act)	-.034**	.014	-.004	.065***	.010
High Spenders (HS)	.348***	.015	.151	.697***	.012
Relationship Duration (RD)	.017***	.001	.009	-.004***	.001
Income (Inc)	-.055***	.021	-.016	.066***	.015
Age	.001	.0004	.0005	-.002***	.0002
ρ	-.062	.067			
σ	-.981***	.003			

a. ***p<0.01; **p<0.05; *p<0.10 b. Marginal effects evaluated at conditional means of independent variables

The main insight from the findings is that rewarding enhances cardholders' purchase behavior in weeks before and after reward redemption. Moreover, rewarding effects have different influence on purchase incidence and spending. In general, LP rewarding has a stronger influence on cardholders' likelihood of purchasing in the LP (purchase incidence) than on spending levels, given the coefficient effect sizes and the number of significant effects. Purchase probabilities of an average cardholder in six weeks before the redemption increase by about 4.6 percent (an average of marginal effects across weeks). Pre-rewarding effects also significantly increase spending levels, but relative to the increases in purchase incidence, the pre-rewarding impact on spending levels is shorter (significant increases in spending levels are mainly observed in two weeks before redemption) and weaker (although, on average, across two pre-redemption weeks the increase is also about 4.6 percent, it is marginally significant only in the week preceding redemption). The significant coefficient for the effect on spending in five weeks before the redemption may have occurred for two reasons. Although used explanatory variables are not highly correlated (see Table 4.5), we previously noted that, in some cases, in periods of five weeks and longer the probability of overlapping between consecutive redemption windows increases. Another potential explanation is that the increases in salience (an impetus from the redemption momentum) start approximately five weeks before redemption and become particularly salient just before redemption (in the preceding two weeks).

In the week of redemption, both probability of purchase and spending levels increase, this is further amplified by increases in the size of redemption (ln*Red*). With each percentage-point increase in the size of redeemed reward, the probability of buying and spending levels in the redemption week increase by approximately .03 percent.

The observed increased likelihood of purchasing in pre-rewarding periods persists six weeks after the redemption, increasing the purchase incidence by an average of 4.2 percent.

The influence on spending shows an interesting pattern similar to post-promotional dips in sales of frequently purchased goods (van Heerde, Leeflang, & Wittink 2000). In the first week after redemption, spending levels show a marginally significant increase of 4.1 percent (likely due to rewarded-behavior impulse), which is followed by a dip in the second week and a recovery to previous spending levels in the third week, which subsequently dies out.

Table 4.5 Correlation matrix of explanatory variables

	lnRed	1WB	2WB	3WB	4WB	5WB	6WB	1WA	2WA	3WA	4WA	5WA	6WA	RTrav	REnt	NM	CB	Sat	Act	HS	RD	Inc
lnRed	1.000																					
1WB	.042	1.000																				
2WB	.029	.044	1.000																			
3WB	.022	.032	.044	1.000																		
4WB	.021	.024	.032	.044	1.000																	
5WB	.028	.023	.023	.032	.044	1.000																
6WB	.017	.031	.023	.024	.032	.044	1.000															
1WA	.041	.031	.023	.023	.030	.017	.018	1.000														
2WA	.029	.023	.023	.031	.017	.018	.021	.044	1.000													
3WA	.023	.023	.031	.017	.018	.022	.022	.032	.044	1.000												
4WA	.021	.031	.017	.018	.022	.022	.024	.024	.032	.044	1.000											
5WA	.029	.017	.018	.022	.022	.024	.020	.024	.024	.032	.044	1.000										
6WA	.017	.018	.022	.023	.024	.021	.016	.031	.024	.024	.033	.044	1.000									
RTrav	.223	.001	.001	.003	-.002	-.004	-.001	.001	-.002	.007	-.002	.003	.003	1.000								
REnt	.366	.003	-.002	-.002	.000	.006	.000	.003	-.001	-.001	-.001	.004	.005	-.001	1.000							
NM	.019	.0122	.023	.018	.009	.018	.018	.018	.006	.005	.006	.006	.010	.010	.006	1.000						
CB	.051	.052	.052	.052	.052	.052	.052	.053	.052	.052	.052	.052	.051	.011	.006	.022	1.000					
Sat	-.005	-.004	-.004	-.004	-.004	-.004	-.004	-.004	-.004	-.004	-.004	-.004	-.004	.001	-.009	.003	-.024	1.000				
Act	.021	.022	.021	.021	.021	.021	.021	.021	.022	.022	.022	.022	.022	.005	-.000	-.005	.061	-.243	1.000			
HS	.035	.034	.034	.034	.034	.034	.033	.034	.034	.034	.034	.034	.034	.015	.001	.066	.502	-.022	.026	1.000		
RD	.010	.008	.008	.009	.009	.008	.008	.008	.008	.008	.008	.008	.008	.007	.005	.064	.040	.028	.005	.065	1.000	
Inc	.011	.011	.011	.011	.011	.011	.011	.011	.011	.012	.012	.012	.012	.001	.002	.020	.092	.061	-.008	.052	.043	1.000
Age	.003	.003	.003	.003	.003	.003	.003	.002	.002	.002	.003	.003	.003	.001	.001	.016	-.053	.001	-.062	-.010	.314	.080

Finally, Model 1 included other variables to account for observed differences across LP members and redemptions and to ensure comparability across analyzed models. Their effects are more thoroughly discussed in the results that follow.

4.6.2 Main Effects of Rewarding on Purchase Incidence and Spending (Model 2)

The initial analysis in Model 1 reveals significant positive influence of reward redemptions on purchase behavior of LP members. This subsequent analysis aimed to develop a more parsimonious model of pre-rewarding and post-rewarding effects, with single variables indicating the adequate pre- and post-rewarding periods (rather than weekly indicators). For that purpose, we compared a set of (sample selection) models with different specifications of the lengths of pre-rewarding (PR_t) and post-rewarding periods (RB_t). In this specification, for example, PR for five weeks equals one in five weeks before redemption and zero otherwise. Table 4.6 provides a comparison of goodness of fit for alterative models based on Schwarz's Bayesian Information Criterion. The BIC indices favor the specification with five weeks before redemptions and five weeks after as the model with the best fit[9]. Likewise, this model is preferred over Model 1 on the basis of the lower BIC value (BIC_{M1}= 284,071.1, from Table 4.3).

Table 4.6 Model fit comparison (based on Bayesian Information Criterion)

		Pre-redemption periods					
	Indicators	6 weeks	5 weeks	4 weeks	3 weeks	2 weeks	1 week
Post-redemption periods	6 weeks	283997.52	283997.40	284006.37	284005.92	284003.64	284006.76
	5 weeks	283989.51	**283985.31**	284000.36	284000.00	283997.65	284000.74
	4 weeks	283994.00	283993.97	284002.87	284002.54	284000.27	284003.40
	3 weeks	283993.93	283993.94	284002.78	284005.65	284000.31	284003.44
	2 weeks	283996.78	283996.63	284005.75	284006.51	284003.32	284006.47
	1 week	283992.96	283993.06	284002.26	284002.16	283999.77	284002.76

a. AIC criterion gives the same substantial conclusion

Table 4.7 displays the estimated coefficients for purchase incidence and spending levels in Model 2.

The most important results from this analysis are the significant positive effects of rewarding on purchase incidence and spending behavior of LP members. Pre-rewarding effects in five-week periods leading to rewarding increase likelihood of purchasing (purchase

[9] Comparisons of Akaike Information Criterion lead to the same substantial conclusion.

Table 4.7 Main effects of rewarding (Model 2, period variables of five weeks before and after redemption)

	Purchase Incidence			Spending Levels	
	Coefficient[a]	SE	Marginal effect[b]	Coefficient[a]	SE
Intercept	.481***	.014	.147	3.114***	.038
lnRed (in Redemption Week, t_{red})	.100***	.009	.028	.034***	.004
Before Redemption (5 weeks)	.246***	.020	.048	.039***	.012
After Redemption (5 weeks)	.244***	.020	.046	.028**	.012
RTravel (RTrav) (t_{red})	-.383	.250	-.088	.162**	.079
REntertainment (REnt) (t_{red})	-.659***	.138	-.191	-.186***	.066
Number of Mailings (NM)	.140***	.006	.029	.027***	.005
Cross-buying (CB)	1.043***	.021	.259	.498***	.029
Satisfaction (Sat)	.029***	.008	.006	.027***	.005
Active Collecting (Act)	-.031**	.014	-.002	.065***	.010
High Spenders (HS)	.350***	.015	.149	.697***	.012
Relationship Duration (RD)	.017***	.001	.009	-.003***	.001
Income (Inc)	-.053***	.021	-.017	.066***	.015
Age	.001	.0004	.0005	-.002***	.0002
ρ	-.041	.069			
σ	.980***	.002			

a.***p<0.01; **p<0.05; *p<0.10; b. Marginal effects evaluated at conditional means of independent variables

incidence) by an average of 4.8 percent and spending levels by an average of 3.9 percent among those who decide to purchase (in support of H_{1a} and H_{1b}). In the five weeks after redemption, the post-rewarding effects increase purchase incidence by an average of 4.6 percent and spending by an average of 2.8 percent (in support of H_{2a} and H_{2b}). Larger effect sizes for pre-rewarding than for post-rewarding provide further support for H_{3b}.

The larger the size of redemption, the greater is the purchase incidence and spending in the week of redemption (t_{red}). For each percentage-point increase in the size of reward(s) redemption, the likelihood of purchasing in the redemption week increases by .028 percent, and spending levels increase by .036 percent. Interestingly, the effects in the redemption week differ across reward types. Although redemption of a travel reward does not have a significant impact on cardholders' likelihood of purchasing in the redemption week, those members who do purchase spend on average 16 percent more than in other weeks. In contrast, in weeks members redeemed entertainment rewards, LP members are 19 percent less likely to purchase - if they do purchase, they spend 19 percent less than their average in

other weeks. A possible explanation for these findings is the structure of the LP. Entertainment rewards are usually redeemed at LP partners where points can be rather redeemed than collected (e.g., amusement parks), which may amount to relatively lower spending (points collecting) in that week.

The main effects of personalized marketing tools are significant. Mailings sent to a member increase the individual's probability of purchasing and spending at LP partners. The expected purchase incidence and spending increase with the number of received mailings. Every additional mailing received increases the weekly probability of purchasing by 2.9 percent and spending levels by 2.7 percent. Furthermore, there are significant, positive effects of cross-purchasing in the LP. Cardholders who cross-purchase from multiple vendors in the MVLP have a 26 percent higher weekly purchase incidence rate and spending levels about 50 percent higher. Finally, we included a set of variables to control for the differences across LP members. As expected, satisfied members and high spenders are significantly more likely to purchase and spend more in any particular week. Interestingly, effects of active collection of LP points (relative to passive collection without an interest in redeeming rewards) is primarily visible in spending decisions (6.5 percent higher spending) rather than in purchase likelihood (0.2 percent lower purchase likelihood). The longer cardholders have been in the LP, the higher is their purchase incidence (by 0.9 percent), but when cardholders do purchase, they spend less (by 0.3 percent). Those LP members with higher income levels are 1.7 percent less likely to purchase, but when they do, they tend to spend more 6.6 percent). Finally, age does not have a significant influence on purchase incidence, but spending levels are higher for relatively younger LP members (for 0.2 percent).

4.6.3 Analysis of Moderating Effects (Model 3)

Model 3 aimed to determine whether (1) personalized marketing mechanisms (mailings and cross-buying) enhanced pre- and post- rewarding effects; (2) whether these effects differ for different reward types; and (3) LP cardholders' characteristics. Table 4.8 displays the results of estimations of the full model, which includes all variables and interactions, and a reduced model, which includes significant variables from the full model and high spenders' interactions. Although insignificant in the full specification, we included the interaction between the high spenders indicator and the pre- and post-rewarding periods in the reduced specification to explore whether the rewarding effects are stronger for high cumulative spenders or medium and low spenders. The model fit further improves (particularly for the

reduced model; see Table 4.3). Overall, the moderating terms are not strongly significant, but they, nevertheless, provide very interesting insights.

Table 4.8 Moderating influence on rewarding effects (Model 3, main and moderating effects)

	Full model					Reduced model				
	Purchase incidence			Spending levels		Purchase incidence			Spending levels	
	Coeff.[a]	SE	Marginal effect[b]	Coeff.[a]	SE	Coeff.[a]	SE	Marg. effect[b]	Coeff.[a]	SE
Intercept	.472***	.020	.143	3.114***	.042	.475***	.015	.165	3.114***	.031
lnRed (t_{red})	.099***	.009	.028	.034***	.004	.099***	.009	.028	.034***	.003
Before redemption (5 w.)	.361***	.038	.088	.035	.023	.369***	.034	.085	.038***	.014
After redemption (5 w.)	.301***	.036	.072	.047**	.023	.316***	.030	.068	.030**	.015
RTravel (RTrav, t_{red})	-.376	.250	-.088	.161**	.079	-.378	.250	-.090	.164**	.080
REntertainment (REnt, t_{red})	-.653***	.138	-.191	-.186***	.066	-.655***	.138	-.190	-.185***	.066
Number of mailings (NM)	.155***	.007	.033	.028***	.007	.156***	.007	.032	.026***	.005
Cross-buying (CB)	1.017***	.022	.243	.488***	.032	1.022***	.021	.264	.497***	.023
Satisfaction (Sat)	.034***	.008	.007	.027***	.006	.029***	.008	.010	.027***	.005
Active collecting (Act)	-.031**	.014	-.005	.066***	.010	-.033**	.014	-.018	.066***	.010
High spenders (HS)	.349***	.016	.156	.703***	.014	.347***	.016	.142	.699***	.014
Relationship duration (RD)	.017***	.001	.009	-.003***	.001	.018***	.001	.007	-.003***	.001
Income (Inc)	-.053**	.021	-.007	.067***	.015	-.050**	.020	-.006	.066***	.014
Age	.001	.000	.001	-.002***	.000				-.002***	.000
RTrav × Before	-.038	.096	.016	.020	.052					
RTrav × After	-.096	.198	-.019	.034	.105					
REnt × Before	-.170***	.054	-.031	.022	.032	-.167***	.053	-.030		
REnt × After	-.106	.114	-.015	-.010	.068					
NM × Before	-.109***	.027	-.028	.0002	.015	-.110***	.027	-.028		
NM × After	-.104***	.027	-.028	-.023	.015	-.106***	.053	-.028		
CB × Before	.221**	.091	.123	.039	.035	.231***	.091	.125		
CB × After	.110	.088	.086	.021	.036					
Sat × Before	-.014	.063	.006	.001	.017					
Sat × After	-.054	.034	-.009	-.002	.018					
HS × Before	-.010	.063	-.040	-.013	.025	-.014	.063	-.038	-.002	.022
HS × After	.011	.063	-.033	-.013	.025	.043	.062	-.004	-.007	.022
ρ	-.045	.074				-.045	.053			
σ	.980***	.002				.980***	.002			

Notes: Coefficients of monthly indicators not reported in the table but included in analyses.
[a]***$p < 0.01$. **$p < 0.05$. *$p < 0.10$. [b]Marginal effects evaluated at conditional means of independent variables

H_{4-5} and H_7 posited largely unexplored moderating effects of personalized marketing mechanism tools on the rewarding effects. Interactions between (pre- and post-) rewarding periods and personalized marketing tools (mailings, cross-buying) indicate effects of these tools on rewarding effects beyond their direct effects on purchase behavior. In general, the number of mailings received in pre- and post-reward redemption periods does not further enhance cardholders' likelihood of purchasing and spending in those weeks. In fact, the results indicate significant negative coefficients in both equations. As a consequence, we did not find support for H_4 and H_5. These findings, however, illustrate that the increases in purchase likelihood and spending in pre- and post-rewarding periods do not occur because of intensified mailing in these periods. In contrast, we found support for H_{6a} with significant, positive pre-rewarding effects on purchase incidence for cross-buying, beyond the significant main effects (the expected increase in purchase likelihood is around 12.3 percent). Indeed, those members who cross-purchase in the MVLP have a greater likelihood of purchasing in pre-rewarding weeks, and this increase cannot be attributed to their overall higher purchase and spending levels (note that we controlled for the main effects of cross-purchasing and higher spending levels). However, the effects were not present for spending levels (no support for H_{6b}). As postulated, the effects in post-rewarding period are weaker, but the coefficients are not significant, so there was no support for H_{7a} and H_{7b}.

Pre- and post-rewarding effects are the strongest for product types of rewarding (reference category in the analysis, contained in the main effects), and relative to the product rewards, travel and entertainment rewards induce indiscernible or lower rewarding effects (see Table 4.8).

Finally, we analyzed moderating influences of the level of satisfaction and cumulative spending. The results in Table 4.8 indicate that the level of satisfaction does not significantly influence pre- and post-rewarding effects on behavior, an interesting finding that the effects of rewarding are not more likely to occur among more satisfied program members relative to less satisfied members. Last, interaction terms between the indicator of highest-level spenders and pre- and/or post-rewarding periods show that, holding everything else constant, the rewarding effects do not significantly influence behavior of high spenders (insignificant interaction term), but the pre-rewarding and post-rewarding effects, among medium and low cumulative spenders (from the significant [main] effects of before-and-after redemption indicators) are significant effects. This result supports findings from short-term LPs (Lal & Bell 2003; Taylor & Neslin 2005) and Liu's (2007) findings of the greatest influence of a continuous LP on changes in behavior of low and medium baseline spenders.

4.7 Discussion

This study analyzes effects of reward redemptions in a continuous LP in which LP members choose how much to redeem, what to redeem, and when. We found that reward redemption increases cardholders' likelihood of purchasing and spending levels in weeks before and after reward redemptions. On average, LP members are 4.8 percent more likely to purchase from the LP in the five weeks before redemption and about 4.6 percent more likely to purchase in the five weeks after they redeem a reward. Moreover, if members decide to purchase in those weeks, they spend more (on average, 3.9 percent pre-reward and 2.8 percent post-reward). Importantly, these effects occur even without the economic incentives of points pressure. In the analyzed database, at the beginning of the pre-reward period (i.e., six weeks before reward redemption), 95.6 percent of members already had sufficient points to redeem (which they subsequently redeemed). So the reward itself does not drive the increase in purchase behavior (such that members speed up purchases to earn the reward); the redemption momentum of the decision to redeem a reward increases the salience of the program and reinforces subsequent behavior.

The study contributes to a better understanding of the LP effects in three important ways. First, we address the gap in knowledge on reward redemption behavior in LPs and respond to the call to quantify the influence of LP effects on cardholders' purchase behavior (Bolton, Kannan, & Bramlett 2000; Liu 2007). We found strong support in favor of the debated issue of whether rewarding in a LP matters. Moreover, ours is one of the few studies to simultaneously analyze effects of LP rewarding on both aspects of cardholders' purchase behavior: purchase incidence and spending decisions. We found that the effects of rewarding transfer primarily to a greater likelihood of purchasing (higher purchase incidence), whereas rewarding has overall weaker but significant effects on spending.

Second, this study analyzes the effectiveness of theorized LP mechanisms (points pressure, rewarded behavior, and personalized marketing) in continuous LPs, which can be considered important drivers of changes in LP cardholders' purchase behavior (Blattberg, Kim & Neslin 2008). In addition to showing (theoretically and empirically) that pre-reward effects extend beyond the points-pressure mechanism, we provide empirical evidence for the scarcely researched rewarded-behavior effects and personalized marketing mechanisms. To the best of our knowledge, this is among the first empirical studies to systematically explore effects of all three LP mechanisms in a continuous LP and potential interactions between them. We found no empirical support for the hypothesized enhancement effects of mailings on pre- and post-reward effects. However, we found that it is highly effective for an LP to

encourage cross-buying in the program; not only are cross-buyers substantially more likely to purchase and spend in general, but also they experience strong pre-reward effects on purchase incidence (12 percent increase), beyond their high usual purchase levels. Note that this effect cannot be attributed to their high levels of spending (which is corrected for with the high spenders indicator variable).

Thirdly, this study assesses important moderating effects of cardholders' idiosyncrasies (like usage level and satisfaction) and differing types of rewards (utilitarian (product) rewards versus hedonic (entertainment and travel) rewards). We find indiscernible moderating impact of members' characteristics on effects of rewarding. At the same time this finding indicates that rewarding effects are not driven by levels of satisfaction or higher usage levels. In line with prior research evidence, this study finds that the effects of rewarding are not significant for high cumulative spenders, but rather affect low and medium spenders.

An important managerial implication of analyzing the effects of redemption behavior is the potential to address the issue of liability of unredeemed miles (Shugan 2005). In market conditions in which less than half of LP members remain active in using their LPs after enrollment (Mauri 2003; Ferguson & Hlavinka 2009), LP managers face ever-growing concerns over how to increase the engagement of program members and whether it is worthwhile to do so. On the one hand, encouraging redemption may enhance members' long-term loyalty. On the other hand, accumulation of points generates liabilities for a firm (Shugan 2005; Smith & Sparks 2009a). This study found strong support for the encouraging of reward redemption, which provides an important boost in members' purchase behavior (and salience of the LP). An additional managerial implication of our findings is that LP managers focus their attention not only on the loyal, satisfied, and high-spending segments; they should also develop appropriate strategies to nurture relationships with often-undervalued segments of lower-spending or averagely satisfied members.

4.8 Limitations and Future Research

This study analyzed effects of rewarding in a single MVLP in one country, which limits potential generalizability. The findings are limited particularly to LPs with a similar structure, and although the analyzed MVLP has a structure typical of MVLPs in other counties, some conclusions on the effectiveness (e.g., of marketing instruments) may not easily transfer to other contexts or (MV)LPs.

Moreover, the empirical analysis of rewarding effects is limited to LP members who had redeemed at least once in the observation period. As a result of low spending levels and infrequent purchases, some members cannot redeem because they do not reach required reward thresholds (this is rather unlikely in our case, as it is rather easy to earn and redeem a reward in the MVLP, particularly over longer periods) (Dreze & Hoch 1998; Lal & Bell 2003; Lewis 2004; Smith & Sparks 2009a). In contrast, some members accumulate sufficient LP currency to redeem a reward, but they do not do so either because they are collecting for a larger-value reward or simply because they forget or are not interested in reward redemption (Smith & Sparks 2009a). Such members are, in essence, less involved with the LP (Smith & Sparks 2009b), they experience negligible switching costs for increasing engagement in the LP (Hartmann & Viard 2008), and they may even become discouraged from purchasing over time (Lewis 2004). Because motivation and increased involvement with the LP drive redemption-momentum effects, it is not certain whether the same psychological rationale can be expected among (current) nonredeemers.

The study provides evidence that pre-rewarded-behavior effects may not be due to the points-pressure mechanism in a continuous LP. Rather, we attempted to provide a broader theoretical framework by proposing the existence of redemption momentum, for which our analysis provides empirical support. However, we believe that more in-depth theoretical evidence of this mechanism is required. Therefore, we propose to test its existence using experimental studies. Given the importance and size of the pre-rewarding and post-rewarding effects, we believe that a further in-depth study of this psychological mechanism is warranted.

Furthermore, an important motivation for studying the effects of rewarding in continuous LPs is the assessment of dynamic effect, particularly long-term effects, because the emphasis in continuous LPs is on building long-term relationship (Dowling & Uncles 1997; Lewis 2004). Although initial unit root tests indicate no presence of the long-term effects on purchase behavior among analyzed LP members, more insights into the nature of long-term versus short-term effects of rewarding may result with a different methodological approach. One of the often-advocated ways to model the short- and long-term effects of a marketing instrument (and to analyze its effectiveness) is dynamic linear modeling in Bayesian inference (West & Harrison 1999; Leeflang et al. 2009). This modeling framework, for instance, may, in addition to the examined temporary effects of rewarding, explore how baseline purchase levels for an LP member develop over time, thus providing more detailed insight into long-term effects of rewarding.

Finally, this study examines points-collecting behavior rather than exact amounts of money spent, which may not fully correspond with each other if the member does not use the LP card at every purchase. Moreover, we analyzed aggregate weekly collecting levels because we were primarily interested in the effects at the level of the whole LP. In this particular LP, the aggregate levels of collecting consist of purchases across diverse LP partners. This analysis does not explore the effects per category or a vendor. Further research could analyze the differences in rewarded-behavior effects across multiple vendors in the context of partnership LPs.

CHAPTER 5
CONCLUSIONS AND DISCUSSION

5.1 Overview

This thesis responds to the call for a more thorough understanding of the effects of loyalty programs (LPs) in general and coalition (or multi-vendor) LPs in particular (Ferguson & Hlavinka 2006; Blattberg, Kim & Neslin 2008). To begin with, in chapter 2, we aimed to provide an overview and synthesis of existing empirical evidence to identify initial generalizations and valuable research directions. Building on that literature review, chapters 3 and 4 present two empirical studies focusing on LP effects in a coalition LP. The first study (chapter 3) used transactional data and information on LP-induced mailings to analyze the effects of marketing instruments (in this case, targeted mailings) on sales performance of coalition vendors. In addition to analyzing the main effects of the marketing instruments, we were able to analyze their effects across vendors, which provided first insights into synergic effects in a coalition LP. The second study (in chapter 4) focused on the effects of rewarding in a continuous LP. This study analyzed the effects of reward redemptions, marketing instruments (targeted mailings), and cross-purchasing on purchase incidence and spending of individual LP members using a longitudinal, panel data structure.

In what follows in this chapter, we first outline the main findings and conclusions of the thesis in section 5.2, derive some general managerial implications from those findings in section 5.3., and propose some avenues for future research in section 5.4.

5.2 Findings and Conclusions

5.2.1 Initial Generalizations on LP Effects

Despite the plethora of prior LP research, the overall effects of LPs remained unclear, which spurred debate despite the fact that LPs grew to become the dominant tool of relationship marketing strategies. The extant literature overview presented in chapter 2 focused on the main research question, What are the effects of LP participation on customer behavior and attitudes in LPs? To address this research question, chapter 2 outlined prominent empirical findings in the areas of LP enrollment, LP effects on behavior, LP effects on attitudes, LP mechanisms (e.g., points pressure, rewarded behavior, personalized marketing), and the role

of LP design. The key empirical findings of the literature survey can be synthesized in the following conclusions:

- Expected benefits (economic benefits, rewards, usage regularity) are the most important drivers of LP enrollment and participation, which are evaluated against monetary and nonmonetary costs of participation (e.g., effort to obtain rewards, privacy concerns, enrollment costs).
- The likelihood of enrolling in a new LP depends on distance from the store, previous purchase levels, and attitudinal commitment of LP members (self-selection of customers into LPs).
- Overall, LPs positively affect customer retention, spending, and usage.
- LPs are more effective for increasing expenditures (spending and purchase frequency) of light and moderate buyers than for further enhancing purchase behavior of regular customers or heavy buyers.
- Perceived attractiveness of an LP and its rewards enhance satisfaction and overall attitudinal loyalty of LP members.
- Short-term LPs similar to sales promotions benefit from points-pressure effects, which imply increased spending when customers near receiving a reward.
- Despite mixed evidence of the effects of LPs on firm performance, academic research has suggested a positive link between use of an LP and performance metrics such as sales. The absence of cost data makes profit consequences less clear.
- Delayed, accumulated, and nonmonetary rewards are more effective than price discounts, cash, and rewards unrelated to a firm's offer.

Another important research issue addressed in chapter 2 was identification of gaps in knowledge and forthcoming trends pertaining to LPs. The overview of prior research indicated important lack of knowledge on the effects of coalition LPs despite their increased importance in practice. Another important identified gap is a need for more thorough insights on the drivers of effects in an LP (a continuous LP in particular). These drivers can be theoretically conceptualized through three LP mechanisms: points-pressure effects before reward redemption, rewarding effects after redemption, and effects of personalized marketing instruments (e.g., targeted mailings, cross-purchasing). The two subsequent studies addressed those research issues.

5.2.2 Effects of Promotional Mailings in a Coalition LP

The study presented in chapter 3 aimed to explore the effects of marketing instruments (in this case, targeted promotional mailings) in a coalition LP with multiple partnering vendors, also known as multi-vendor LPs (MVLP). Furthermore, the study aimed to analyze the potential presence of networking effects in the MVLP by analyzing the effects of joint marketing instruments (joint mailings) and potential cross-vendor effects of promotions. In an MVLP (as in other types of LPs), cardholders frequently receive promotional mailings (a marketing instrument tool) intended to increase sales at participating vendors. This study used an econometric model to analyze aggregate weekly sales (approximated with LP points issuance) of five main vendors in a Dutch MVLP in promotional and nonpromotional weeks over two and a half years. To analyze the effectiveness of marketing instruments used in the MVLP, the study analyzed the effects of individual-vendor and joint (multiple vendors) promotional mailings on the sales performance of focal vendors.

The first research question we asked in this study is this: What is the effect of promotions (promotional mailings) in a coalition LP on sales performance across multiple LP vendors? Findings of the study indicate low responsiveness of cardholders to such LP-induced promotions. In other words, our findings suggest that analyzed LP-induced promotions that aim to increase point collection do not have a significant impact on aggregate sales to cardholders. This would imply that MVLP cardholders use their cards in regular purchases and collect loyalty points for the purchases but that cardholders generally do not change their purchase behavior to respond to LP promotions. Indeed, Leenheer et al. (2007) found that neither the discount nor the savings feature of LPs significantly affect cardholders' behavior once they are enrolled in an LP.

The second research question that this study addressed is, How do the effects of marketing instruments (promotional mailings) depend on the promotion's size or type of communication channel used? We found that responsiveness to LP-induced (sales) promotions may improve if multiple communication channels are used jointly to present an individual-vendor promotion. This finding is in line with the literature on the greater effectiveness of integrated marketing communications (Naik & Raman 2003). However, the promotion size (i.e., number of mailings sent) does not have a discernable influence on aggregate sales levels of MVLP vendors.

Finally, this study addressed an issue of possible strategic benefits of coalitions in the MVLP by examining cross-vendor effects of promotions and the effectiveness of joint mailings. The related research question was as follows: Do marketing instruments in a

coalition LP induce cross-purchasing through joint mailings and cross-vendor promotional effects? We found no strong evidence for coalition effects, because we found neither stronger effects for joint promotions of several vendors relative to individual-vendor promotions nor significant spillover effects of promotions across vendors (i.e., cross-vendor effects). This finding opposed the anecdotal evidence from the managerial literature on strong benefits of networking in MVLPs (Capizzi & Ferguson 2005; Clark 2006; Ferguson & Hlavinka 2006). We found that such benefits cannot be supported through increased effectiveness of joint promotional mailings or cross-vendor effects of promotions.

5.2.3 Effects of Rewarding in a Coalition LP

Rewarding is one of the most essential elements of an LP, as illustrated in section 1.3 of chapter 1. The study presented in chapter 4 analyzes effects of reward redemptions (i.e., rewarding) in the same Dutch coalition LP analyzed in chapter 3, but this time focusing on individual-level behavior. This LP has a typical form of continuous LPs in which cardholders choose how much to redeem, what to redeem, and when, and their accumulated points do not expire in the short run. Therefore, the main research question of this study was, What are the effects of reward redemption on cardholders' purchase behavior in a continuous, coalition LP? The study used the coalition LP setting to explore the effects of reward redemption on purchase incidence and spending levels of 763 LP members over 183 weeks using panel data sample selection modeling.

The main finding of this analysis is that rewarding in a continuous (MV)LP increases members' likelihood of purchasing and spending levels in (relatively) short periods before and after reward redemptions. On average, LP members are 4.8 percent more likely to purchase from the LP five weeks before redeeming and about 4.6 percent more likely to purchase in the five weeks after they redeem a reward. Even more, if members decide to purchase in those weeks, they spend more (on average 3.9 percent in the five weeks pre-reward and 2.8 percent in the five weeks post-reward). Therefore, this study indicates not only the importance of reward redemptions in LP but also the importance of analyzing both aspects of cardholders' purchase behavior: purchase incidence and spending. We found that the effects of rewarding transfer primarily to a higher likelihood of purchasing (higher purchase incidence), whereas rewarding has a somewhat weaker but still ample effect on spending.

In addition, our findings provide important insights into the drivers of LP effects and effectiveness of LP mechanisms. To the best of our knowledge, this is one of the first

empirical studies to systematically explore effects of all three LP mechanisms in a continuous LP (MVLP in particular) and potential interactions between them. First, the findings indicate that LP rewarding effects would occur even if cardholders did not directly experience (economic incentives of) points-pressure mechanism. We suggest that the decision to redeem a reward itself increases the salience of the program and reinforces subsequent behavior (a phenomenon we termed *redemption momentum*). Second, we found empirical support for the existence of post-reward effects or the rewarded-behavior mechanism, albeit those effects are weaker than the pre-reward effects.

The second important research question of this study was, How do marketing instruments affect cardholders' purchase behavior before and after reward redemption? This study analyzes the effects of two marketing instruments of the personalized marketing mechanism (targeted mailings and the level of cross-purchasing). Although we found significant, positive, direct effects of the number of mailings on purchase behavior, targeted mailings did not lift the levels of purchase behavior in pre- and post-rewarding periods over and above these main effects. In contrast, we found strong support for the effects of cross-purchasing. Members who cross-purchase across MVLP vendors have an overall higher likelihood of purchasing and higher spending levels (main effects), and they experience strong pre-reward effects beyond main levels of purchasing. This increase is not due to their higher overall spending levels. Finally, we did not find significant interaction effects for pre-rewarding and post-rewarding and moderators such as high purchase level, satisfaction, and type of reward, which suggests that effects of rewarding hold under a range of conditions.

5.2.4 Discussion on Effects of Marketing Instruments

This section aims to discuss seemingly contradictory findings on the effects of marketing instruments (primarily mailings targeted at LP members and cross-buying behavior) in studies in chapters 3 and 4. Although the study in chapter 3 found mostly insignificant effects of promotional mailings on aggregate sales levels of the five main MVLP vendors, the study in chapter 4 found significant, positive effects of mailings on individual members' purchase behavior. Two main explanations can be provided to reconcile the findings: the type of mailings and the level of analysis. First, because the study in chapter 3 aimed to analyze the effectiveness of mailings in increasing sales levels in promotional weeks, it explored only the promotional type of mailings (mailings that aimed to induce LP members to spend more in promotional weeks) and not mailings that featured primarily reward redemption offers (because such mailings do not directly affect sales levels). The conclusion of chapter 3 is that

this promotional type of mailing does not significantly affect regular purchase patterns of LP members at focal coalition vendors. In contrast, the study in chapter 4 accounted for both types of mailings (promotional and reward redemption mailings). Accounting mainly for their number (see variable explanation in section 4.5.4), the study found positive main effects of the number of mailings in observation weeks on cardholders' purchase behavior in general. This finding is in line with the finding of positive effects of LP-induced mailings on individual purchase behavior of LP members in the work of Lewis (2004). A possible explanation for the different results between studies in chapters 3 and 4, therefore, may be the effectiveness of promotional relative to redemption mailings in LPs. Redemption mailings may be more effective than promotional mailings, or the two types of mailings may create synergy when used interchangeably. These two aspects seem to be scarcely explored in the existing literature, but in our opinion, they remain important empirical questions that warrant further attention in the literature.

The other explanation concerns the level of analysis. Chapter 3 analyzes effects of promotional mailings on aggregate sales levels per vendor, across all members who purchased from the vendor in a given week. These aggregate levels include both potential redeemers and nonredeemers of collected amounts of LP points and cannot sufficiently account for heterogeneity across LP members. On the contrary, the analysis in chapter 4 predominantly explores the effects of marketing instruments on individual-level behavior of redeemers. The problem of direct comparison between inference from aggregate-level and individual-level analyses is well documented in the literature, which raises the issue of aggregation bias (Fisher 1987) and ecological fallacy (Robinson 1950). Although the aggregate levels of analyses include behavior of redeemers and nonredeemers, the study in chapter 4 analyzes only redeemers' behavior. However, previous studies found that the percentage of redeemers in an LP varies from 30 percent to 80 percent, depending on the type of program and customer segments (Dreze & Hoch 1998; Lal & Bell 2003; Kopalle et al. 2006; Smith & Sparks 2009a). Moreover, redeemers are more likely to respond to marketing efforts of the program provider (which is further supported in our study by strong, positive effects on behavior of LP members who claim to actively collect for future rewards) (Smith et al. 2003). Therefore, the difference in inferred effectiveness of marketing mechanisms in chapters 3 and 4 may arise as a result of the different responsiveness of redeemers and nonredeemers to the personalized marketing mechanisms, and different levels of statistical inference in two studies.

Essentially, the same set of explanations may reconcile the findings on effects of cross-buying. The study in chapter 3 explores whether promotional mailings of other vendors in the MVLP affect sales levels at the focal vendor and found no empirical support for such cross-vendor effects. Moreover, promotional mailings that feature one vendor seem to be more effective than mailings featuring offers of multiple vendors (joint mailings). However, these findings do not imply that it is not worthwhile for LP providers (MVLP providers in particular) to aim to increase the level of cross-purchasing. On the contrary, the results in chapter 4 indicate that those members for whom the MVLP succeeded in increasing the levels of cross-purchasing are more valuable.

5.3 General Managerial Implications

As LPs proliferate in many markets (particularly retailing), questions about their effectiveness seem ever more warranted. An important managerial question is, Should firms use LPs? Not only are LPs costly to initiate and maintain; their success depends on the firm's thorough strategic planning of their design, market, and performance goals. On the basis of existing empirical evidence (presented in chapter 2), we conclude that LPs are effective relationship management tools that allow firms to better identify and manage their relationships with customers by increasing their spending and loyalty levels (Verhoef 2003; Liu 2007; Leenheer et al. 2007; Meyer-Waarden 2007). Unfortunately, because many LPs seem to be introduced primarily as defensive responses to competitors' programs, their potentials may remain underused (Leenheer & Bijmolt 2008).

Another important managerial question is the value of networking in LPs: Should firms use coalition LPs? Essentially, coalition LPs provide greater value for cardholders than do sole-proprietary LPs (faster reward collections across multiple vendors and broader reward redemption options). Currently, there almost no studies that analyze whether one or the other structure is more effective, so it is hard to make comparisons. However, in the analyzed MVLP here, we found no strong cross-vendor effects of promotional mailings. The main benefit of networking for coalition vendors may be primarily indirect (lower operation costs of managing the LP and greater attractiveness of the LP to cardholders). This, however, does not mean that firms should not try to encourage cross-purchasing from coalition vendors. Coalition LPs in particular are likely to benefit from cross-buying opportunities across diverse (but often complementary) vendors. However, it is necessary for marketing

managers to find ways to effectively increase cross-purchasing and further benefit from the synergic effects of coalitions.

An important managerial implication of analyzing the effects of redemption behavior is the opportunity to address the issue of liability of unredeemed miles (Shugan 2005). Managers of LPs face ever-growing concerns over how to increase program members' engagement and whether it is worthwhile to do so. This thesis indicates that encouraging redemption is effective for managing relationships with cardholders while reducing liabilities for a firm. It is effective for LP providers to encourage reward redemption because it enhances members' purchase behavior (and, we believe, the salience of the LP) in periods before and after redemption. Rewarding increases both the likelihood of purchasing (purchase incidence) and members' spending in the rewarding periods (chapter 4). An important way to further engage cardholders in an LP is to use targeted mailings (or other personalized marketing tools) to induce cardholders to increase usage of the LP. We found mixed evidence on the effectiveness of targeted mailings as marketing instruments in the analyzed MVLP. We found that promotional mailings that aimed to increase cardholders' spending levels seemed to not be highly effective across all LP member groups. Therefore, managers should identify cardholder segments with different levels of responsiveness and leverage information that can be obtained from LP databases to improve marketing instruments effectiveness and efficiency. More specifically, the wealth of data pertaining to individual behavior gathered through an LP provides opportunities for improved targeting, more efficient communication, and customized offers. Information about individual preferences and purchase patterns enables firms to tailor their offers to meet the needs of individual cardholders. In targeted mailings, LP providers should encourage reward redemption and cross-buying.

The final managerial implication that we discuss here is that LP managers not only should focus their attention on the loyal, satisfied, and high-spending segments but also should develop appropriate strategies to nurture relationships with often-undervalued segments of lower- and medium-spending members (chapters 2 and 4).

In summary, a main insight of this thesis is that LPs do work (chapters 2, 4, and 5), but it is very important for them to clarify which specific goals they aim to achieve and which tools are effective to use in acquiring these goals (chapters 2–4).

5.4 Limitations and Further Research

The studies presented in this thesis have several important research limitations. First, although we aimed to be as thorough and complete as possible in selecting the LP studies for the literature synthesis, those studies' diverse LPs, loyalty metrics, and methodological approaches used prevented us from using a meta-analytical approach for empirical generalizations. For that reason, we based some conclusions in chapter 2 on the few available studies. We believe that the area would benefit from a meta-analysis of the effects of LPs on cardholders' behavior and attitudes, given the continuing debate in the academic and managerial literatures.

The remaining research limitations deal with the empirical studies presented in chapters 3 and 4. The first common limitation to both studies is that we analyze effects in just one MVLP, so generalizations of these findings are limited to LPs with a similar structure (albeit the analyzed MVLP has a structure typical of MVLPs in other counties). Given that we analyzed effects in only one MVLP, we focused on the effects in the program and cannot judge the relative effectiveness of MVLP versus sole-proprietary LPs. There is still scarce empirical research on the differences in effectiveness of LP partnerships relative to sole-proprietary LPs, as well as on the effectiveness of different types of LP partnerships (in particular, between coalition LPs and sole-proprietary programs with networking partners). These areas, we believe, particularly warrant further research attention.

Chapter 2 and especially chapter 3 elaborate on the potential benefits of synergies (networking effects) across vendors in coalition LPs, but the empirical evidence of the effects is scarce. The study in chapter 3 analyzes only one potential way in which synergies may be observed (i.e., the cross-effects of vendors' promotions). Further research should address other approaches to analyzing the potential of networking and cross-purchasing in coalition LPs. For example, longitudinal studies could analyze customer-share-development patterns over time and how those eventual increases in customer share affect purchase trends at focal vendors.

Few authors have attempted to evaluate the impact of rewarding on cardholders' behavior in continuous LPs (Taylor & Neslin 2005, Blattberg, Kim & Neslin 2008). Our investigation in chapter 4 showed that the points-pressure theory is insufficient to explain pre-rewarding behavior of cardholders. We therefore propose a more general theoretical approach based on the effect of increased salience of the LP (i.e., the redemption-momentum effect). Although this effect is strongly consistent with existing consumer psychological theories on goal attainment and motivation, we did not confirm the existence of the

redemption momentum effect experimentally. Given the importance of this effect, we believe such experimental study is warranted. Furthermore, more research is needed on the effects of rewarded behavior and potential interactions among the three mechanisms.

The call to further explore the effects of personalized marketing mechanisms largely coincides with the aim of analyzing effects of marketing instruments in an LP. This thesis has mainly analyzed the effects of mailings targeted at LP members (chapters 3 and 4) and has accounted for individual levels of cross-purchasing (chapter 4). However, the studies do not account for effects of other marketing instruments, particularly the effects of marketing instruments external to LP (pricing, advertising of focal vendors, point-of-purchase promotions, or other types of vendor own promotions). Moreover, the thesis did not account for effects of competition. We believe that future studies that account for these factors would allow researchers to tease out the effects of personalized marketing tools on cardholders' behavior. Finally, more research is needed into effects of mailings and how to increase the effectiveness of marketing communications with cardholders from the LP data. Another personalized marketing tool with important future research potential is cross-buying. The question remains how to effectively increase cross-buying from LP members.

Chapter 2 presents other suggested research avenues beyond the topic of this thesis and outlines various aspects pertaining to LPs. The major question that we still consider open for coalition LPs in particular is whether this type of networking provides substantial benefits over sole-proprietary LPs and sole-proprietary programs with complementary partners (as another possible type of LP structure is between the sole-proprietary LPs and full coalition LPs). We believe that with the proliferation of LPs and increased competition among LPs in many markets (in particular fast-moving consumer goods markets) networking will become an ever-increasing trend. The question remains of whether LP coalitions will become the dominant LP structure. We hope this thesis provides some valuable insights and stimulates additional research into the host of pressing research topics discussed herein.

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EXECUTIVE SUMMARY

Loyalty programs (LP), as marketing tools for managing relationships with customers, have increased in importance and spread in many markets. With this proliferation came a competition between LP providers and increased sophistication in LP design. One such important trend in practice is a rise of powerful LP partnerships, known as *coalition* LPs (or *multi-vendor* or *multi-partner* LPs), in which several firms jointly participate in an LP. This type of LP structure is often thought to be particularly effective, because it offers important benefits to participating firms and customers. Given that multiple firms participate in a coalition LP, this type of an LP offers cardholders substantially faster points collection across many vendors and a host of differing redemption options. To participating firms, coalition LPs offer considerable cost reduction and potential benefits of cross-purchasing which may encourage customer engagement. Because cardholders collect points (i.e. reward currency) on purchases at each partner in a coalition LP, they are encouraged to cross-purchase across coalition vendors to obtain points (and subsequently) rewards more quickly. Furthermore, this faster collection of points increases cardholders' prospects of collecting required amounts to reach reward thresholds, which subsequently makes rewarding (and rewarding effects on behavior) more likely.

Notwithstanding their dissemination in practice, little empirical research has explored coalition LPs. Particularly scarce are studies on cardholders' behavior in such LPs in response to marketing efforts. This thesis aims to address these gaps in the LP literature by specifically focusing on the behavior of cardholders and the effectiveness of marketing instruments within such a coalition LP.

To understand the behavioral responses of cardholders within a coalition LP, it is first necessary to understand the effects of LPs in general. Although much has been written about LPs, the field has polarized rather than reached the consensus on the effects of LPs on members' behavior, which has stirred considerable debate among practitioners and academicians alike. While some studies claimed a positive impact of LPs on customer behavior and firm performance, others have questioned the effectiveness of LPs all together. Therefore, the first study in this thesis collects and reviews the available academic (empirical) research, with an aim to separate what is known from what is conjectured. To this end, the first study of this thesis (chapter 2) provides a comprehensive, research-based synthesis of current knowledge about LPs and identifies existing gaps in knowledge, future trends and

research directions. Specifically, the study synthesizes the available evidence in the areas of LP enrollment, LP effects on behavior, LP effects on attitudes, effects of LP mechanisms (e.g., points pressure, rewarded behavior, personalized marketing), and the role of LP design. One of the most important conclusions of this overview is that LPs are effective relationship building tools, since they have positive effects on behavior and attitudes of cardholders after LP enrollment (particularly on their retention, spending and usage levels).

The literature overview also revealed a growing trend of networking in LPs and the increased importance of coalition LPs. However, existing empirical studies primarily focused on the effects of LPs offered by a single firm (i.e. sole-proprietary LPs). On the other hand, relative to sole-proprietary LPs, coalition LPs may offer important benefits of cross-purchasing (i.e. encouraging purchases from coalition LP partners) and faster reward redemption. Since empirical studies of coalition LPs are scarce, two subsequent studies aimed to address the identified gaps in knowledge. In addition to the identified lack of research on coalition LPs, the literature survey identified a gap in knowledge on the effectiveness of marketing instruments (e.g., sales promotions, targeted mailings) within LPs in general. Therefore, the second and the third study of this thesis analyze the effects of marketing instruments on cardholders' behavior within a large, Dutch coalition program with multiple vendors.

The second study of this thesis analyzes the effects of promotional mailings (marketing instruments) on sales performance of the five largest coalition partners in the above-mentioned coalition LP. Targeted mailings to LP members with promotional offers are a frequently used marketing tool to increase sales (i.e., LP points collection) at LP vendor(s). To analyze the effectiveness of marketing instruments used in the coalition LP, the study analyzed the effects of individual-vendor and joint (multiple vendors) promotional mailings on the weekly sales performance of focal vendors in the program. The featured promotional mailings offered additional amount of LP points to cardholders during the promotional period at the focal vendor(s). Findings of the study indicate low overall responsiveness of cardholders to such LP-induced promotions. In other words, our findings suggest that analyzed promotional mailings which aimed to increase point collection do not have a significant impact on aggregate sales to cardholders. This would imply that MVLP cardholders use their cards in regular purchases and collect loyalty points for the purchases but that majority of cardholders generally do not change their purchase behavior to respond to such LP promotions. Moreover, the analysis of promotional effects across analyzed vendors allows for an investigation of the cross-purchasing effects within the coalition LP. Such

strategic benefits of networking in the coalition LP are explored by examining the effects of promotional mailings across coalition vendors (i.e. cross-vendor effects of promotions) and the effectiveness of joint mailings. We found no strong evidence of coalition effects, because we found neither stronger effects for joint promotions of several vendors relative to individual-vendor promotions nor significant spillover effects of promotions across vendors (i.e., cross-vendor effects). These findings oppose the anecdotal evidence from the managerial literature on strong benefits of networking in MVLPs, at least with respect to the effectiveness of joint promotional mailings of this type and cross-vendor effects of such promotions.

Finally, coalition LPs offer important value-adding feature for cardholders. They allow cardholders to collect a reward currency faster and in that way increase the likelihood of redeeming a reward. Therefore, the coalition LP setting is suitable for studying the effects of rewarding on behavioral responses of LP cardholders. Specifically, the third study analyzes effects of reward redemption on weekly purchase incidence and spending behavior of cardholders in the weeks preceding the reward redemption and in the few weeks after the redemption. Moreover, it explores the influence of marketing instruments (LP mailings and cross-purchasing behavior) on these effects, controlling for individual differences across coalition LP members. This empirical study uses the same Dutch coalition LP analyzed in the previous study, but this time focusing on individual-level behavior.

The main finding of this analysis is that rewarding in the (coalition) LP increases members' likelihood of purchasing and their spending levels in short periods before and after reward redemptions (approximately five weeks before and after the reward redemption). On average, LP members are 4.8 percent more likely to purchase from the LP five weeks before redeeming and about 4.6 percent more likely to purchase in the five weeks after they redeem a reward. Even more, if members decide to purchase in those weeks, they spend more (on average 3.9 percent in the five weeks pre-reward and 2.8 percent in the five weeks post-reward). Moreover, marketing managers should be aware that the effects of rewarding transfer primarily to a higher likelihood of purchasing (higher purchase incidence) in pre- and post-rewarding periods, whereas rewarding has a somewhat weaker, but still ample effect on spending.

Moreover, the study analyzes the effects of targeted mailings and cross-purchasing. Findings of the study indicate that the number of mailings sent to a cardholder increases his/her purchase behavior over time. However, these targeted mailings did not further enhance the effects of rewarding. In other words, the increases in purchase behavior in pre-

rewarding and post-rewarding periods do not occur because of increased effects of mailings to cardholders. Moreover, the effects of rewarding are robust; they do not depend on cardholders' purchase levels, levels of satisfaction or the type of reward. In other words, the effects of rewarding hold across different conditions and groups of cardholders. They do not occur only for cardholders with high purchase levels, or only highly satisfied customers or just for some types of rewards and not for others. The positive effects of rewarding seem to be triggered by the rewarding process itself, which we coined as a "rewarding momentum". Importantly, the findings of this study suggest that coalition LP managers should aim to encourage cross-purchasing in LP networks. Cardholders who cross-purchase across coalition LP vendors have an overall higher likelihood of purchasing and higher spending levels in general (i.e., overall higher purchase levels). But even more, they experience strong pre-reward effects beyond these main purchase levels. In conclusion, it is highly beneficial for coalition LP providers to encourage reward-redemption and cross-purchasing from coalition partners within the program.

The seemingly contradictory findings of the second and the third study on the effectiveness of LP-induced marketing instruments and cross-purchasing can be explained by differences in the type of analyzed mailings and the difference in the level of the analysis. The second study analyzed the aggregate sales building potential of the specific type of promotional mailings which aims to encourage cardholders to collect more points in promotional periods. On the other hand, the third study analyzes the effects of all types of targeted mailings to cardholders, therefore not only the promotions but also those mailings which encourage redemption and present potential rewards and does not have a direct impact on sales of coalition vendors. Accounting mainly for their number (one, two etc. mailings in a given week), the third study found positive effects of the received number of mailings on cardholders' purchase behavior in general. Potential explanation may be in the difference in effectiveness of promotional relative to redemption mailings, but this empirical question could not be explored within this thesis due to the lack of data. The other difference is in the level of analysis, since the second study analyses aggregate sales levels of coalition partners, while the third study analyses individual cardholders' behavior.

We believe that the issue of LP networking is becoming increasingly more important and it will further increase in importance in years to come. We hope that this thesis will represent a valuable contribution to research in this area.

SAMENVATTING

Loyaliteitsprogramma's (LP's) als marketinginstrument voor het beheer van klantrelaties worden steeds belangrijker en in een groot aantal markten ingezet. De toenemende verspreiding van LP's zorgt voor een intensievere competitie tussen verschillende LP-aanbieders en een toenemende ontwikkeling en verfijning van het LP-design. Een belangrijke trend in de praktijk is het aangaan van partnerships, ook bekend als *multi-vendor* LP's (of *coalitie* of *multi-partner* LP's), waarin meerdere bedrijven gezamenlijk deelnemen aan een LP. Daardoor kunnen kaarthouders aanzienlijk sneller punten bij verschillende deelnemende bedrijven verzamelen en inwisselen tegen beloningen. Voordelen van een multi-vendor LP voor de deelnemende bedrijven zijn aanzienlijk lagere kosten dan bij een gewoon loyalieitsprogramma en mogelijke netwerkeffecten. Deze netwerkeffecten ontstaan omdat spaarders de neiging kunnen hebben om bij verschillende bedrijven in het programma te gaan kopen (bijv. tanken bij benzinemaatschappij X en boodschappen bij supermarkt Y). Gezien de voordelen voor bedrijven en consumenten worden multi-vendor LP's in de managementliteratuur ook gezien als het loyaliteitsmanagement-instrument met het meeste potentieel, oftewel als "de natuurlijke eindstatus van LP's".

Er is echter weinig onderzoek gedaan om deze beweringen te verifiëren. In het bijzonder de reacties van kaarthouders op marketing-inspanningen (zoals verkoopacties en gerichte mailings) zijn nauwelijks onderzocht. Dit proefschrift is een van de eerste empirische studies die het gedrag van kaarthouders en de effectiviteit van marketing-instrumenten in een dergelijke multi-vendor LP analyseert.

In de eerste studie wordt de bestaande literatuur over loyaliteitsprogramma's en specifiek over multi-vendor programma's in kaart gebracht. Hieruit blijkt onder andere dat de resultaten in de bestaande literatuur een lage response van kaarthouders op promoties suggereren. Kaarthouders gebruiken hun kaart vooral voor reguliere aankopen en veranderen hun koopgedrag nauwelijks naar aanleiding van aan het LP gekoppelde promoties.

In de tweede studie worden de strategische voordelen van netwerken in een multi-vendor LP onderzocht, vooral de effecten van een promotionele mailing van een bedrijf op de omzet van andere bedrijven die deelnemen aan het multi-vendor LP (zo genaamde cross-vendor effecten van promoties) en de effectiviteit van gezamenlijke mailings. Deze studie levert geen sterk bewijs voor dergelijke effecten van een multi-vendor LP. De effectiviteit van gezamenlijke promoties blijkt niet hoger te zijn dan die van een promotie van een individueel bedrijf, en ook aanzienlijke cross-vendor effecten konden niet worden

aangetoond. Deze bevindingen staan haaks op anekdotische bevindingen uit de marketingliteratuur die sterke netwerkvoordelen in multi-vendor LP's suggereren. Netwerkeffecten van een multi-vendor LP lijken eerder indirect te zijn, b.v. door het delen van kosten door de deelnemende bedrijven en de toegenomen waarde van het LP voor de klant. Multi-vendor LP's zouden beter gebruik moeten maken van dit onbenutte potentieel.

In de derde en laatste studie wordt ingegaan op de toegevoegde waarde van multi-vendor LP's voor de kaarthouders, namelijk dat punten sneller verzameld kunnen worden, een beloning sneller binnen bereik is en de waarschijnlijkheid hoger is dat punten verzilverd kunnen worden. Multi-vendor LP's zijn daardoor een uitermate geschikte setting om de reactie van kaarthouders op beloningen te onderzoeken. Deze studie analyseert in hoeverre het verzilveren van spaarpunten het koopgedrag van kaarthouders in de weken voor en na het verzilveren van punten beïnvloed. Ook wordt het effect van marketinginstrumenten zoals mailings onderzocht, waarbij rekening met individuele verschillen tussen de deelnemende bedrijven wordt gehouden.

De belangrijkste conclusie uit deze analyse is, dat het verzilveren van punten invloed heeft op het koopgedrag van kaarthouders. Kaarthouders zijn ongeveer vijf weken voor en vijf weken na het verzilveren van punten meer geneigd om aankopen te doen en geven meer geld uit. Gemiddeld genomen stijgt de aankoopkans met 4,8% in de weken voor het verzilveren van punten en met 4,6% in de weken erna. Kaarthouders die in deze weken een aankoop doen besteden gemiddeld genomen 3,9% meer in de vijf weken voor het verzilveren van punten en 2,8% meer in de vijf weken erna. Deze effecten zijn stabiel bij verschillende condities en klantgroepen en komen niet alleen voor bij zeer tevreden kaarthouders of kaarthouders met een uitgebreider bestedingspatroon. Ook zijn de effecten onafhankelijk van het type beloning dat de kaarthouder kiest. De positieve effecten van het verzilveren van spaarpunten lijken dus te worden veroorzaakt door het beloningsproces zelf.