

A META-ANALYSIS ON LOYALTY PROGRAM MEMBERSHIP EFFECTS –
THE INFLUENCE FROM FIRM, INDUSTRIAL, AND NATIONAL LEVELS

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Loyalty programs are a common customer relationship management tool that has been adopted in various industries. Despite their prevalence, research on loyalty programs find inconsistent results on loyalty program effectiveness in terms of magnitude and direction. To clarify the effects of loyalty programs, the first aim of this thesis is to investigate whether loyalty program membership has an impact on a range of customer responses. A meta-analysis is used to solve this research question. In total, 432 effect sizes on the relationship between loyalty program membership and customer responses from 81 independent samples were collected. The average corrected sample size-weighted correlations show loyalty program membership generally has a positive yet small effect ($r < .30$) on 17 customer response outcomes.

The results from the first meta-analysis also show substantial heterogeneity which is caused by between-study differences other than random sampling errors. Therefore, the next research question is to identify sources of heterogeneity in loyalty program effects, i.e. a moderator analysis on the underlying factors that influence the relationship between loyalty programs and customer response variables. Drawing on the existing research on loyalty programs, three levels of potential moderators were proposed. At the firm level, program structures and firm size were assessed. At the industrial level, the model incorporates product characteristics and market concentration. At the national level, Hofstede's five cultural dimensions and national economic factors were tested. A number of variables of study characteristics were included to control for different study designs. To further explore loyalty program effects in complex situations, this study tests the interactions between national culture and product characteristics.

This thesis provides an overview of the current research on loyalty programs by quantitatively integrate existing research results. It identifies the strength of loyalty program effects, which are generally weak. Therefore, managers should carefully evaluate the use of loyalty programs for their businesses, given the high initial investment of launching such a loyalty initiative. More importantly, this thesis assesses three levels of moderators that might influence the strength of the loyalty program effects within a single framework. Managers should take into account of these factors examined when evaluating and designing their loyalty program strategies to optimise the output of loyalty programs.

Keywords: loyalty programs, relationship marketing, meta-analysis

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List of abbreviations

ANOVA	Analysis of variance
BESD	Binomial effect size display
CI	Confidence interval
CCI	Consumer confidence index
CPI	Consumer price index
FSN	Fail-safe N
GDP	Gross domestic product
HHI	Herfindahl-Hirschman index
HLM	Hierarchical linear model
ICC	Intraclass correlation coefficient
OECD	Organisation for Economic Co-operation and Development
rwc	Reliability-corrected sample size-weighted correlation coefficient
SOW	Share of wallet
WOM	Word of mouth

Chapter 1

Introduction

1.1 Introduction to the thesis

The purpose of this chapter is to provide an introduction to this PhD thesis. This thesis is aiming at exploring the effects of loyalty program on a range of customer outcomes by integrating prior research results using meta-analysis. To begin with, the thesis outlines the research background. Loyalty programs have become a pivotal relationship marketing tool. The research background gives a the current industrial and research landscapes of loyalty programs. After this, two research gaps are identified. There is lack of understanding of whether loyalty programs actually work or not, as well as an integrated assessment of the factors influencing loyalty program effectiveness (i.e., moderators). Following the research gaps, and research questions and objectives are proposed to address the research gaps. A meta-analysis which integrates the current research outcomes of loyalty programs is considered suitable for assessing the average effects loyalty program effects on different customer outcomes as well as the influence of moderators. Lastly, this chapter presents the overall structure of the thesis.

1.2 Research background

Using loyalty programs to manage customer relationships is a common practice in many industries. Since its inception in 1981, as American Airline launched the AAdvantage loyalty program, which is often considered as the first modern loyalty program (Berman 2006), loyalty programs have gained popularity in various industries. In the U.S., the total number of customers participating in loyalty programs has reached 3.8 billion. Amongst these programs, retail, travel and hospitality industry, and financial services account for the majority of memberships (Fruend 2017). A loyalty program is an “institutionalized incentive system that attempts to enhance consumers’ consumption behaviour over time beyond the direct effects of changes to the price or the core offering” (Henderson et al. 2011, p. 258). Loyalty programs usually split the customer base into members and non-members (Bijmolt et al. 2005). Members can collect points from accumulated purchases, and redeem the points for rewards, such as discounts, gifts, vouchers, and service upgrades. They also enjoy some privileges, for example, members of a frequent flyer program have access to airport lounges and priority to check-in and boarding. By implementing a loyalty program, firms can track members’ behaviours and thereby identify profitable customers.

While successful loyalty programs, such as Amazon Prime and Starbucks Rewards, are valuable assets to firms, we also witness the termination of less successful programs, such as Plenti of American Express. Scholars speculate that the poor management of loyalty programs may be the cause of loyalty program failure. O'Brien and Jones (1995) argue that firms should be selective about whom to reward. Loyalty programs should be able to identify and differentiate profitable and loyal customers from transactional customers. Another view sees loyalty programs as a defensive strategy. Many firms adopt loyalty programs simply because competitors are

implementing one (Dowling and Uncles 1997), without sufficiently considering the financial implications of loyalty programs.

Similar to the conflicting evidence about the effectiveness of loyalty programs from management practice, academic research is also inconclusive. Although some studies provide initial evidence that loyalty program members exhibit, for example, a higher share-of-wallet compared to non-members (Verhoef 2003) and members show higher purchase frequency and shorter inter-purchase time (Meyer-Waarden 2008), other studies suggest that Loyalty programs only have a marginal impact on customer repeated purchase patterns (Sharp and Sharp 1997) and customer acquisition (Meyer-Waarden and Benavent 2006).

1.3 Research gaps, research questions and research objectives

Against this background, this thesis intends to contribute to a better understanding of loyalty programs and their effects on different customer outcomes and an assessment of intervening factors. Specifically, two research gaps are identified, and research questions and objectives are proposed to address the gaps. These are summarised in Table 1.1.

Table 1.1 Research gaps, research questions, and research objectives

Research gaps	Research questions	Research objectives
Gap 1: It is unclear whether loyalty programs actually work since findings in literature are mixed.	Does loyalty program membership significantly enhance customer outcomes (e.g. repurchase, satisfaction, trust, commitment etc.)? i.e. What are the direction and magnitude these effects?	To conduct a meta-analysis to synthesise loyalty program membership's impact on different customers outcomes using empirical results from existing studies.
Gap 2: There is a lack of comprehensive assessment of potential factors which explain the inconsistent performance of loyalty programs.	What are the factors contributing to the inconsistent empirical results in current loyalty program research?	To assess potential moderators of loyalty program membership effects at firm-, industry-, and country-level within an integrated framework.

1.3.1 Research gap 1

First, given the mixed findings in loyalty program literature, it is not clear whether loyalty program members display more positive outcomes than non-members do, and to what extent. This is a critical question since firms need a better understanding of this comparison to establish realistic expectation of loyalty program returns. In addition, the varying strengths of loyalty program effects leads to the speculation that loyalty program effectiveness differs for different customer outcomes. For example, some studies suggest that loyalty programs have limited effects on relational customer outcomes (Lacey 2009). At the same time, research into loyalty program effectiveness is still dispersed with extant studies using different metrics to measure the success of loyalty programs. Despite some researchers have provided reviews of the current research of loyalty programs (Dorotic et al. 2012; Kim et al. 2020; Xie and Chen 2013), there is no study which can quantify the strength of effects in loyalty program research. The loyalty program literature would therefore benefit from an integration of current empirical evidence to clarify the inconsistency in the research results. This study addresses this gap in the literature using meta-analysis to assess the relative importance of loyalty program effects on different customer outcomes. Specifically, it clarifies the effectiveness of loyalty programs for improving customers' attitudes and evaluations of the company and its offerings, as well as positive intentions and behaviours such as repeated purchases and word-of-mouth. From a managerial perspective, the integration of effect sizes as set out in this meta-analysis offers a comprehensive picture of which outcomes are most likely to be affected by loyalty programs. Managers can leverage the integrated average effects as benchmark to assess the effectiveness and understand the competitiveness of their programs. Loyalty programs may have divergent performance on different customer outcomes. Managers should understand loyalty programs work the best on which types of

outcomes, thus they can better utilise loyalty programs to achieve their strategic objectives. Managers can devise complimentary strategies for outcomes that loyalty programs are less capable of improving.

1.3.2 Research gap 2

The second research gap lies in our lack of understanding the causes of inconsistency in loyalty program effects. Many researchers acknowledge that loyalty program effectiveness varies in different contexts. A stream of research has explored the design factors of loyalty programs, such as the impact of membership fees (Ashley et al. 2016), the distance to the rewards (Kivetz et al. 2006), reward types and timing (Jang and Mattila 2005; Yi and Jeon 2003). The variability of these design characteristics is possibly one of the underlying reasons causing inconsistent findings on loyalty program effectiveness.

Another source of the inconsistency might stem from customer heterogeneity, which explains why a loyalty program has differential impacts on different customers. For example, customers' shopping orientations, price-sensitivity, or socio-demographic characteristics determine preferences for loyalty program rewards (Melnyk and van Osselaer 2012; Meyer-Waarden et al. 2013).

Recently, a number of empirical studies introduce competitive forces and national culture into loyalty program research (Hwang and Mattila 2018; Thompson and Chmura 2015; Yang et al. 2016). Despite a lot of effort has been made to explain the differences in loyalty program performance, these studies only focus on one specific factor, rather than assessing them within a single integrated framework. To extend this stream of research, this study examines the influence of contextual settings on loyalty program effects.

Specifically, this thesis contributes to the literature by examining various moderators at the micro- (firm), meso- (industry), and macro- (country) level with several of these moderators not having been assessed before. Other meta-analysis on related marketing topics frequently assess moderators at these three levels (Auer and Papies 2020; Blut and Wang 2020). This perspective is adopted and applied to develop a conceptual model which allows the assessment of generalisability of loyalty program effects. At the firm-level, extant primary research focuses on factors related to the program structure (Drèze and Nunes 2009; Kopalle et al. 2012; Wang et al. 2018). This study therefore tests the impact from two common structural elements: coalition programs (vs. non-coalition programs) and tiered programs (vs. non-tiered programs). Firm size is also included as a firm characteristic that might influence loyalty program effectiveness (Chaudhuri et al. 2019; Uncles et al. 2003).

Furthermore, with studies conducted in different industries, product categories and industry characteristics are considered because extant loyalty program studies are often conducted in a single firm and single industry context. The comparison of loyalty program effectiveness in different industries is rare in extant literature. Using the meta-analytic data, results of studies from different settings are combined, allowing the test of a range of product and industry related moderators, including durability of products, services vs. goods, hedonic vs. utilitarian purchases, and industry concentration.

Research has seen an increasing attention to loyalty programs in international context. However, there is no empirical evidence that provides a comprehensive assessment of the influence of national culture and economic factors on loyalty program effects. In response to the call from (Beck et al. 2015), the current study address this gap by incorporating national culture (Hofstede five cultural dimensions) and economic environment (gross domestic product [GDP], consumer confidence index [CCI], consumer price index [CPI]) into assessing loyalty program effectiveness in this thesis. Although managers do not exert control over the macro forces, a good understanding

of how loyalty programs perform in different national context can help managers to make important decisions about loyalty programs. For example, international firms can rely on the analysis of international environment to decide whether to standardise or localise their loyalty programs. It is also important for managers to understand why same loyalty program settings perform differently in various countries.

1.4 Study contribution

By identifying the strengths of loyalty program effects and analysing the influence of contextual factors on these effects, this thesis intends to contribute to a better understanding of whether and when loyalty programs achieve desired outcomes. Specifically, it makes the following contributions. First, prior research has examined the different moderators on loyalty program effectiveness through assessing firm performance (Bombajj and Dekimpe 2019). The current study focuses on customer outcomes instead of firm performance because this study intends to clarify differences between loyalty program members and non-members instead of assessing loyalty program effectiveness on aggregated firm-level metrics, which cannot be inferred from customer-level but only from firm-level differences. Understanding customer outcomes at the individual level such as customer satisfaction and service quality has crucial implication for relationship marketing, because firms can provide more customer value through a range of individualized marketing tactics to strengthen customer-firm relationships (Leenheer and Bijmolt 2008). Second, this meta-analysis examines loyalty program effects in numerous industry settings, not only in the retail industry. As loyalty programs have been widely adopted in many industries such as services, travel, and finance industry, it is of practical relevance to assess the variation at the industry level. Third, national level contingency factors are proposed to influence loyalty program effectiveness (Beck et al. 2015), and this aspect has received limited research attention. This thesis therefore contributes to this area by testing the influence of

national culture and economic factors. However, although customer heterogeneity is argued to be a vital factor influencing loyalty program effectiveness (Liu and Yang 2009, Bijmolt et al. 2011), due to the limitation of data availability, customer heterogeneity is not incorporated in this study. Finally, in addition to testing contextual moderators, this thesis also assesses interactions between country-level and industry-level variables. Testing these interaction effects allow us to obtain an in-depth understanding of how loyalty programs work in complex situations.

1.5 Thesis structure

This thesis comprises of six chapters. The first chapter (the current chapter) introduces the research context and briefly discusses the current research landscape of loyalty programs. It also identifies the research gaps in loyalty program literature and presents the research questions and research objectives which intends to address the gaps. Furthermore, this chapter discusses the contributions made by this thesis. Finally, as depicted in Figure 1.1, the structure of the thesis is presented.

Chapter 2 provides a review of the extant research of loyalty program effectiveness. It first presents the definition of loyalty programs, as well as different customer metrics used to assess loyalty program effectiveness. Then, it continues to outline the rationales of how loyalty programs function through different psychological mechanisms. Moreover, scholars have investigated the factors that cause the heterogeneity in loyalty program effects. This chapter provides a comprehensive overview of these factors.

Figure 1.1 Thesis structure

Chapter 1 Introduction	<ul style="list-style-type: none">• To set the context of this thesis and to introduce the research gaps, questions, objectives, and the layout of the thesis
Chapter 2 Literature Review	<ul style="list-style-type: none">• To provide a comprehensive review of literature on the effectiveness of loyalty programs
Chapter 3 Conceptual Framework and Hypotheses Development	<ul style="list-style-type: none">• To introduce the conceptual framework of this thesis and propose hypotheses
Chapter 4 Methodology	<ul style="list-style-type: none">• To discuss research philosophy, introduce the main method used for this thesis - meta-analysis, and describe the process of meta-analysis and moderator analysis
Chapter 5 Results	<ul style="list-style-type: none">• To present the results of meta-analysis and moderator analysis
Chapter 6 Discussion and Conclusion	<ul style="list-style-type: none">• To discuss the implications of the results, the limitations of this thesis, and present questions for future research

Chapter 3 integrates the content of Chapter 2 and formulates the conceptual framework of this thesis. Specific moderators of loyalty program effects are identified, these factors are classified into three levels: the firm-level, the industry-level, and the national-level. Relevant hypotheses are also proposed in this chapter.

Chapter 4 introduces the methodologies for this study. First, the philosophical approach is discussed. Then this chapter provides an overview of meta-analysis as the main research method, including a brief introduction of the method, as well as the procedure of conducting meta-analysis. It also describes the steps taken by this thesis to integrate loyalty program effects. Specifically, this chapter presents the process of searching for literature, inclusion criterion, coding, and database development. It also introduces hierarchical linear modelling as the method used for moderator analysis.

Chapter 5 presents the results of the meta-analysis. It first provides a description of the studies included in the meta-analysis. Then it shows the results of integrated effect sizes. The results indicate that loyalty programs perform differently on customer

outcomes. Lastly, the results of hypotheses testing for moderators are presented. The results generally suggest that firm-level, industry-level, and national level factors contribute to the inconsistent findings of loyalty program research.

The last chapter, Chapter 6 gives a discussion of the results presented in Chapter 5. Specifically, it summarises the contribution to the theory and managerial implications made by this thesis. Finally, the thesis closes by identifying the limitations of this study and directions for future research opportunities.

Chapter 2

Literature Review

2.1 Introduction

This chapter is aiming at providing a comprehensive review of current research in loyalty programs. First, the key concepts of customer loyalty and loyalty programs are introduced. Second, different metrics used to assess customer responses to loyalty programs are discussed. Then, the chapter continues to discuss the theoretical justifications of loyalty program effectiveness. Next, an effort has been made to synthesise the research related to the factors influencing loyalty program effectiveness. This chapter ends by consolidating the literature review in a framework and discussing its implication for the current study.

2.2 Customer loyalty

Customer loyalty is a rather complex focal construct and has been conceptualised in different ways. In early studies, loyalty was measured only by repeat-purchase behaviour. Later, scholars establish that behaviours alone do not capture the 'true loyalty'. Jacoby and Chestnut (1978) distinguish between focal brand loyalty,

multibrand loyalty, non-loyal repeat purchasing, and happenstance purchasing. Repeat-purchase cycle can be observed in all four conditions. Therefore, it is incorrect to infer single-brand true loyalty from repeat-purchase patterns. Single-brand loyalty develops only through a three-stage decision-making process. First, the customer must hold brand information and the belief that the brand is superior to competitors' offerings. Then, the customer possesses a clear affective preference for the focal brand. Finally, the customer must intent to purchase the focal brand regardless of the alternative offerings. Therefore, the detection of true loyalty must involve examining customers' beliefs, affect and behavioural intentions as well as actual behaviour.

Subsequent works on the conceptualisation of customer loyalty employ the cognitive-affective-conative framework. Dick and Basu (1994) provide a model which suggests that loyalty is an outcome of the relationship between relative attitude and repeat-purchase behaviour. True loyalty occurs when the correspondence of relative attitude and repeat-purchase behaviour is presented. A combination of low repeat-purchase rate and high relative attitude results in latent loyalty. In the absence of relative attitude, repeat-purchase behaviour only reflects behavioural loyalty, also known as spurious loyalty, because the repeated purchases could be driven by factors, e.g. situational exigencies. Scholars have noted that loyalty programs may induce loyalty, but to the loyalty program per se, not the company. This happens when customers have a relative attitude leaning towards the program (Yi and Jeon 2003). The work by Evanschitzky et al. (2012) empirically establishes that program loyalty and brand loyalty are distinct constructs and have different antecedents. Program loyalty is analogous to spurious loyalty as it is induced by loyalty program benefits and is economic in nature. Differentiation of loyalty constructs should be treated with caution in loyalty program research.

Oliver's (1999) model of loyalty also adopts the cognitive-affective-conative framework but incorporates an additional behavioural dimension. Loyalty emerges from

information of the product as cognitive loyalty. It then develops into favourable attitudes through consistent satisfying usage. This is referred as affective loyalty. The next phase of loyalty development is conative loyalty, characterised by a strong intention to repurchase. The final stage is action loyalty, which is a readiness to act transformed from previous loyalty stages. Action loyalty reflects an enduring commitment to repurchase the product despite other factors that might lead to switching.

In line with the work of Dick and Basu (1994) and Oliver (1999), in this thesis, customer loyalty is defined as a two-dimensional construct which comprises of attitudinal loyalty and the behavioural loyalty. Attitudinal loyalty refers to the favourable attitudes one holds toward a brand over other competitive brands. Behavioural loyalty is reflected through repeatedly purchase from the same brand. True customer loyalty occurs when both attitudinal and behavioural loyalties are presented. It is *“a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour”* (Oliver 1999, p.34).

2.3 Loyalty program definition

Using rewards to motivate customer loyalty is a common strategy in marketing. Loyalty programs are structured incentive systems that reward customers for their accumulated purchases. Yet, in order to maximize the return of such marketing initiatives, companies should select customers with superior profits to reward (O'Brien and Jones 1995). Loyalty programs membership enables firms to identify these customers and offer incentives to them. This thesis adopts the definition of loyalty programs from Henderson et al. (2011, p.3), which states that an loyalty programs is *“any institutionalized incentive system that attempts to enhance consumers’ consumption behaviour over time beyond the direct effects of changes to the price or*

the core offering.” This definition is in line with the expectation that loyalty programs should enhance both attitudinal and behavioural loyalty (Bijmolt et al. 2011; Kumar and Reinartz 2018). They should induce enduring effects so that companies benefit from a sustained relationship with customers.

2.4 Customer responses to loyalty programs

Bombajj and Dekimpe (2019) summarise that the current loyalty program research can be divided into three streams. The first category is lab-based experimental studies. The second type is survey-based studies. And the third type is empirical studies that examine actual loyalty program implementation. Despite the differences in research design, the effectiveness of loyalty programs is assessed using various firm and customer metrics. Adopting Dick and Basu’s (1994) framework of customer loyalty, these metrics can be generally categorised into attitudinal outcomes and behavioural outcomes of loyalty programs. Within this framework, this study further differentiates customer attitudinal outcomes into evaluations of the product or the firm and the relational outcomes which reflect the characteristics of a customer-firm relationship. Behavioural outcomes can also be further classified into behavioural intentions and actual behaviour since the correlation between behavioural intentions and actual behaviour can be low if they are not measured at the same time (Ryan and Bonfield 1975). Lastly, some studies use a global measure of customer loyalty, which encompasses both attitudinal and behavioural aspects. The integrated assessment of customer loyalty is listed as a separate category. Table 2.1 below presents the definitions of customer response outcomes examined in this thesis according to this classification.

Table 2.1 Customer responses to loyalty programs

	Key variable	Conceptualisation	Exemplar studies
Attitudinal – Evaluative outcomes	Brand attitude	Customer’s overall evaluation of a brand (Mitchell and Olson 1981)	Smith et al. (2003)
	Satisfaction	A global evaluative judgment about product usage/consumption (Westbrook 1987)	Bolton et al. 2000)
	Service quality perception	A global judgment, or attitude, relating to the superiority of the service (Parasuraman et al. 1988 p.16)	Lee et al. (2014)
	Switching costs	The onetime costs that customers associate with the process of switching from one provider to another (Burnham et al. 2003).	Wirtz et al. (2007)
	Value perception	The consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given (Zeithaml 1988 p.14)	Gustafsson et al. (2004)
Attitudinal – Relational outcomes	Commitment	An enduring desire to maintain a valued relationship (Moorman et al. 1992, p.316)	Morgan et al. (2000)
	Customer identification	Customer identification is an active, selective, and volitional act motivated by the satisfaction of one or more self-definitional (i.e., “Who am I?”) needs (Bhattacharya and Sen 2003, p.77).	Swanson and Davis (2006)
	Trust	The willingness to rely on the exchange partner in whom one has confidence (Moorman et al. 1992, p.315)	Stathopoulou and Balabanis (2016)
Behavioural intentions	Willingness-to-pay	The maximum price that a customer is willing to spend on the product or service (Miller et al. 2011)	Browne et al. (1995)
	Repurchase	The intention to repeatedly	Seiders et al. (2005)

	intention	purchase from the same supplier	
	Word-of-mouth intention	The intention to engage in the interpersonal communication about the positive and negative evaluations of a product or company (Anderson 1998; Hennig-Thurau et al. 2004)	Shi et al. (2014)
Actual behaviours	Cooperation	Coordinated and complementary actions between exchange partners to achieve mutual goals (Palmatier et al. 2006)	Lacey (2012)
	Repurchase behaviour	Repeatedly purchase from the same supplier	Meyer-Waarden et al. (2013)
	Sales/profit	The monetary value of the products/services purchased by customers	Murthi et al. (2011)
	Share-of-wallet	The proportion of a customer's spending for a particular product/service or a brand/company.	Leenheer et al. (2007)
	Word-of-mouth behaviour	The interpersonal communication about the positive and negative evaluations of a product or company (Anderson 1998; Hennig-Thurau et al. 2004)	Evanschitzky and Wunderlich (2006)
Integrated measure of customer loyalty	Customer loyalty	Composite or multidimensional construct combining different groupings of intentions, attitudes, and seller performance indicators (Palmatier et al. 2006)	Lin et al. (2014)

2.4.1 Attitudinal responses to loyalty programs

Research has explored how loyalty programs reinforce psychological attachments to the company and foster attitudinal loyalty. It has been discussed extensively that relationship marketing outcomes are mediated by some relational constructs, which are inherently internal attitudes or feelings perceived by exchange partners. Research

on loyalty program effectiveness concentrates on these constructs, as their positive influence on behavioural intentions and profitability are substantiated.

Brand attitude. Brand attitude is commonly understood as a construct formed through the perception of brand attributes. It is a customer's overall evaluation of a brand (Mitchell and Olson 1981). Although it is developed based on cognitive processing of beliefs about the brand, it also has an affective dimension (Rossiter and Percy 1980). Through the perception of the benefits that loyalty programs offer to customers, loyalty programs are expected to change customers' emotions and attitude toward the brand. The relative attitudes held by customers of a brand can influence the preference for the brand and might result in purchase behaviours (Bass and Talarzyk 1972).

Satisfaction. Another important relational mediator is satisfaction. Satisfaction is a global evaluative judgment about product usage/consumption (Westbrook 1987). Numerous studies have examined how customer satisfaction leads to behavioural intentions and loyalty (Homburg and Giering 2001; Mittal and Kamakura 2001; Oliver 1999). Expectation-disconfirmation framework states that customers form a pre-purchase expectation and compare actual experience with the product or service against the expectation in order to reach a satisfaction judgement (Oliver 1980). Loyalty programs provide special benefits that lead customers to form satisfactory judgements towards the benefits in addition to the satisfaction of the core offering, thus improve the overall satisfaction level (Shoemaker and Lewis 1999; Stauss et al. 2001).

Service quality perception. Service quality sometimes are considered as similar to customer satisfaction. But literature has stressed that they are distinctive constructs (Bloemer et al. 1998). Service quality perception is a global judgment, or attitude, relating to the superiority of the service (Parasuraman et al. 1988). Bolton et al. (2000) have shown that loyalty program members are likely to overlook the negative experiences and have better perceptions of their purchases. Therefore, better service quality perceptions amongst loyalty program members are expected to be observed.

Switching costs. Switching costs are “the onetime costs that customers associate with the process of switching from one provider to another” (Burnham et al. 2003, p.110). Customers may be willing to remain in an exchange relationship based on the calculation of loss of switching to another provider. One of the critical objectives of loyalty programs is to create switching costs through anticipated rewards and relational bonds offered by loyalty programs. The higher the perceived switching costs, the more likely the customer would stay within the relationship with the firm.

Value perception. Loyalty programs provide various benefits which encourage customers to engage in a long-term relationship. Value perception is “the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given” (Zeithaml 1988, p.14). Customers are entitled to some discounts and cash rewards perceive economic value. Special treatment benefits such as gifts and privileges are also valued by customers (Evanschitzky et al. 2012). The perceived value of special treatment in loyalty programs can discount the negative impact of service failure, therefore maintains customers in on-going relationships (Schumann et al. 2014).

Customer identification. Customer identification is an active, selective, and volitional act motivated by the satisfaction of one or more self-definitional (i.e., “Who am I?”) needs (Bhattacharya and Sen 2003, p.77). Research has shown that participating a firm’s loyalty program can create a sense of belongingness (Rosenbaum et al. 2005). Being part of the brand community can lead to stronger relationship with the brand and with the company (McAlexander et al. 2002). Firms can use loyalty programs to create customer identification (Brashear-Alejandro et al. 2016).

Trust and commitment. Trust and commitment are well established as psychological pre-requisites for successful relationships (Morgan and Hunt 1994). Trust is conceptualized as “the willingness to rely on the exchange partner in whom one has confidence” (Moorman et al. 1992. p.315) and commitment is “an enduring desire to

maintain a valued relationship” (Moorman et al. 1992. p.316). Due to increased purchase frequency created by loyalty programs (Liu 2007), trust can be nurtured through more intensive contact with the company when repeated purchases occur. As for commitment, loyalty programs provide social and economic motivations for customers to remain in the relationship (Morgan et al. 2000). Customers obtain economic benefits such as price discounts and cash rewards from loyalty programs. And they also develop social bonds with the company through experiencing positive emotions when using loyalty programs, e.g. being treated with a gift on birthday (Henderson et al. 2011).

2.4.2 Behavioural and intentional responses to loyalty programs

Research on the behavioural and intentional responses to loyalty programs most frequently examines customer repurchase behaviour and intentions, because the major function of loyalty programs is to encourage repeated purchases. To analyse the additional revenue created by loyalty programs, increased sales or profits are also important measures. In addition, relational behaviours such as word-of-mouth and cooperation are sometimes considered as desired outcomes of loyalty programs.

Cooperation. Cooperation is the “level of coordinated and complementary actions between exchange partners in their efforts to achieve mutual goals” (Palmatier et al. 2006, p.140). Successful relationship management should foster customers’ cooperation behaviour. In the loyalty program context, cooperation behaviour includes openness to firm promotion, willingness to provide personal information, and willingness to cooperate with market research (Lacey et al. 2007).

Re-purchase intention and re-purchase behaviour. Repeated purchase is one of the major objectives of loyalty programs and has received most research attention. When measuring re-purchase behaviours, researchers use both actual behavioural data and

intentional measures. We differentiate them in this study because the validity of re-purchase intention measures is subject to a variety of factors such as the measurement scales, time horizons, and the characteristics of products and respondents (Morwitz 1997), and are more likely to be affected by internal attitudes (Oliver 1980). Re-purchase intentions are derived from self-reporting scales, while actual re-purchase behaviours are captured from various angles. Purchase frequency, transaction volume, inter-purchase time have been studied extensively in the loyalty program context (Leenheer et al. 2007; Liu 2007; Mägi 2003; Meyer-Waarden 2008; Wirtz et al. 2007). These measures jointly reflect re-purchase behavioural patterns. Another expectation of loyalty programs is that they do not only increase purchases in the categories that customers are already buying, but also increase purchases in other product categories offered by companies (Berman 2006; Dowling and Uncles 1997). The cross-buying effect of loyalty programs has received some empirical examination. Extant research has shown that loyalty programs can drive customers to purchase across categories (Lemon and Wangenheim 2009; Liu 2007).

Sales and profits. Despite the importance of the above behaviours, actual sales and profit are arguably the most important down-stream outcomes. Financial measures are indispensable when assessing loyalty program effectiveness. In different studies, sales and profits are evaluated at transaction, individual, and store levels (Liu 2007; Meyer-Waarden and Benavent 2006). They collectively reflect the effectiveness of loyalty programs in improving actual revenue.

Willingness to pay. Customer willingness to pay directly links to a firm's price decisions and profit (Krishna 1991). Willingness to pay is the maximum price that the customer is willing to spend on the product or service (Miller et al. 2011). Homburg et al. (2005) describe willingness to pay as the monetary value that a customer assigns to a consumption or usage experience. Using loyalty programs and gaining loyalty program benefits are part of customer experience and can be counted towards the value of the

purchase. Since the overall value is increased, presumably, loyalty programs enhance customer willingness to pay. Empirical research has shown that loyal customers exert higher willingness to pay since they are less price sensitive (Krishnamurthi and Raj 1991).

Word-of-mouth intention and behaviour. Word-of-mouth is the interpersonal communication about the positive and negative evaluations of a product or company (Anderson 1998; Hennig-Thurau et al. 2004). It is an important outcome of relationship marketing that drives sales (Chevalier and Mayzlin 2006). Word-of-mouth is motivated through attitudinal constructs like satisfaction, trust, and commitment (Anderson 1998; Hennig-Thurau et al. 2002). Firms expect loyalty programs can prompt customers to recommend the firm and its offerings to potential customers.

2.4.3 Integrated measure of customer loyalty

Customer loyalty. Some studies adopted a global measure of customer loyalty (Palmatier et al. 2006, Lin and Bennett 2014, Turner and Wilson 2004). The overall assessment of loyalty incorporates multiple measures on customer attitudes and behaviours. Loyalty programs positively impact on the components of customer loyalty, and therefore influence the global measures of loyalty.

2.5 Mechanisms of loyalty program effects

Researchers have proposed different theoretical mechanisms that can explain the effects of loyalty programs on various outcome variables. This section is dedicated to discussing these rationales of loyalty programs. A summary can be found in Table 2.2.

Table 2.2 Summary of the rationales of loyalty programs

Loyalty program rationale	Application in loyalty program	Indicative Paper
Constraint-based retention	Loyalty program points and rewards represent the constraint to customers and therefore retain customers.	Evanschitzky and Wunderlich (2006) Wirtz et al. (2007) Kim et al. (2001)
Learning theory	Customers learn through being consistently rewarded for their repeated purchases; thus, the repeated purchase pattern is reinforced. They also learn from positive emotions and experiences, such as service quality, value perception, and satisfaction, arise from using loyalty programs.	Taylor and Neslin (2005) Meyer-Waarden (2007) Yi and Jeon (2003)
Goal attainment	Customers accelerate purchases as approaching to the rewards provided by loyalty programs. Successfully obtaining rewards have positive effects on subsequent consumption behaviours and goal pursuit.	Kivetz, Urminsky, and Zheng (2006) Song et al. (2017) Nunes and Drèze (2006)
Habit formation	Loyalty programs encourage repeated purchases, thus facilitate habitual buying.	Liu-Thompkins and Tam (2013)
Social comparison	Loyalty programs provide recognition, preferential treatment, exclusive content, and privileges that make members feel superior to others.	Drèze and Nunes (2009) Steinhoff and Palmatier (2016) Sajtos and Chong (2018)
Relationship	Loyalty programs represent investment into initiating relationships with customers. Loyalty programs promote mutual trust and commitment, word-of-mouth and cooperation behaviour that cultivate long-term relationships.	Bolton et al. (2000)

2.5.1 Constraint-based retention

Loyalty programs retain customers through imposing some financial and psychological constraints. For example, customers can collect points through accumulated

purchases and redeem the points for rewards, such as discounts, vouchers, and gifts. If the customer switch from one brand to another, the customer would suffer financial losses. The fear of losing such benefits create financial barriers therefore enhances repeated purchases in loyalty programs (Beck et al. 2015). Taylor and Neslin (2005) propose the “points pressure” mechanism, which states that loyalty programs function through customers’ fear of losing points and desire for future rewards. In addition, in tiered programs, customers receive hierarchical benefits. Switching or infrequent purchase behaviours can result in customer demotion (Wagner et al. 2009). In order to avoid this negative consequence, customers are motivated to stay within the loyalty programs to maintain their status and benefits.

2.5.2 Learning theory

Loyalty programs can promote learning. Cognitive learning and behavioural learning are two contrasting approaches, while they can both result in behavioural change (Taylor and Neslin 2005). Behavioural learning theory assumes a low involvement condition, in which behaviours formulate through continuous reinforcements with little mental effort involved. In contrast, cognitive learning assumes a high involvement condition, and behavioural changes take place through a series of complex cognitive activities (Rothschild and Gaidis 1981).

Behavioural learning fits well into the loyalty program context. Customers perform purchase behaviours and are rewarded for their purchases. The rewards serve as reinforcements and prompt repeat purchases. Cognitive learning involves emotional and attitudinal aspects. Consumers may generate feelings of gratitude from the benefits received from the seller, and therefore improve their response to the seller, which eventually transfer into enhanced performance of the company (Palmatier et al. 2009). Relational benefits, which can be provided via loyalty programs, can lead to higher commitment to the company (Hennig-Thurau et al. 2002). Taylor and Neslin

(2005) propose the “rewarded-behaviour” effect, which results from customers’ learning in loyalty programs. It can be simply an outcome of behavioural learning through consistently being rewarded for purchases, or a consequence of changed behaviours mediated by internal attitudes resulted from the rewards. Empirical results suggest that after successful reward redemption, consumers’ purchase level does not resume to the initial baseline level immediately, rather, they tend to use the product/service more frequently (Drèze and Nunes 2011; Taylor and Neslin 2005).

2.5.3 Goal attainment theory

Achieving loyalty program rewards sometimes is referred as goal attainment. Another justification for loyalty programs related to this analogy is the goal-gradient hypothesis, which states that the motivation and effort to reach the goal increase as approaching to the goal (Hull 1932). It is hypothesised that customers would accelerate their purchases as they get close to a reward in the loyalty program. Thus, there is a better chance for loyalty program members’ purchase behaviour to intensify with the salience of rewards. Kivetz et al. (2006) finds that customers in a coffee reward program increase their purchase frequency as they get closer to earn a free coffee. In addition, it has been found that successfully obtaining rewards has an enduring positive effect on subsequent consumptions (Wang et al. 2016), and it also facilitates the next cycle of goal attainment (Zhang and Liu-Thompkins 2018).

2.5.4 Habit formation

Loyalty programs also function through habit formation in that they motivate repeated purchases. A habit is formulated through repeated behaviours and is triggered by specific contextual cues, including time, location, social setting, and preceding or ensuing events (Liu-Thompkins and Tam 2013; Woisetschläger et al. 2011; Wood and

Neal 2007). Once the right cue is presented, customers will perform habitual purchases. These purchases are made without deliberate cognitive effort. In order to accumulate points, customers may choose the same product or brand repeatedly. Thus, a habit may be formed through this process. The presence of rewards in loyalty programs accelerates habit formation because people tend to repeat behaviours that yield valued outcomes (Wood and Neal 2009). Evanschitzky and Wunderlich (2006) have found that loyalty program membership strengthens the link between conative loyalty and action loyalty, which means that loyalty programs can turn behavioural intentions into habitual and routinized purchases.

2.5.5 Social comparison

Loyalty programs not only offer economic rewards, but also non-economic benefits, for example, premium status. Social comparison theory states that people evaluate their own opinions and abilities by comparing themselves with others (Festinger 1954). Such comparison exists in loyalty programs. If customers perceive that the reward fits better for them than for others, the attractiveness of the offer is enhanced (Kivetz and Simonson 2003). Loyalty programs offer preferential treatment, exclusive content, and privileges which reflects customers social status (Lacey et al. 2007; Wagner et al. 2009). Customers tend to acquire products or experience that convey social honour and prestige to others (Solomon 1999). As a concern of social status, customers may feel redeeming a coupon or deal as a sign of cheapness in public or important social settings (e.g. a date) (Ashworth et al. 2005). Therefore, joining a loyalty programs may reduce the perception of cheapness if redeeming using loyalty program rewards. However, some scholars also argue the negative side of using status as a cue for customer responses. Observing others receiving preferential treatment might hurt the status of customers who do not receive benefits, thus result in reduced loyalty (Steinhoff and Palmatier 2016). Using endowed status which does not match the

customer's effort can also increase customer scepticism towards the loyalty program (Eggert et al. 2015).

2.5.6 Relationship

Relationship marketing literature has argued the importance of building a long-term relationship between the firm and its customers. A relationship is formed through long-term exchanges, as opposed to discrete transactions (Morgan and Hunt 1994). One of the aims of loyalty programs is to transform economic-based exchanges into relational exchanges (Henderson et al. 2011). Relationship investment and relationship benefits can improve objective performance of the firm and different attitudinal constructs such as commitment and trust (Palmatier et al. 2006). Loyalty program benefits such as rewards, personalization, and preferential treatment are perceived as the investment of a firm which seeks to establish long-term relationship; therefore, customers are more willing to stay within the relationship (Odekerken-Schröder et al. 2003). Loyalty programs build relationships through reciprocity, thus reinforce positive attitudes and repeated purchase patterns (Palmatier et al. 2009).

2.6 Factors influencing loyalty program effectiveness

The effectiveness of loyalty programs is dependent on a variety of factors. Some conceptual frameworks try to summarize these factors. For example, Bijmolt et al. (2011) suggested that research design, self-selection effect, operationalization of customer metrics, heterogeneity across customer groups, and types of loyalty programs could be potential reasons of the inconsistent findings in loyalty program research. Liu and Yang (2009) proposed three groups of factors that influence loyalty program effectiveness. They are program-related factors, customer-related factors, and competition-related factors. In addition, literature advances the understanding of

loyalty program effectiveness by incorporating industry characteristics and country level impact such as culture. This section provides a comprehensive review of the factors that influence loyalty program effects.

2.6.1 Program characteristics

This section discusses factors related to the loyalty program per se. Usually, these factors are the design features of loyalty programs. It is critical for companies to understand how these features function then they can leverage loyalty program designs to create programs that maximise their expected performance. Some of the design features are based on the rationales discussed earlier in this chapter.

2.6.1.1 Program enrolment

Loyalty programs differ in their ways of enrolling new members. Usually, there are three aspects to consider when setting program requirements: a) voluntary versus automatic enrolment; b) free to join versus fee-based; c) open versus closed program (Breugelmans et al. 2015; Kumar and Reinartz 2012).

Voluntary enrolment means customers self-select themselves into the loyalty program. With automatic enrolment, firms enrol all customers into the loyalty program without differentiation (Kumar and Reinartz 2012). Based on self-determination theory, when customers who seek to establish relationships with the firm are automatically enrolled in the program, they generate higher profits and lower defection rate, because they consider being enrolled in the program as the firm's response to their willingness to initiate a relationship (Dholakia 2006). Automatic enrolment also generates richer consumers' transactional data for marketing analytics (Kumar and Reinartz 2012). On the other hand, voluntary enrolment is a common practice of loyalty programs because customers who voluntarily join the program may anticipate their increasing or frequent

purchases. Therefore, firms can concentrate frequent buyers in loyalty programs and direct specific marketing practices to them thus avoid wasting resources serving the 'wrong' customers.

Some companies charge a membership fee for joining the loyalty program, e.g. Amazon Prime. A membership fee enhances the utility of the chosen company, therefore induce more positive attitudes toward the chosen company (Dick and Lord 1998). From a sunk costs perspective, membership fees tend to increase consumers' commitment to the company and thus improve behavioural loyalty (Jang et al. 2007). On the other hand, membership fees also contribute to a firm's revenue while having a long-term psychological effects on customers' spending (Chaudhuri et al. 2019). Fee-paying consumers have more favourable attitudes, more positive evaluations of value for money and benefits (Ashley et al. 2016). However, these positive effects occur to customers who have chosen to pay fees. Such a practice is likely to diminish customers' willingness to join the loyalty program.

An open loyalty program allows everyone to join the program, while a closed program selects its members with certain criteria, such as a membership fee or an upfront consumption amount. Each type of programs has its own merits. Open programs acquire members faster than closed programs and can achieve better efficiency due to a larger customer base. Closed programs only enrol members with high interest in the company's offerings, therefore, communications are more effective with this specifically defined segment (Kumar and Reinartz 2012). And closed programs can create a sense of exclusivity, which is desired in industries such as luxuries, high-end hotels, and full-service airlines.

2.6.1.2 Program structure

Frequency reward programs refer to programs leveraging a “buy XXX, get a reward” rule. Frequency reward programs allow customers to earn points for each transaction and redeem the points for rewards when they reach certain point thresholds.

Frequency reward programs are targeting at transaction-focused businesses. A typical frequency reward program can be found in coffee shops, which offer the n^{th} drink for free. The sales impact of frequency reward programs is due to points pressure mechanism and rewarded behaviour mechanism discussed (Blattberg et al. 2010; Taylor and Neslin 2005).

Tiered programs assign customers to different tiers, e.g. bronze, silver, and gold, and provide preferential treatment to customers in higher tiers. Tiered programs use status as a cue for customer loyalty. The hierarchical levels in loyalty programs positively influences the perception of status (Drèze and Nunes 2009). Customers prefer a program in which they have relative advantage in obtaining a reward than others (Kivetz and Simonson 2003). Tiered programs can provide such an advantage by endowing hierarchical status to different customer groups.

A coalition program brings together firms across a range of industries to operate under a single loyalty program (Dorotic et al. 2011). Such a structure can reduce the cost of running the programs, increases the value perception, and allows participating companies opportunities to cross-sell (Berman 2006). Because customers can collect points and redeem rewards at different retailers across a range of products and services, these points and rewards are likely perceived as more valuable than those of single-firm programs.

2.6.1.3 Point structure

Loyalty programs allow customers to redeem for rewards when they reach certain points thresholds. One important element of loyalty program designs is the point structure (Breugelmans et al. 2015). Research into this area mainly focuses on the reward distance, point issuance ratio, and point expiration policy.

Reward distance. Reward distance stands for how much points customers need to collect to redeem for a reward (Bagchi and Li 2011). Researchers often refer a reward redemption threshold as a goal. The goal-gradient hypothesis states that the tendency to approach a goal increases with proximity to the goal (Hull 1932; Kivetz et al. 2006). Analogously, it is hypothesised that customers would accelerate their purchases as they get close to the redemption threshold. Empirical work finds evidence of this contention. In a coffee reward program, Kivetz et al. (2006) find that customers purchase coffee more frequently as they approach to the free drink. Based on this observation, companies can manipulate customers' perception of progress in loyalty programs to induce higher purchase incidence. For example, a 12-stamp coffee loyalty card with 2 stamps already completed is more effective in accelerating purchases than a 10-stamp card without any stamp (Kivetz et al. 2006; Nunes and Drèze 2006). Further to this finding, it has been found that the clarity of point issuance ratio, which Bagchi and Li (2011) refer as step size ambiguity, moderates the relationship between perception of progress and purchase incidences. Also, the framing of the progress affects consumers' motivation to pursue the goal. According to Koo and Fishbach (2014), motivation is a product of goal commitment certainty and lack of progress in goal-pursuit. When the goal commitment is uncertain, focusing on the progress achieved ("to-date" information) signals high commitment and increase motivation. On the contrary, when the goal commitment is certain, information about the distance to be completed ("to-go" information) signals a lack of progress, and therefore increase motivation. Further investigation finds that the progress cues impact motivation only

when the goal is halfway, i.e. not close to the start or end of the goal-pursuit process, and only for people with an abstract mind rather than a concrete mindset (Wiebenga and Fennis 2013).

Point issuance ratio. Point issuance ratio determines how much points customers earn by a certain amount of spending (Bagchi and Li 2011; Breugelmans et al. 2015).

Numerosity research shows that the unit effect can affect consumers' perceptions in various contexts. A unit effect occurs when consumers fail to take the unit into consideration when evaluating quantitative information, so that the attribute difference of an objective would be higher if indicated on an expanded scale (Pandelaere et al. 2011). Nonetheless, another theory, unitosity, indicates a reverse effect which states that a larger size of unit magnifies the difference instead of a larger number when the unit information is more prominent than the quantitative information (Monga and Bagchi 2012). Furthermore, the authors find that consumers' construal level to be the determinant of information salience – concrete minded consumers yield a numerosity effect, while abstract-minded consumers present a unitosity effect. These research findings suggest that quantitative and unit information can influence customer perceptions. And they shed lights on the thinking of designing the optimal reward distance and point issuance ratio, e.g. 10 points for a reward or 1000 points for a reward? Points should be issued on the basis of purchase frequency or purchase amount? How many points should be issued for a certain amount of spending? These issues should be considered in an integrated format. Bagchi and Li (2011) show that consumers use two pieces of information to evaluate their progress of approaching a reward – the reward distance, which is discussed in the previous section, and point issuance ratio, also referred as step size. They further identify step size ambiguity as an important moderator in this relationship. When the step size is ambiguous, customers seem only rely on reward distance to evaluate their progress in the loyalty program. And when the step size is less ambiguous, reward distance and step size will

jointly determine progress perceptions. They differentiate programs into high magnitude and low magnitude in terms of the step size (e.g. 10 points/dollar in a program with 1000 points to be completed vs. 1 point/dollar in a program with 100 points to be completed). In the high magnitude program, the step size is large, so the impact of reward distance decreases. While in the low magnitude program, the effect of reward distance is stronger in relative to the high-magnitude program.

Point expiration policy. Whether to have an expiration policy regarding unredeemed points is an issue lacks research. Some companies operate a “no-expiration” policy to avoid negative customer experiences. On the other hand, without expiration pressures, customers may be reluctant to engage in loyalty program activities (Dorotic et al. 2014). Point expiration policy may change consumers’ spending patterns within loyalty programs (Xie and Chen 2013). To date, limited empirical attention has been given to this issue. Lewis (2004) has found that when reward redemption date approaches, customers are more likely to increase their spending level. Liu et al. (2016) also reveal a similar effect. This result indicates that having an expiration policy increases points pressure effect. Breugelmans and Liu (2013) compare sales before and after imposing a time horizon of loyalty program points and find that members make small purchases at the end of the month to reach the deadline. But this is only for the existing members, new members’ spending seems to dilute the average.

2.6.1.4 Reward structure

The aforementioned behavioural learning theory suggests that reinforcements are the key to behaviour change, to maximise the effect of behavioural learning, it is necessary to consider different reinforcements – in this case, the rewards of loyalty programs. Designing the reward content to deliver high values to customers is challenging. This section discusses how different reward designs can shape loyalty program performance.

Reward types and reward timing. There are various classifications of rewards. It is generally believed that direct rewards (rewards that are directly linked with the company's key offerings) are superior to indirect rewards (other rewards which are not directly related to the company's key offerings), and immediate rewards are better than delayed rewards in terms of inducing loyalty (Jang and Mattila 2005). However, this proposition is conditioned upon some factors. For example, Keh and Lee (2006) find that satisfaction with service experience moderates this relationship in that satisfied customers prefer delayed rewards, while dissatisfied customers prefer immediate rewards. Yi and Jeon (2003) suggest consumer involvement influences the effect of types and timing of rewards on value perceptions of the loyalty program. Under the high involvement condition, members prefer direct rewards to indirect rewards, while the timing of rewards does not have a significant main effect. And under the low involvement condition, immediate rewards are more effective than delayed rewards in delivering program value, regardless of the type of rewards.

Rewards can also be differentiated between monetary and non-monetary rewards. These two types of rewards differ in terms of their utility offered to customers (McCall and Voorhees 2010). Monetary rewards are considered with high acquisition utility, which is the value of the product/service acquired relative to its price (Thaler 1999). Other rewards do not provide direct economic benefits to customers, instead, some soft benefits are provided, such as social recognition, invitations to exclusive offers, and enjoyment. These rewards have limited acquisition utility but are high in exchange utility, which is the contributions to strong social relations (Frenzen and Davis 1990). Both monetary and non-monetary rewards are important to loyalty programs as they positively affect program participation (Leenheer et al. 2007). In terms of their contributions to relational outcomes, social benefits are more effective in inducing affective commitment, while economic benefits produce higher continuance commitment (Melancon et al. 2011). This is consistent with previous research which

states that affective commitment arisen from emotional bonds creates more enduring loyalty than continuance commitment produced by economic incentives (Evanschitzky et al. 2006).

Consumer characteristics must be taken into consideration in reward structure because consumer heterogeneity affects preference for rewards. For example, Kim et al. (2001) suggest that for heavy-users with high price sensitivity, it is effective to use cash rewards. Since cash rewards have high unit reward cost, companies can reward price-insensitive light-users with free product/services, which have less unit reward cost, to mitigate the financial pressure of issuing cash rewards for the heavy-user segment. Kivetz and Simonson (2002) finds that higher perceived effort level of program requirements leads to preference for luxury rewards rather than necessity rewards. Melnyk and van Osselaer (2012) observe that men prefer rewards highlight visible status, while women prefer personalised rewards in private settings. These findings imply that companies might need to deploy a segmentation strategy to allocate optimal rewards to specific customers. The role of consumer characteristics in loyalty programs will be discussed in more details in a later section.

Reward framing. In one of the previous sections the effect of framing of loyalty program progress is discussed. Relatively limited research has tested the framing of rewards. Daryanto et al. (2010) use regulatory focus theory to examine the effect of loyalty program rewards framing. According to the theory, there are two strategies of self-regulation: promotion and prevention. A promotion strategy focuses on gains and avoidance of nongains. Conversely, a prevention strategy emphasises on pursuits of nonlosses and avoidance of losses. In the promotion (prevention) situation, a gain (loss)-framed reward message enhances value perception. Roehm and Roehm (2011) argue that the short versus long redemption period can influence customers' response to the face value of the reward. If the redemption period is short, customers would prefer the reward framed in dollars rather than in percentage, whereas if the

redemption period is long, this difference in preference of framing information is not evident.

2.6.2 Firm characteristics

2.6.2.1. Market share

Certain characteristics of the firm which operates the loyalty program are likely to influence loyalty program performance. Typically, the double jeopardy phenomenon can explain some deviance in the effectiveness of different programs. The double jeopardy phenomenon describes the situation that in competitive markets, larger brands tend to have more buyers who purchase more frequently than small brands do, therefore, small brands suffer from “double jeopardy” – fewer buyers who purchase less frequently (Ehrenberg et al. 1990). In the subsequent work on the double jeopardy phenomenon, Ehrenberg and Goodhardt (2002) argue that such a market regularity is a constraint to a firm’s marketing practices enhancing customer loyalty, because loyalty cannot be largely increased unless the brand’s penetration increases. The double jeopardy effect on loyalty program performance is obvious – loyalty programs are more appealing to customers who purchase frequently, and large brands tend to have higher proportions of heavy buyers in their customer base (Sharp and Sharp 1997). Thus, it is expected that loyalty programs are more effective with large brands. And this contention has received some empirical examinations. In an analysis of American frequent flyer programs, Nako (1992) identify an effect of the company’s market share on the value of its loyalty programs. The author reports an increase of 10 per cent in an airline’s airport market share increases the value of its frequent flyer program by 4.16 dollars.

2.6.2.2 Firm size

Liu and Yang (2009) analyse the effect of individual firms' market shares as well as the market saturation on loyalty programs. The results propose that the higher the market share of a company, the higher the sales generated by its loyalty program. This is because larger firms have more complementary products to provide opportunities of cross-selling and operate more customer resources to boost sales. This is consistent with the double jeopardy effect found by Sharp and Sharp (1997) in their Dirichlet model. The study also detects that the more crowded the marketplace is, the less the effect of loyalty programs. Liu and Yang (2009) also identify a situational factor of this relationship – the expandability of product category. For categories with low expandability, the negative effect of market saturation on loyalty program performance holds; while under the high category expandability condition, this negative relationship disappears. This is because the category expandability can extend the competitive advantages of the loyalty program into other product categories where the competition is less intense.

2.6.2.3 Other marketing initiatives

Sales promotions are usually compared with loyalty programs because they both provide customers with economic incentives. Loyalty programs and sales promotions can be distinguished by their strategic goals and time horizons (Sharp and Sharp 1997). Loyalty programs are usually long-term orientated and aim to create enduring effects on customer relationships and their spending behaviour. Sales promotions are short-term in nature and do not seek to reinforce customer purchase and usage behaviours. Therefore, customers revert to their original purchase patterns after the sales promotion period. A few studies compare the effects of loyalty programs and sales promotions. Zhang et al. (2000) find that sales promotions like price packs and coupons which provide immediate benefits are more profitable in inertial markets.

Loyalty programs usually provide benefits upon next purchases, these benefits are most effective in variety-seeking markets. In modelling the promotional revenue bump between members and non-members from six clothing stores, van Heerde and Bijmolt (2005) report that non-members are more responsive to price discounts than members. These findings suggest that it might be useful to use sales promotions and loyalty programs complementarily to target different customer segments. Liu et al. (2019) finding of that loyalty program members are less sensitive to price promotions when facing large points/time pressure is also in support of this proposition. In addition to this, Lewis (2004) investigates the interaction effect between sales promotions and loyalty programs and finds a slight synergetic effect.

Choosing appropriate communication strategies is crucial to convey loyalty program offers and benefits to members. Managers should consider employing the right communication vehicles to enhance consumer attitudes and behaviours within the loyalty program. A notable research in this domain is from (Dorotic et al. 2014), who investigate how the number of direct mailings impacts on customer redemption behaviours. They find a significant interaction effect of direct mailings and customer age – mailings encourage redemption behaviours for older members. It is still unclear how marketing communications strategies can be used jointly with loyalty programs to yield desired outcomes. Particularly, the frequency of communications and the communication channels need to be carefully considered. In addition, with the development of communication technology, firms can consider using new platforms for loyalty program communications, e.g. mobile apps.

Loyalty programs collect rich customer data through customer registration procedure and use of loyalty programs. These data can be used to provide customised marketing strategies for individual customers. Preferential treatment and personalisation increase relational bonds between customers and firms and therefore enhance their behavioural loyalty (Lacey et al. 2007). Liu et al. (2019) also suggest that integrating loyalty

program with personalised promotions strategies can increase the firm's sales revenue. With the prevalence of big data analytics in marketing, firms should consider how to make the best use of loyalty program data to devise more personalised offers for customers.

2.6.3 Customer characteristics¹

Consumer heterogeneity is one of the potential reasons of the divergent loyalty program performance (Bijmolt et al. 2011). Consumers may react differently to the same loyalty initiatives. These consumer-related factors can be differentiated between firm/product specific factors, which are related to a particular firm, and generic consumer traits and characteristics, which are consistent across all firms (Liu and Yang 2009). This chapter adopts this classification and discusses the impact of consumer characteristics on loyalty program performance.

2.6.3.1 Characteristics related to specific firm/product category

a. Firm/product-specific behavioural characteristics

Initial usage levels. Segmenting consumers according to their usage levels has been found to reveal significant results – the highest sales increase is found amongst moderate and light users, not heavy users as the general wisdom hypothesised (Lal and Bell 2003; Liu 2007). This is because loyalty programs can eliminate cherry-picking and encourage cross-selling (Liu and Yang 2009). Heavy buyers tend to make most of the purchases of the product category from the company, therefore, there is no room for them to raise their purchase level. On the contrary, moderate and light buyers

¹ Customer characteristics are not included in the conceptual framework (Figure 3.1) guiding this meta-analysis due to unavailability of sufficient data.

spread their spending of the category over several companies. And the loyalty program helps to concentrate their purchases on the same company.

Firm/product-specific attitudinal characteristics. Consumer attitudes towards the firm or the product assortment play an important role in determining loyalty program effectiveness. Typically, customer-program fit has been discussed by some scholars as one of the keys to loyalty program success (Kivetz and Simonson 2003; McCall and Voorhees 2010). It has been argued that the more a customer perceives that what the loyalty program offers align with his/her needs, the more the customer would engage in loyalty program activities. This perception of fit can arise from rational assessment as well as emotional attachments.

Yi and Jeon (2003) report that consumer involvement level affects the relationship between loyalty program value perception and brand loyalty. Under the high involvement condition, the value perception has a direct effect on brand loyalty as well as an indirect effect via program loyalty. But for the low-involvement segment, the value perception affects brand loyalty only through program loyalty.

2.6.3.2 General consumer traits and characteristics

There are some generic consumer characteristics that researchers consider important to loyalty programs. They are usually consistent across all firms.

Shopping orientations. Mägi (2003) finds a significant moderation effects of consumer shopping orientations on the relationship between satisfaction and customer shares. Higher satisfaction leads to a higher share of purchase for consumers with low economic orientation than consumers with high economic orientation. In addition, personalising orientation negatively moderate the link between satisfaction and customer shares (share of visit and share of purchase). This implies that customers with an orientation to initiate personal relationships with employees are less likely to

decrease their visits and purchases due to dissatisfaction. In another word, personalising orientation mitigates the negative influence of dissatisfaction on customer shares. Meyer-Waarden et al. (2013) also investigated the effect of consumer shopping orientations. The authors suggest that the shopping orientations determine the preference for rewards. Economic orientated consumers are best motivated by economic rewards, as well as informational rewards about offers and discounts. This is consistent with the result from Kim et al.'s (2001) study, which suggests that for price-sensitive customers, cash rewards are the optimal reward type. Social-relational shoppers prefer recognition and social relationships with sales employees. For apathetic buyers who want to shop quickly and effectively, providing convenience rewards improves purchase intention and resistance to counter-persuasion. Conversely, providing social rewards to them even has a negative impact. These findings urge managers to think about appropriate segmentation strategy, or a variety of reward options, to ensure that rewards yield the best effect.

Privacy concerns. Since loyalty programs collect various customer data, obtaining loyalty program benefits requires customers to share some of their personal information with companies. This requirement creates some privacy issues. Especially, the privacy concerns are found to impact on customers' willingness to participate in loyalty programs (de Wulf et al. 2003; Leenheer et al. 2007). Equity theory and Exchange theory suggest that consumers are generally willing to exchange their personal information if they perceive that they would be rewarded for benefits, although this exchange is dependent on what information is collected and the types of benefits provided (Lacey and Sneath 2006). Therefore, when designing loyalty program, managers are also advised to consider what types and magnitude of rewards increase consumer willingness to share their information with companies.

Socio-demographic factors. Demographic factors are also considered by researchers. Leenheer et al. (2007) find that the household size does not moderate the loyalty

program effects. In an early analysis of a frequent-flyer program, Toh and Hu (1988) report that members of the frequent-flyer program has higher annual income and are older in average than non-members. And as mentioned in the previous chapter, gender plays a role in determining preference for rewards (Melnyk and van Osselaer 2012).

2.6.4 Industry characteristics

Competition factors can be classified into two categories, general competition in the market, and loyalty program competition (Liu and Yang 2009). For loyalty program competition, there is multiple evidence to reveal that the more loyalty programs in the product category, the less the effect of loyalty programs. For example, Mägi (2003) finds that the effect of a loyalty program may be cancelled out if the member holds multiple cards in the same product category. This result suggests that managers and researchers should analyse loyalty program members' card-portfolio when assessing loyalty program performance. Meyer-Waarden (2007) demonstrates that simultaneous possession of multiple cards of geographically close retailers reduces customer lifetime duration. Leenheer et al. (2007) also find evidence that the effect of loyalty program on share-of-wallet decreases as the number of competitive loyalty program memberships increases.

2.6.5 Country characteristics

2.6.5.1 National culture

The external environment of loyalty programs is a non-negligible factor for loyalty program effectiveness. Beck et al. (2015) argue the importance of considering loyalty programs in an international context, accounting for national culture and economic factors. There are increasing empirical attention paid to the country characteristics that influence loyalty program effectiveness. These studies mostly assess Hofstede's

cultural dimensions (Hofstede 2001) in relation to loyalty programs, perhaps because Hofstede's cultural framework is the most widely used cultural classification in literature. Other cultural frameworks such as World Value Survey (Inglehart et al. 2014) and Schwartz Value Survey (Schwartz 1992) are not examined within the loyalty program context. A number of studies investigate how culture shapes customers' preference for loyalty program rewards. Thompson and Chmura (2015) find that cultural factors influence customers' preference for loyalty program rewards. Consumers from countries with high power distance and low individualism would prefer related rewards. While consumers from countries with low masculinity and low uncertainty avoidance would prefer unrelated rewards. Hwang and Mattila (2018) further find that customers in Eastern Asian culture prefer luck-based rewards instead of loyalty-based rewards. So, rewards framed as earned in "lucky draws" are more effective for Eastern Asian customers. In another study (Park et al. 2013), authors find that customer's long-term orientation moderates customer's preference for rewards. For customers with long-term orientation, timing and type of rewards does not matter much to them. However, customers with short-term orientation would prefer monetary rewards than nonmonetary rewards, and immediate rewards than delayed rewards.

Another stream of research links national culture to specific performance outcomes, e.g. satisfaction, customer loyalty or firm performance. Noordhoff et al. (2004) compare Singaporean customers with Dutch customers and conclude that loyalty programs have higher effectiveness in attitudinal and behavioural loyalty for Singaporean customers. Wang and Lalwani (2019) uncover that two dimensions of power distance, power distance perception and power distance value, have differential effects on customer responses to loyalty programs such as satisfaction. Power distance perception enhances satisfaction for loyalty program members, while power distance value decreases satisfaction for members. In assessing firm performance, Bombaj and

Dekimpe (2019) find that individualism and long-term orientation positively contribute to a retailers' sales productivity.

Research on culture's influence in other fields of marketing also has implications for loyalty program effectiveness. National culture that influences loyalty program mechanisms (as discussed in Table 2.2) inevitably influences loyalty program effectiveness. And this stream of literature should not be overlooked. A meta-analysis (Samaha et al. 2014) assesses relationship marketing effectiveness in an international context give some initial empirical evidence about how loyalty programs may perform with different culture dimensions, because a loyalty program is part of the firm's relationship marketing effort. Generally, they find that individualism and masculinity decrease relationship marketing that relies on long-term social bounding and relationship building, while uncertainty avoidance and long-term orientation increase the effectiveness as relationship marketing activities reduce uncertainty that is hindering the formation of stable relationship and increase status-based loyalty. Similar relationships should be considered in loyalty program research as well, because loyalty programs function through creating status, relationship, etc. Another example is switching costs, one of the drivers of loyalty program effectiveness. The consequences of switching costs are dependent on the cultural context. Individualistic culture and high power distance culture make switching costs less effective in creating behavioural loyalty and word-of-mouth behaviour (Pick and Eisend 2016).

2.6.5.2 Economic factors

The economic factors receive less empirical tests in loyalty program research. Beck et al. (2015) propose three economic contingency factors that might influence loyalty programs effectiveness. First, how wealth is distributed amongst members of society can play a role. Larger inequality in the distribution of resources reduces general trust in society. Therefore, the effectiveness of loyalty programs generating customer trust,

which lead to positive customer behavioural and attitudinal responses, will be reduced. Another factor is technological capital, which refers to the capacities to invest and exploit innovative technologies. Countries high in technological capital can better utilise technology for managing customer relationships and loyalty programs, resulting in better effectiveness. The last factor is security. Lower level of security increases psychological effort of coping with insecurity, thus customers may rely on their prior choices of products to reduce psychological fatigue of processing product information and competitors' marketing. On the other hand, lower level of security reduces institutional trust. Taken together, as the level of security increases, loyalty program effectiveness should increase as well. To date, none of the three factors has received empirical investigation.

2.7 Summary and implications for the current study

2.7.1 Inconsistency in loyalty program literature

Researchers have adopted various measures to capture loyalty program effectiveness. To study customers' purchase behavioural responses to loyalty programs, Meyer-Waarden (2008) assesses purchase intensity and frequency, inter-purchase time, and SOW in seven supermarket loyalty programs and find loyalty program members exert higher performance on these indicators than non-members. In financial services and grocery retailing respectively, Verhoef (2003) and Leenheer et al. (2007) also find that loyalty program membership positively affects SOW. Loyalty card holders display longer lifetime durations than non-holders (Meyer-Waarden 2007). In terms of sales, using simulation, Lewis (2004) estimates that if eliminate the loyalty program, the mean annual revenue for each customer would drop by 13 dollars. Yet, there are voices questioning the effectiveness of loyalty programs. In examining grocery retailing loyalty programs, Lal and Bell (2003) argue that the increase of sales by loyalty programs is due to casual shoppers' cherry-picking behaviour. Loyalty programs thus only change

purchase behaviours of low-spending customers who are attracted by discounts, not the most loyal consumers. Liu (2007) observes the same phenomenon. Furthermore, Meyer-Waarden and Benavent (2009) state that loyalty programs only change behavioural patterns temporarily. Sales increases induced by loyalty programs do not sustain over long-term. Attitudes and commitment cannot be changed by short-term behavioural reinforcement. While Taylor and Neslin (2005) argue that after loyalty program rewards, customers' consumption behaviour does not drop to pre-reward level immediately.

Despite this, research finds some evidence that supports loyalty programs' positive effects on attitudinal outcomes. Gómez et al. (2006) conduct comparisons between supermarket loyalty program members and non-members and find that members not only exert higher behavioural loyalty, but also higher attitudinal loyalty including positive attitude, satisfaction, trust, and commitment. Bolton et al. (2000) find that loyalty program members of credit cards tend to overlook negative service experiences and are less sensitive to price advantages of competitors. However, Lacey (2009) finds no differences between loyalty program members and non-members of a department store in terms of word-of-mouth, marketing research support, personal information sharing, and openness to firm promotions. This casts a doubt of how effective loyalty programs are in building deep and sustainable relationships with customers. Thus, it is unclear how loyalty program membership affects attitudinal outcomes such as satisfaction, trust, commitment, willingness-to-pay, word-of-mouth, service quality perception, value perception, and brand perception.

Given the inconclusive evidence regarding loyalty program effectiveness in the literature, there is a need to quantitatively synthesise prior empirical findings. While there are a number of narrative reviews on loyalty programs (Bijmolt et al. 2011; Xie and Chen 2013), using meta-analysis has several advantages such as quantifying the strength of relationships of interest, determining consistency of results, and explaining

variations in results (Grewal et al. 2018). To address this gap in the literature, this thesis uses a meta-analytic approach to integrate extant literature of loyalty program effects on key customer response outcomes such as repurchase behaviour, repurchase intention, satisfaction, trust, commitment, service quality perception etc.

2.7.2 Need for an Integrated framework of moderators of loyalty program effectiveness

This chapter discussed miscellaneous factors that influence loyalty program effectiveness. Researchers have developed conceptual models that summarize these factors (Dorotic et al. 2012; Kim et al. 2020; Liu and Yang 2009; McCall and Voorhees 2010). However, the empirical examination of these integrated models is scarce in the literature (Bombajj and Dekimpe 2019; Chaudhuri et al. 2019). They assess loyalty program effectiveness at the firm level, overlooking individual attitudinal and behavioural change. This is possibly due to the difficulty in obtaining appropriate data to conduct such analysis, because it requires a sample across different loyalty programs, industries, and countries to assess factors related to program design, industry characteristics and macro environment. Most of the current research on loyalty program effectiveness concentrates on a single program or industry, therefore limiting the generalisability of results.

To address this gap in the literature, this thesis proposes an integrated framework that accounts for the firm-level, industry-level, and country-level moderators that might impose influences on customer outcomes. Meta-analysis can combine study results from different programs, industries, and countries, making testing moderators at these levels possible. Using this advantage, this thesis is able to test a number of novel moderators which are difficult to test in primary research. For example, product categories are rarely tested in prior research. This thesis efficiently addresses this issue by investigating whether loyalty programs perform differently on services vs. goods, durables vs. non-durables, and hedonic vs. utilitarian purchases. Although prior

studies tested the influence of culture on loyalty program performance (Bombaij and Dekimpe 2019; Wang and Lalwani 2019), they use only one or two elements of culture in their studies. This thesis comprehensively tests Hofstede's cultural framework. In addition, it also proposes interactions of moderators between different levels. This allows exploration of loyalty program effects in complex situations.

Furthermore, Bijmolt et al. (2011) suggest that different research methods and customer metrics used might be a cause of inconsistent loyalty program effectiveness. The meta-analysis can be used to assess the impact of different research methods as it analyses results from various research design settings.

This chapter reviews the factors which influence loyalty program effectiveness. To integratedly assess the impact of these moderators, the next chapter presents a conceptual framework which includes the variables of moderating effects tested in this thesis. However, not all the relevant factors are examined. This study intends to investigate the most critical factors. Some of them were tested in empirical studies but the results are inconclusive. Some other factors were examined for the first time, e.g. product categories and economic factors. Another reason for selecting these variables is that meta-analysis only collects secondary data, which is reported by researchers in respective studies. Therefore, some moderators cannot be tested due to the unavailability of data. Because of this reason, customer characteristics are not tested in this study since relevant data cannot be obtained.

Chapter 3

Conceptual Framework and Hypotheses Development

3.1 Introduction

This chapter is aiming at outlining the framework of the meta-analysis and developing hypotheses for moderators. The direct effects between loyalty program membership and customer response outcomes are not hypothesised because they have been extensively discussed in literature (see Table 2.2 for the mechanisms of loyalty programs). After reviewing the literature, this study assesses three levels of moderators: 1) program/firm level (coalition programs, tiered programs, and firm size); 2) industry level (durability, services vs. goods, hedonic vs. utilitarian purchases, and market concentration); 3) country level (national culture, GDP per capita, consumer confidence index [CCI], and consumer price index [CPI]). Prior studies have examined some moderators at these three levels. This study further tested a few moderators which have not been tested. A summary of the moderators tested in comparable studies and this study is provided in Table 3.1.

Additionally, researchers have argued for several merits of meta-analysis, which include assessing the variation in effect sizes attributed to different research methods used (Grewal et al. 2018). Therefore, this study also examines a set of method moderators. The conceptual framework is presented in Figure 3.1.

Table 3.1 Prior empirical studies on loyalty program effectiveness

Moderator	Chaudhuri et al. (2019)	Bombaij and Dekimpe (2019)	This study²
Coalition program		√	√
Tiered program	√	√	√
Membership fee	√		
Reward timing		√	
Reward type		√	
Firm size	√	√	√
Price strategy		√	
Retailer type		√	
Durability			√
Services vs. goods			√
Hedonic vs. utilitarian			√
Market concentration		√	√
Power distance			√
Individualism		√	√
Masculinity			√
Uncertainty avoidance			√
Long-term orientation		√	√
GDP per capita		√	√
CCI			√
CPI			√

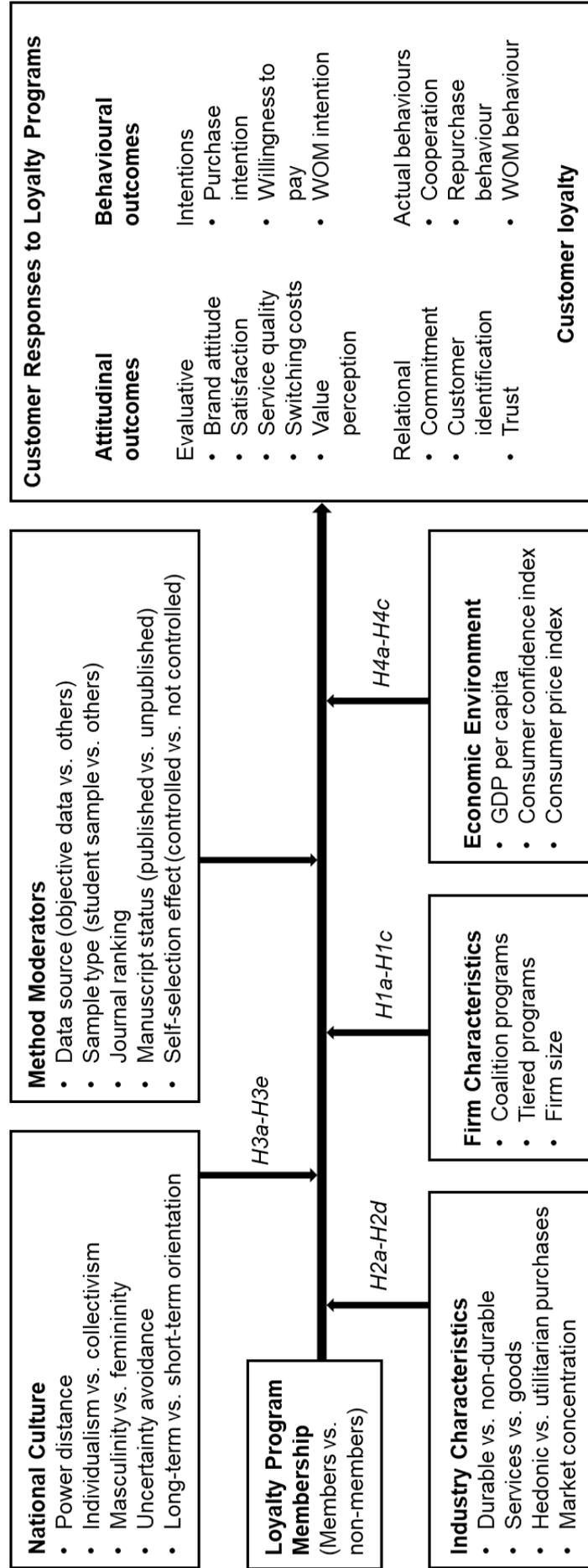
3.2 Program/firm characteristics

At the firm level, two features related to loyalty programs, coalition structure and tier structure, as well as firm size are assessed in the model. Scholarly views on these two types of programs are inconclusive and therefore call for a meta-analytic examination.

In addition, the size of the firm also has been argued to influence loyalty program

² Due to secondary data availability, this study can only test two program characteristics – coalition program and tiered program. As a result of this data limitation, membership fee, reward timing, reward type, price strategy and retailer type are not included in the meta-analysis.

Figure 3.1 Conceptual framework



effects. Uncles et al. (2003) presented the double jeopardy phenomenon suggesting that larger firms have more customers that buy more frequently. To assess this proposition in the loyalty program context, this thesis also tests whether loyalty program effects differ for large and small firms.

3.2.1 Coalition programs

The structure of loyalty programs takes various forms depending on the industry and company objectives. A coalition program brings together firms across a range of industries to operate under a single loyalty program (Dorotic et al. 2011; Schumann et al. 2014). Such a structure can reduce the cost of running individual loyalty programs, increase the value perception of the joint program, and allow participating companies opportunities to cross-sell products and services (Berman 2006). Customers can collect points and redeem rewards at different retailers across a range of products and services. Therefore, the points and rewards of coalition loyalty programs may be perceived as more valuable and with enhanced utility comparing to single-firm programs. The switching costs of terminating using a coalition program may be high for many customers. Research has uncovered a spill-over effect of coalition programs. For example, customers are more likely to cross-buy services of coalition program partners and cross-buying behaviour reinforces the purchase of core service (Lemon and Wangenheim 2009). In the situation of service failure, the special treatment benefits provided by coalition programs can mitigate the negative effect of service failure on customer loyalty (Schumann et al. 2014). Therefore:

H_{1a}: The effects of loyalty program membership on customer outcomes are stronger for coalition than non-coalition programs.

3.2.2 Tiered programs

A tiered program, like Hilton Honors, splits customers into hierarchical levels based on specific program rules and rewards members with different levels of preferential treatment such as social status recognition and enhanced products and services beyond standard offerings (Lacey et al. 2007). Tiered programs provide greater symbolic values than non-tiered programs. By offering increasing levels of rewards and symbolic benefits, tiered programs can induce learning process that promote repurchase and customer engagement behaviours, and thus develop habitual buying (Bijmolt et al. 2018). Furthermore, symbolic benefits inherent in tiered programs can enhance satisfaction and trust (Stathopoulou and Balabanis 2016). Lacey et al. (2007) find that customers who receive preferential treatment provided by tiered programs create emotional attachment to the marketing relationship. Nevertheless, there are arguments that tiered programs increase loyalty only for higher tier customers. For example, observing others receiving certain benefits might feel like a loss to customers in lower tiers. Hence, the increase in loyalty of customers in high tiers might be offset by decreases in loyalty of low-tier customers who observe others being rewarded (Steinhoff and Palmatier 2016), possibly leading to no positive net effect of tiered programs. However, a recent study (Sajtos and Chong 2018) finds that tiered programs are not a “zero-sum game”. Based on social comparison theory, it is suggested that both upward comparison (compare with members with higher tiers) and downward comparison (compare with members in lower tiers) in a tiered program are advantageous by either encouraging loyalty to reach a higher status or being rewarded for having achieved higher status. Thus:

H_{1b}: The effects of loyalty program membership on customer outcomes are stronger for tiered than non-tiered programs.

3.2.3 Firm size

Although the adoption of loyalty programs is not limited by the firm size, larger firms have more resources to invest in their loyalty programs than smaller firms. The double jeopardy phenomenon suggests that market share is a very important element for loyalty programs as larger firms have more customers who buy more intensively, and smaller firms have fewer customers who buy less frequently (Uncles et al. 2003). This phenomenon suggests that large firms which have more members may obtain higher returns from loyalty programs than small firms. In addition, loyalty programs can provide firms an opportunity to cross-sell their products (McCall and Voorhees 2010). Small firms may have limited product lines, while large firms are more capable of product diversification, therefore have more product lines. This gives large firms an advantage of cross-selling their products to loyalty program members. (Liu and Yang 2009). Therefore,

H_{1c}: The effects of loyalty program membership on customer outcomes are stronger for large than for small firms.

3.3 Industry characteristics

Loyalty programs have been examined in various industries. However, there are only a few studies that use cross-industry samples (de Wulf et al. 2001). We propose that product/service characteristics and market concentration may influence loyalty program effects.

3.3.1 Durability

The durability of the products might be an important factor because durable goods consumers usually make a substantial amount of spending and then do not return to the market for a long period (Grewal et al. 2004). For individual customers, the quantity

and frequency of durable products demanded are not as high as non-durable products or services. For consumers with low absolute demand, loyalty program effectiveness might be less significant (Liu 2007). Infrequent purchases may inhibit habit formulation. In durable goods sectors, customers may not perform habitual purchases as encouraged by loyalty programs. This is also because that durable products present higher financial risk to customers. Customers are likely to search for more information about durable products prior to purchase. While habitual purchases are made non-consciously, with minimal mental effort, therefore are unlikely to happen when purchasing durable goods. Also due to the elaborative information gathering before purchasing durable goods, customers possess a high expectation of product performance (Abernethy and Franke 1996; Engel et al. 1995). Customers may be more critical when evaluating the performance of durable products. Therefore,

H_{2a}: The effects of loyalty program membership on customer outcomes are stronger for non-durable products than for durable products.

3.3.2 Services vs. goods

Loyalty program effects for services and goods are also expected to be different, as the quality and performance of services are more difficult to evaluate due to higher heterogeneity and intangibility of services (Parasuraman et al. 1985). Therefore, service purchases are considered riskier than purchases of goods (Murray and Schlacter 1990). Perceived switching costs may be higher in services industries than in goods industries since customers want to avoid the risk and uncertainty from switching to a new supplier. Research has demonstrated that expectations are less important in forming positive attitudes for services than for goods (Szymanski and Henard 2001) because customers have less opportunities to obtain quality information prior to the experience of the service. This may lead to better sales outcome for services than for goods (Verbeke et al. 2011).

H_{2b}: The effects of loyalty program membership on customer outcomes are stronger for services than for goods.

3.3.3 Hedonic vs. utilitarian purchases

Consumers have different perceptions about buying utilitarian compared to hedonic products. Loyalty programs may influence these perceptions through its rewarding nature and thus results in different performance for these two types of purchases.

Utilitarian consumption is motivated by a desire to fulfil a functional need, while hedonic consumption is motivated by the desire for sensual pleasure, fantasy and fun (Strahilevitz and Myers 1998). As hedonic purchases are not necessary, customers generate feelings of guilt when making such purchases (Okada 2005). When guilt is mitigated, reactance to purchase hedonic products is reduced (Kivetz and Zheng 2006). To relieve the guilt, customers tend to justify the hedonic purchases through finding deals (Choi et al. 2014). For example, the benefits that loyalty program members enjoy can help customers to justify hedonic purchases. Kivetz and Zheng (2017) argue that promotional activities such as discounts, coupons, and loyalty program rewards are more effective when the nature of the product is hedonic rather than utilitarian. Moreover, research substantiates that the utilitarian value of the product category has a negative effect on brand affect, while hedonic value positively influences brand affect (Chaudhuri and Holbrook 2001). Therefore, for hedonic purchases, loyalty programs can strengthen the positive affect arising from the product category, thus leading to more favourable customer responses.

H_{2c}: The effects of loyalty program membership on customer outcomes are stronger for hedonic purchases than for utilitarian purchases.

3.3.4 Market concentration

Market concentration is also considered because competition is an important factor that shapes loyalty program effectiveness. A low market concentration leads to a higher level of competition among firms. Under such a condition, there are many players in the same industry with relatively smaller market share. They are likely to launch loyalty programs (Liu and Yang 2009). Customers may opt-in loyalty programs of different firms competing in the same industry, resulting in cancelling out the effect of individual loyalty programs (Mägi 2003). Thus, launching loyalty programs under competitive pressure is unlikely to have lasting consequences because the market will settle down to its old level (Dowling and Uncles 1997). Conversely, in a highly concentrated market with a small number of firms with high market shares, customers of these firms exhibit excess behavioural loyalty (Fader and Schmittlein 1993). Hence,

H_{2d}: The effects of loyalty program membership on customer outcomes are stronger in industries with high concentration than with low concentration.

3.4 Country characteristics³

This thesis also considers country characteristics such as national culture as moderators. Culture is the patterns of thinking, feeling, and reacting that shape human behaviour and distinguish members of a group from others (Hofstede 2001; Kluckhohn 1951; Kroeber and Parsons 1958). National culture is often considered in marketing research as it can cause systematic differences in people's perceptions and behaviours (Steenkamp 2001). Researchers suggest that Hofstede's cultural dimensions interfere with loyalty program mechanisms and result in different loyalty

³ The sixth dimension of Hofstede's culture framework, Indulgence, is not included in the conceptual framework of this study, because the conceptual framework is based on prior research on culture and loyalty programs (Samaha et al. 2014, Beck et al. 2015). They did not consider this dimension in their studies, which provide no theoretical foundation for this relationship.

program effectiveness (Beck et al. 2015). Therefore, this thesis incorporates Hofstede's cultural dimensions. Besides culture, this thesis also includes indicators of a nation's economic environment. Economic factors are viewed as control mechanisms and they are potentially strong moderators of customer responses (Estelami et al. 2001). Empirical examination of the effects of economic factors on loyalty program effectiveness is rare. However, there are some evidence that macroeconomic factors such as GDP per capita influences consumers' perception of switching constraint, which consequently impacts loyalty program effectiveness.

3.4.1 Power distance

First, power distance refers to the degree to which less powerful members within a society accept the unequal distribution of power (Hofstede et al. 2010). Based on the social comparison mechanism, loyalty programs confer customers with superior status and privileges to retain customers. Social status and privileges are desired in a high power distance country (Patterson et al. 2006). As loyalty programs use status to induce customer purchases and loyalty, high power distance evokes social comparison among customers and encourages customers to pursue the status and preferential treatment associated with loyalty programs. Initial evidence has shown that as power distance increases, the effect of various relationship marketing strategies, such as loyalty programs, on outcomes such as word-of-mouth and seller performance are enhanced (Samaha et al. 2014). Therefore, loyalty program effects are expected to be stronger as a country's power distance culture increases.

H_{3a}: The effects of loyalty program membership on customer outcomes are stronger in a) high power distance than low power distance cultures.

3.4.2 Individualism/collectivism

Second, individualism/collectivism is the cultural dimension that relates to the degree that individuals are integrated into groups (Hofstede 2011). In an individualist culture, people only care for themselves and their immediate family, while in a collectivist culture, people tend to sacrifice their personal benefits for the collective good. In a collectivist culture, loyalty programs are expected to deliver higher effectiveness because it is easier for loyalty programs to create relational bonds with customers. People are more likely to comply with social norms such as reciprocity in a collectivist culture (Samaha et al. 2014). Reciprocity encourages individuals to pay back what another person offers in kind (Gouldner 1960). Through rewarding customers through loyalty programs, customers are expected to reciprocate positively to the rewards they receive. Also, a collectivism culture can create in-group identity of members within an loyalty program, leading to members to generate loyalty (de Mooij 2000). In an individualist culture, people are more concerned more about their own benefits. Customers are more likely to give up their social bonds in exchange for immediate benefits from other brands and are less likely to reciprocate with firms. Thus, it is expected that the effects of loyalty programs are weakened in an individualist culture. Accordingly,

H_{3b}: The effects of loyalty program membership on customer outcomes are stronger in collectivist than individualistic cultures.

3.4.3 Masculinity/femininity

Third, masculinity/femininity describes that cultures differ in the extent that they appreciate values typically associated with masculinity or femininity. A masculine culture emphasizes status, material success, and achievements, while a feminine culture values relationships and caring for others (de Mooij and Hofstede 2002; Hofstede 2001). Customers in a masculine culture are more likely to demonstrate their

status and material success through acquiring new products (Rogers 1983; Thompson and Chmura 2015). Therefore, they might engage in more variety-seeking behaviour looking for new products. As their purchase might be scattered across various brands, the use of the loyalty program of a particular brand is decreased. On the other hand, in a feminine culture, where people value relationships more than material success, loyalty programs that focus on initiating relationships with customers would display greater effectiveness. Accordingly, research highlights that different relationship marketing strategies are less effective in a masculine culture (Samaha et al. 2014). This finding may also be applied in the loyalty program context as a loyalty program is part of the firm's relationship marketing strategy. Hence,

H_{3c}: The effects of loyalty program membership on customer outcomes are stronger in feminine than masculine cultures.

3.4.4 Uncertainty avoidance

Fourth, uncertainty avoidance describes how individuals perceive and respond to the level of stress in a society in the face of an unknown future (Hofstede 2001).

Customers in a high uncertainty avoidance culture resist changes to lower the risks and engage in less variety-seeking behaviour (Roth 1995). Therefore, customers are less likely to change from established purchase patterns to avoid risks associated with new choices. Habitual buying is more likely to happen in high uncertainty avoidance culture since people tend to base their purchase decisions on prior experiences to avoid the possible risks associated with switching. Also, in a high uncertainty avoidance culture, people are more willing to maintain existing relationships and are more likely to develop trust (Doney et al. 1998). Once the loyalty program establishes a relationship, the uncertainty avoidance culture can help preserve it. A high uncertainty avoidance culture also mitigates adverse attitudinal outcomes such as propensity to

switch, negative word-of-mouth, and complaining behaviours even if customers have negative experiences (Liu et al. 2001). Therefore,

H_{3d}: The effects of loyalty program membership on customer outcomes are stronger in high uncertainty avoidance than low uncertainty avoidance cultures.

3.4.5 Long-term orientation

Fifth, long-term orientation is the cultural dimension that emphasizes on future rewards through perseverance and thrift (Hofstede et al. 2010). For loyalty programs to be effective, customers must have positive expectations for future rewards (Taylor and Neslin 2005). In order to obtain a reward, customers are encouraged to engage in repeat purchase behaviours to reach the threshold of rewards. Therefore, long-term orientation strengthens the positive association between program membership and purchase behaviours. In addition, customers with long-term orientation are also more likely to engage in relationships, since in such a culture, people value reliability, responsiveness, and empathy, which are outcomes of a close, long-term relationship (Furrer et al. 2000). Therefore, loyalty programs have a stronger effect if customers favour long and stable relationships. A long-term orientation culture can help loyalty programs to achieve this objective. Thus,

H_{3e}: The effects of loyalty program membership on customer outcomes are stronger in long-term orientation than short-term orientation cultures.

3.4.6 GDP per capita

The gross domestic product (GDP) per capita is a key socioeconomic factor of a country's economic health (Dwyer et al. 2005). GDP per capita has been found to influence the performance of marketing practices (e.g. Möller and Eisend 2010) and

typically correlates with disposable personal income. In countries with low GDP per capita, purchasing power is limited. It usually takes customers greater effort and more time to reach the reward threshold. We can infer from the goal-gradient hypothesis that if customers perceive a reward as too remote to reach, they may not increase their purchase level in an attempt to obtain the reward. Since the reward is perceived as unlikely to achieve, the switching costs imposed by loyalty program points and rewards are negligible. Therefore, it is postulated that loyalty programs are less effective in countries with lower GDP per capita. With the increase of income, customers may tend to have higher expectation, and be more critical about products and services (Anderson et al. 2008). But loyalty programs can mitigate the negative experiences and enhance the overall evaluation of the offer through developing a closer relationship with customers (Bolton et al. 2000).

H_{4a}: The effects of loyalty program membership on customer outcomes are stronger in countries with higher than lower GDP.

3.4.7 Consumer confidence index

Second, the consumer confidence index (CCI) reflects customer sentiment towards a nation's economic state. It is a leading indicator of customers' propensity to buy and has been used to predict future expenditure (Kumar et al. 1995). This postulation is correlated with higher usage of loyalty programs to accumulate points. Johnson and Auh (1998) point out that the change in attitudes towards the economy as measured by the CCI can influence customers' cost-benefit calculation and willingness to develop trusted relationships. A perception of poor economic conditions reduces customers' cognitive effort to engage in relationships with firms since they focus more on saving money. In this situation, customers may not be receptive of loyalty programs' relationship building efforts. Thus, the responses to loyalty programs are weakened. Conversely, when customers have more optimistic views toward the future economic

situation, they are more likely to engage in trusted relationships. Hence, a high CCI amplifies the positive effect of loyalty programs.

H_{4b}: The effects of loyalty program membership on customer outcomes are stronger in countries with higher than lower consumer confidence index.

3.4.8 Consumer price index

Third, the consumer price index (CPI) measures the extent of inflation in a country. In adverse financial situations such as high inflation, as product prices increase, customers' elaboration likelihood increases, and they become more price conscious (Estelami et al. 2001; Jacoby and Chestnut 1978). Under high inflation, purchase behaviours are likely to be more price-driven. The change in prices can alter the stable context in which a repurchase habit has been developed. Habit driven purchase pattern thus can be disrupted. As a result, the relationship between loyalty programs and repeated purchases is weakened under high inflation. Moreover, increases in prices encourage customers to look for more affordable alternatives. Consumers may value lower prices more than a good relationship with the firm. Therefore, loyalty programs become less useful in developing relationship-related outcomes such as favourable attitudes, trust, and commitment. In a study analysing sentiment towards marketing practices, Gaski and Etzel (2005) find a strong negative correlation between CPI and "The Index of Consumer Sentiment toward Marketing", meaning that when CPI is high, customers show less positive attitude toward marketing practices such as loyalty programs. Therefore,

H_{4c}: The effects of loyalty program membership on customer outcomes are stronger in countries with lower than higher consumer price index.

3.5 Interaction effects between industry and national Culture

Besides testing the impact of firm, industry, and country characteristics on loyalty program effectiveness, this study proposes several interaction effects between them. Past research has shown, for example, that national culture has differential impacts on consumer behaviour for various product categories (Cleveland et al. 2011). In our meta-analysis, this study therefore tests interactions between national culture and two industry characteristics describing the product category⁴.

3.5.1 Hedonic /utilitarian purchases x power distance

First, there might be an interaction effect between hedonic/utilitarian purchases and power distance. Hedonic products are consumed for pleasure, status-seeking, and identity signalling (Alba and Williams 2013). Consumers in a high power distance culture pursue social identity and status that demonstrate power and control. Hence, purchasing of hedonic products such as luxuries is more pronounced in countries with high power distance. When customers consume for status reasons, it is expected that the loyalty program's status cue is reinforced. In high power distance countries, with a desire to earn respect from others, this cue is perceived as stronger and therefore drives positive responses to the loyalty program. According to congruency theory, personalized rewards, which provide hedonic benefits, are more consistent with hedonic products, therefore result in higher effectiveness of sales (Kwok and Uncles 2005). In high power distance culture, where people generally prefer differentiation with other customers to express their privileges and social status, the congruence between loyalty programs and hedonic product is higher than between loyalty programs and utilitarian products. Therefore, as a country's power distance increases, customer response to loyalty programs for hedonic products also strengthen. However, in

⁴ The possible interaction effect of individualism was also considered. However, due to limited variation in the interaction term, it cannot be included in the model.

countries with low power distance culture, differentiated rewards and status are less valued. loyalty program effects on hedonic purchases should be weaker, while the effects on utilitarian purchases might be stronger.

H_{5a}: There is an interaction effect between hedonic/utilitarian purchases and power distance, in that stronger effects of loyalty program membership on customer outcomes are expected for hedonic than utilitarian purchases in a high power distance culture, whereas in low power distance culture, stronger effects are expected for utilitarian purchases than for hedonic purchases.

3.5.2 Hedonic /utilitarian purchases x masculinity/femininity

Second, this study proposes an interaction effect between hedonic/utilitarian purchases and masculinity-femininity. Loyalty program effects on hedonic and utilitarian purchases can also be conditioned by masculinity and femininity culture. Hedonic purchases made for emotional and sensory appeals are more pronounced in a feminine culture, as those appeals are more consistent with feminine traits (Chang 2006). Utilitarian purchases, which aims for meeting functional needs, are more consistent with a masculine culture, because consumers in a masculine culture emphasize on tangible cues of products (Tsikriktsis 2002). Therefore, it is expected that loyalty programs to be more effective for hedonic products in a feminine culture, and for utilitarian purchases to be more effective in a masculine culture. Thus,

H_{5b}: There is an interaction effect between hedonic/utilitarian purchases and masculinity-femininity, in that stronger effects of loyalty program membership on customer outcomes are expected for hedonic than utilitarian purchases in a feminine culture, whereas in a masculine culture, stronger effects are expected for utilitarian purchases.

3.5.3 Services vs. goods x uncertainty avoidance

Third, an interaction effect between services/goods and uncertainty avoidance is expected. The consumption of services is perceived as riskier than consumption of goods because the outcome of service performance is uncertain prior to the service experience (Parasuraman et al. 1985). Customers in a high uncertainty avoidance culture naturally prefer stability of service delivery. By engaging in the loyalty program, customers develop a sense of trust to mitigate the risk of uncertain service performance. On the contrary, the characteristics of goods are tangible, and the performance of goods is relatively consistent and easy to evaluate. There is less uncertainty associated with the use of tangible goods. As a result, a high uncertainty avoidance culture could amplify the effectiveness of loyalty programs on service offerings.

H_{6a}: There is an interaction effect between services/goods and uncertainty avoidance, in that stronger effects of loyalty program membership on customer outcomes are expected for services than goods in a high uncertainty avoidance culture, whereas in a low uncertainty avoidance culture, stronger effects are expected for goods than for services.

3.5.4 Services vs. goods x long-term orientation

Fourth, there might be an interaction effect between services/goods and long-term orientation. Due to the heterogeneity of services, the need to develop a trusted relationship is more crucial for service provision than goods provision. In a long-term orientation culture, customers are expected to develop better relationships with service providers, regardless of the presence of loyalty programs. Research has shown that customers have lower expectations and are more tolerance regarding service quality in

a long-term orientation culture (Donthu and Yoo 1998). However, loyalty programs are for goods because customers consider relationships with goods manufacturers less important. Switching behaviour is more likely to happen with goods than with services even in a long-term orientation culture. In this case, loyalty programs can play a role in securing customer relationships and produce more positive customer responses for goods manufacturer. Hence,

H_{6b}: There is an interaction effect between services/goods and long-term orientation, in that stronger effects of loyalty program membership on customer outcomes are expected for goods than services in a long-term orientation culture, whereas in a short-term orientation culture, stronger effects are expected for services than for goods.

3.6 Method moderators

Different methods and study contexts used in loyalty program research might be a cause of inconsistent findings (Dorotic et al. 2012). This study therefore tests a set of study characteristics. Data source (objective data vs. other) is included as studies of loyalty programs use mixed data sources. Different sample type (student sample vs. other) are also considered. A previous meta-analysis has found that student responses are stronger and more homogeneous (Peterson 2001). Furthermore, journal quality is considered. Higher quality journals have more rigid control mechanisms over the validity of study results (Hunter and Schmidt 2004). Manuscript status (published vs. unpublished) is also accounted for, since significant results are more likely to be published (Hunter and Schmidt 2004). Finally, some researchers argue that members self-select them into the loyalty program because they are more loyal than non-members (Leenheer et al. 2007; Meyer-Waarden and Benavent 2009). This study therefore distinguishes between studies that have controlled for the self-selection effect and those that have not controlled.

This chapter sets out the conceptual framework for the meta-analysis and develops hypotheses for moderators. By testing these contextual effects, this thesis provides an assessment on the generalizability on loyalty program membership effect. The next chapter presents the methodology of this research.

Chapter 4

Research Methodology

4.1 Introduction

The purpose of this chapter is to present the methodology of this thesis. First of all, positivism, as the research paradigm of this thesis, is introduced. Then, the chapter offers a brief overview of meta-analysis, the main method used for this study. Next, the specific research activities and the research process of this thesis are described and justified, such as issues related to literature search, data coding and handling, and data analysis.

4.2 Research paradigm

A research paradigm is the “set of common beliefs and agreements” shared among scientists about “how problems should be understood and addressed” (Kuhn 1962). In order to carry out scientific research, scientists should adopt philosophical positions about the nature of matter, including what can be known, and how can it be known (Clark 1998). The paradigm of scientific research consists of ontology, epistemology, and methodology (Žukauskas et al. 2018).

Ontology is the study of being. It is concerned with what is the nature of existence and the structure of reality (Crotty 1998). Another related issue is *epistemology*. It is the philosophical concern of the nature and justification of human knowledge (Hofer and Pintrich 1997). In short, epistemology deals with how knowledge can be obtained and how it can be communicated (Kivunja and Kuyini 2017). While *methodology* refers to the particular research design that leads to the choice of specific methods and how they can be used to achieved desired outcomes (Crotty 1998). The beliefs of ontology and epistemology guide the practices of scientific research, including the methodological orientation. Different ontological and epistemological stances influence the assumptions held by researchers, and result in very different approaches to research.

The scientific research paradigm of this thesis is *positivism*. The ontological perspective of positivism is that the reality is objective and perceived. Positivists believe that the social world can be observed and described objectively (Levin 1988). The epistemological view of positivism is that the acquisition of knowledge should be independent of the researcher's personal values and moral content (Žukauskas et al. 2018). The positivist approach to study social phenomena is to produce formal propositions with formal logic (Lee 1991). The theoretical propositions must be tested using rigours methods. Lee (1991) suggests that a proposition must satisfy four requirements, which are falsifiability, logical consistency, relative explanatory power, and survival. Falsifiability refers to detecting the inaccurate content of theoretical propositions through contradictory observations. Only through such observations, researchers can falsify the theory and the propositions developed on the theory. The second requirement, logical consistency, refers to that theoretical propositions must be related to one another and should be able to deduce one from another. The third requirement is relative explanatory power. A given theory must be able to explain or predict the subject matter as well as a competing theory. Finally, although a theory is

falsifiable, it must survive through empirical tests. It should be noted that a theory can never be concluded as true. The positive empirical evidence can only support the theory temporarily.

As the research paradigm is defined, the choice of methodology should be identified. The research methodology of positivism is rooted in atomism, quantification, and operationalisation (Balarabe Kura 2012). Atomism implies that a phenomenon can be studied as an entity separated from the real world with discrete elements. Experiments are often considered as the method of studying a social phenomenon. Quantification refers to that the variables are quantifiable and expressed numerically.

Operationalisation refers to that social phenomena can be defined as simple behaviours and life experience. Combining these characteristics, the most applied research methodologies are survey research, experiments, and quasi-experiments (Žukauskas et al. 2018). Those approaches involve more specific research activities such as sampling, measurement and scaling, questionnaire, statistical analysis and so forth (Crotty 1998).

With respect to the paradigms of research synthesis, the philosophical positions of researchers would influence the choice of methods of synthesis. A research synthesis method under the positivist paradigm is meta-analysis. Meta-analysis is rooted in a falsification paradigm and attempts to achieve the description or justification outcomes. Typically, it answers the 'what' and 'whether' questions (Gordon 2016). Since the research objective of this thesis is to examine whether loyalty programs work or not. A meta-analysis is considered as the appropriate synthesis approach.

4.3 An overview of meta-analysis

Empirical research repeatedly examines the same phenomenon to verify and extend previous findings. However, even researchers have made great effort on replication,

they rarely achieve identical results (Cooper et al. 2019). Especially in social science, human behaviours are complex to explain and research environments are difficult to control, the common understanding of definitions are not always available, and research methods and sample characteristics vary from one study to another (Wolf 1986). Therefore, research synthesis comes in as a means of aggregating these results. There are different approaches to research synthesis. Narrative reviews provide summaries of a large amount of information and address a wide range of questions. However, they have been criticized for lacking transparency and reproducibility (Denyer et al. 2008). They can also be subject to selection bias because they only use a “subsample” of the available studies. Confusions can be introduced by narrative reviews as sometimes similar studies report divergent results (Uman 2011). Meta-analysis, on the other hand, is a “rigorous alternative to the casual, narrative discussions of research studies...” (Wolf 1986). Meta-analysis allows a comprehensive understanding of the phenomenon by developing a specific strategy of literature searching. Unlike narrative reviews, which provide qualitative synthesis of relevant studies, meta-analysis is a statistical synthesis of individual quantitative empirical studies. In addition to providing a weighted average effect size estimation, meta-analysis also allows assessment of a wide range of moderators simultaneously using approaches such as meta-regression (Grewal et al. 2018). Therefore, a good meta-analysis extends key insights into new areas and are beneficial to both academics and practitioners (Palmatier et al. 2018).

The marketing discipline has seen increasing attention on using meta-analysis to generalize marketing knowledge. According to Hanssens (2018), empirical generalisations, like meta-analysis, answer the question “what tends to happen to consumer behaviour and, therefore, business performance, when a firm, brand or other relevant entity engages in a certain marketing behaviour?”. As researchers repeatedly examine critical issues in this discipline, the cumulative body of past literature provides

opportunities for researchers to integrate these results. Over the last a few decades, meta-analysis has been widely applied on various subjects in marketing, such as relationship marketing, retailing, services marketing, and product development. Marketing researchers also become more and more methodologically sophisticated in conducting meta-analysis (Grewal et al. 2018). Therefore, beyond simple effect sizes integration, meta-analytic studies also address issues such as resolving definitional ambiguities (Blut and Wang 2020), identify inconsistency in the literature and moderators, and assess the methodological differences of studies on research outcomes (Bijmolt et al. 2005).

4.4 The process of meta-analysis

Cooper et al. (2009) identify five stages of conducting research synthesis. These are:

- 1) Problem formulation
- 2) Literature search
- 3) Data evaluation and extraction
- 4) Analysis and interpretation
- 5) Public presentation

There are some critical issues within each of these stages. This section is aiming at discussing these issues and describing the process of conducting a research synthesis.

4.4.1 Problem formulation

Formulating a research problem is the first step of a meta-analysis. At the beginning of the meta-analysis, the meta-analyst must clearly define the variables of interest, both conceptually and operationally. The definition of a construct might differ in terms of the scope. For example, in one meta-analysis of customer satisfaction, Szymanski and

Henard (2001) define customer satisfaction as a unidimensional construct. Yet in another study, satisfaction is defined as having two dimensions – transaction-specific satisfaction and overall satisfaction (Gelbrich and Roschk 2011). Moreover, the variables of interest must be operationally similar to be integrated. For a broad concept, researchers might devise multiple ways to operationalise the construct. For instance, “personal innovativeness” is conceptually described as the characteristic of a person being innovative. The operationalisation of this concept can be an observable phenomenon which is the “time of adoption” – if a person adopts an innovation early, then he/she is considered as being innovative. But this measurement is subject to limitations such as lack of metrics to assess the validity and reliability. Another way to operationalise personal innovativeness is to use self-reporting scales which are similar to the measurements of attitudes and other personality factors (Agarwal and Prasad 1998). It is better to use broadly defined concepts than narrowly defined concepts in meta-analysis, because a meta-analysis using a narrow definition not only restricts the number of eligible studies, but also limits the ability of the study to test generalisability of the concept in different context (Cooper et al. 2009). In addition, multiple operationalisations of constructs might be a severe problem in primary studies. However, meta-analysis can account for the diversity in methodology and make additional contributions by testing the variation in empirical results attributed to methodological differences (Cooper et al. 2019).

Researchers must be clear about the relationships to be synthesised in meta-analysis. Although meta-analysis is used most frequently to assess the relationship between two variables, it can also be used for synthesising one-variable relationship, such as summarising the central tendency of a population (Lipsey and Wilson 2001). Knowing which relationships are to be tested informs the meta-analyst of the types of effect sizes. Besides the relationships to be synthesized, the meta-analyst can also propose

mediator/moderator hypotheses to further explore the variations in the relationships of interest.

4.4.2 Literature search

After identifying the research problem, the meta-analyst should develop a search plan to collect empirical studies. The search strategy largely influences the outcomes of meta-analysis and researcher should try to include as many studies as possible to allow more generalisability (Grewal et al. 2018). Using the broadest sources of information is most likely to result in a representative sample of previous studies (Cooper et al. 2009). White (2019) describes five major modes of searching. First, footnote search refers to the search in references in published papers or bibliographies compiled by others. It is particularly useful to trace the references in review papers on the topic of interest, because they provide substantive and rich sources. Second, consultation with people who are active in the research field through personal communication or via emails and electronic bulletins allows the meta-analyst to explore more sources, especially unpublished studies. Third, searches in subject indexes entail computer and manual searches in electronic or printed sources of keywords. Fourth, meta-analyst can browse through library shelves to locate additional studies. The classification of resources made by the librarian enables the analyst to assemble similar documents and journals for a more systematic examination of those sources. Last, the search of a citation index manually or by computer allows the analyst to discover links between similar studies and a network of related studies. Unlike searching in references, which informs the analyst former studies conducted, citation searches explore the later items that cited the work.

Electronic database search has become the major source of literature retrieval.

Another critical step of literature search is specifying the keywords to be entered into the databases. The analyst should first identify a series of standardized descriptors

associated with the topic of interest within a database, as well as a set of terms that different researchers might use to give their studies relevance of the topic (Lipsey and Wilson 2001). These key terms, standardized descriptors, along with possible thesauruses should be searched in the electronic database. Some databases allow searching multiple keywords within one search in combination (e.g. Watson et al. 2018). The analyst should also allow searches in as many areas as possible, including title of the publication, abstract, main text, and reference list, to identify wider potentially relevant studies.

4.4.3 Evaluating study methodology and extracting information from study reports

After retrieving relevant studies, the meta-analyst should make decisions about which studies are eligible for the synthesis. This step involves judgements about study characteristics and review of the fit between studies and the research problem. Then, the analyst will extract information from eligible studies. This step is called data coding.

Meta-analysts should identify a clear set of eligibility criteria, which usually flow naturally out of the research question (Cooper et al. 2019). These criteria guide the decision of including/excluding a study in the meta-analysis, therefore are ideally specified before the search of studies is implemented (Borenstein et al. 2009).

Generally, meta-analysts should draw up explicit criteria in terms of 1) the distinguished features of a qualifying study, 2) research respondents, 3) key variables, 4) research designs, 5) cultural and linguistic range, 6) time frame, 7) publication type (Lipsey and Wilson 2001).

Sometimes the analyst also needs to consider the quality of studies. Studies need to be assessed based on their credibility. The analyst can decide whether to exclude studies which are judged as lack of credibility, or to code different variables of research designs and assess them as moderators (Cooper et al. 2019). Therefore, it is

recommended that the analyst identify methodological differences during the coding procedure and extract relevant information for consideration of potential moderators.

After selecting eligible studies, the analyst will extract the information from the studies and compile this in a data file. It is useful to develop a coding protocol which specifies important constructs and study characteristics. Decisions of which information to code are important as they form part of the research synthesis. Although the information needed might vary depending on the study purposes, Wilson (2019) suggest that generally, report identification, study setting, participants, methodology, treatment or experimental manipulation, dependent measures, and effect-size data should be recorded.

Another critical issue that the analyst should consider is the management of data files. Usually, the data for meta-analysis follows a hierarchical structure – the effect sizes are nested within studies. If the coder knows the maximum number of effect sizes per study, he/she can use a flat file approach – a single data file that record all the information needed with one row per study. More conventionally, a hierarchical file approach is used. This approach requires two separate data files which record effect size information and study level information respectively (Lipsey and Wilson 2001). In the effect size file, each row records a quantitative relationship that the meta-analysis wishes to synthesise. Other related information, e.g. measurement and specific construct related to this relationship, can also be coded in the same row. The study-level file records information about the distinguished features of the studies, e.g. study designs. Such information only needs to be coded once.

4.4.4 Statistically describing and combining study outcomes

In meta-analysis, the analyst usually uses the summary data from each study to compute effect sizes. The value of an effect size reflect the magnitude or strength of a

relationship between two variables (Borenstein et al. 2009). Effect sizes can take various forms, depending on the research design and purpose of the study. For example, researchers often report the correlation (r) between two variables of interest. The correlation itself will usually serve as the effect size index, which takes account of the different metrics in the original scale (Borenstein and Hedges 2019). Some studies might report information that allows the computation of effect sizes, e.g. if the means, standard deviations, and the sample sizes of the treatment group and control group are known, the meta-analyst can compute the standardised mean difference (d). When integrating the effect sizes, the analyst chooses a form of effect size as the summary effect size. Table 4.1 presents the formulas of conventional effect size computation and transformation.

Hunter and Schmidt (2004) suggest adjusting individual effect sizes for bias, artifact, and error before analysis is carried out. Some adjustments are customary and some are used infrequently (Lipsey and Wilson 2001). One most common and useful correction is adjusting for unreliability of variable measurements in effect sizes. If the reliability of the dependent variable is known, then the unattenuated effect size is computed as:

$$ES' = \frac{ES}{\sqrt{r_{yy}}} \quad (4.1)$$

Where ES is the observed effect size, r_{yy} is the reliability coefficient of the dependent variable.

It is important for the meta-analyst to create an independent set of effect sizes. If multiple effect sizes on the same conceptual relationship, e.g. using different measurement operationalizations, are reported from the same sample set, the analyst should select one or compute an average effect size. This procedure ensures that the

effect sizes of the same relationship are from independent samples, thus avoiding overestimation the integrated effect size.

Table 4.1 Effect size computation and transformation

Effect size computation	
Summary information	Formula
Means (M), standard deviations (S), sample sizes (n) for each group	$d = \frac{M_1 - M_2}{S_{pooled}}$ $S_{pooled} = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$
t-statistic from independent t-test (t), sample size (n) for each group or total sample size (N)	$d = \frac{t}{\sqrt{\frac{n_1 + n_2}{n_1 n_2}}}$ if sample sizes are unequal; or $d = \frac{2t}{\sqrt{N}}$ if sample sizes are equal ($n_1 = n_2$)
F-statistic from ANOVA, sample size (n) for each group	$d = \left \sqrt{\frac{F(n_1 + n_2)}{n_1 n_2}} \right $
p-value (one-tail) of independent t-test, sample size (n) for each group	$d = \left t^{-1}(p) \sqrt{\frac{n_1 + n_2}{n_1 n_2}} \right $
p-value (two-tail) of independent t-test, sample size (n) for each group	$d = \left t^{-1}\left(\frac{p}{2}\right) \sqrt{\frac{n_1 + n_2}{n_1 n_2}} \right $
Proportions for each group	$d = \text{probit}(p_1) - \text{probit}(p_2)$
Effect size transformation	
Transform from d to r	$r = \frac{d}{\sqrt{d^2 + a}}$ <p>Where a is a correction factor: $a = \frac{(n_1 + n_2)^2}{n_1 n_2}$</p>
Transform from regression coefficient to r	$r = 0.98\beta + 0.05\lambda$ <p>Where $\lambda = 1$ when β is nonnegative and 0 when β is negative</p>
Transform from r to Fisher's z	$z = 0.5 \times \ln\left(\frac{1 + r}{1 - r}\right)$
Transform from Fisher's z to r	$r = \frac{e^{2z} - 1}{e^{2z} + 1}$

Sources: Lipsey and Wilson (2001), Peterson and Brown (2005)

The average effect size is calculated as inverse variance weighted mean effect size.

The inverse variance is determined by the standard error of the effect size. However, correlation coefficient has problematic standard error formulation (Alexander et al.

1989). Therefore, before statistical integration, the correlation coefficient can be transformed into Fisher's z, using the formula presented in Table 4.1. The Fisher's z has a standardised inverse variance (w_i), which is $N-3$, where N is the total sample size. After the integration, the Fisher's z can be transformed back into correlation coefficient.

After the z-transformation, the inverse variance weighted effect size can be calculated as:

$$\overline{ES} = \frac{\sum(w_i ES_i)}{\sum w_i} \quad (4.2)$$

Where ES_i is the z-transformed effect size, w_i is the inverse variance weight of ES_i .

The approach to calculate mean effect sizes discussed above is known as the fixed effects model. The fixed effects model assumes that all the studies in meta-analysis share a true effect size; and the variation in observed effect sizes is only due to sampling error (Borenstein et al. 2009). To examine this assumption, the Q-test for homogeneity of the effect size distribution can be used. The Q statistic follows a chi-square distribution with $k - 1$ degree of freedom. k is the number of independent samples in the meta-analysis. It is calculated as:

$$Q = \sum w_i (ES_i - \overline{ES})^2 \quad (4.3)$$

If the Q statistic exceeds the chi-square critical value with $k - 1$ degrees of freedom, the variation in the effect sizes is not simply due to sampling error. A significant Q-test rejects the null hypothesis of homogeneity of effect sizes. A supplement to Q-test is I^2 statistic, which represents the percentage of variations in the effect sizes due to factors other than random sampling error, is computed as:

$$I^2 = 100\% \left(\frac{Q - (k-1)}{Q} \right) \quad (4.4)$$

If the test of homogeneity indicates violation of fixed effects assumption, the analyst should adopt a random effects model instead of a fixed effects model to account for the real heterogeneity between studies. Equation 4.2 presents the computation for average effect sizes using the fixed effects model (Hedges 2019). This approach assumes that there is only one true effect size of a certain relationship (Borenstein et al. 2009). The variation within observed effect sizes is only due to sampling error. While a random effects model assumes effect sizes can vary according to study characteristics (Hedges 2019). Some studies are similar enough to be meta-analysed, but there is no reason to assume only one true effect size (Borenstein et al. 2009). A random effects model uses an adjusted inverse variance weight by incorporating a random effects variance component. Under the fixed effects model, the inverse variance is:

$$w_i = \frac{1}{v_i} \quad (4.5)$$

After incorporating the random effects variance component, the inverse variance for random effects model is:

$$w_i^* = \frac{1}{v_i + \tau^2} \quad (4.6)$$

Where τ^2 is the random variance component, computed as:

$$\tau^2 = \frac{Q - (k - 1)}{\sum w_i - (\sum w_i^2 / \sum w_i)} \quad (4.7)$$

To calculate the mean effect size using the random effects model, the analyst can replace the w_i in Equation 4.2 by w_i^* in Equation 4.6. Therefore,

$$\overline{ES}^* = \frac{\sum (w_i^* ES_i)}{\sum w_i^*} \quad (4.8)$$

An important issue in meta-analysis is publication bias, also known as the file-drawer problem. Publication bias may lead to false conclusion because the studies with null results are underrepresented in the meta-analysis, as they are less likely to be published and to be known by the analyst (Rothstein et al. 2005). Therefore, the

analyst should exercise cautions when interpreting the power of the statistical significance of the meta-analytic results. The method traditionally used to assess the publication bias is through calculating the fail-safe N. The fail-safe N is the number of studies with null results that need to be added to the meta-analysis to bring the overall statistically significant results to insignificant (Rosenberg 2005). A large statistic of fail-safe N indicate that the tolerance for future null results is high. According to Rosenthal (1979), the fail-safe N is calculated as:

$$X = (k/2.706)[k(\overline{Z}_k)^2 - 2.706] \quad (4.9)$$

Where X is the number of insignificant studies needed to bring the overall p-value to .05. k is the number of independent samples, \overline{Z}_k is the mean of the standard normal deviates from k studies. If the effect size r is know, Z_k can be found:

$$Z_k = r_k(N)^{\frac{1}{2}} \quad (4.10)$$

If the sum of standard normal deviates ($\sum Z$) is known instead of the mean (\overline{Z}_k), then the fail-safe N can be calculated alternatively as:

$$X = \left[\frac{(\sum Z_k)^2}{2.706} \right] - k \quad (4.11)$$

Although the coefficient of determination (r^2) is often used to interpret the proportion of variance in the dependent variable that independent variable held accountable for, the squared value of r can make the statistically significant results appear to be insignificant (Randolph and Edmondson 2005). Sometimes, the initially small effect sizes can be interpreted as insubstantial. The binomial effect size display (BESD) is a useful way of reporting the magnitude of the effect size and providing practical relevance of the results. The BESD interpret the r as the difference between the success rate of the treatment group and control group. The success rate of the treatment group is calculated as $.50 + (r/2)$. And the success rate of the control group

is $.50 - (r/2)$. Then the BESD can be interpreted as the likelihood of success of an event in one group as compared to another.

Although the random effects approach explicitly estimate the between-study variance, it does little with regards to identify the sources of the variance. Sometimes, researchers are interested in knowing what influences the between-study variance. Moderator analyses can be employed for such purposes. There are different forms of moderator analysis. A subgroup analysis divides the effect sizes into two or more groups based on the proposed moderator, and compare the mean effect sizes of each group against others (Grewal et al. 2018). This approach is analogous to one-way ANOVA or t-test. An example can be seen in Palmatier et al. (2006). The authors applied the subgroup analyses to assess a set of moderators on multiple relationships between relational mediators and relational outcomes.

Regression models are useful in assessing the relationships between effect sizes and a number of variables simultaneously (Lipsey and Wilson 2001). Because of the nested structure of effect sizes, Bijmolt and Pieters (2001) recommend using multilevel model for such analysis. This model allows the analyst to test potential explanatory variables of effect size variation (i.e. moderators) at both effect size level and study level. An example can be seen in Pick and Eisend (2016). The authors use a multilevel model for moderator analysis of cultural influence the relationships between switching costs and customer outcomes. They include categorical variables at the effect size level to differentiate the types of customer outcomes, and cultural variables at the study level. Moreover, they also test the cross-level interactions between outcome categories and cultural influences. This allows them to explore which outcomes are most influenced by national culture.

4.4.5 Public presentation

The final stage of the meta-analysis is to produce a report describing the synthesis. The report should be transparent and complete to allow replicability (Mayo-Wilson and Grant 2019). According to the suggestions of Palmatier et al. (2018), the overall structure of the report should be organised in a meaningful way to provide better understanding of the focal phenomenon. Review papers should indicate depth and rigour, i.e. a systematic approach to select articles should be used to avoid the impression of cherry-picking. Therefore, the process of identifying and including research articles and the procedures of extracting information from the articles should be described in sufficient detail. The report needs to reflect usability by incorporating foundation knowledge, key constructs, definitions, and theories should be laid out clearly. They also suggest that using tables and figures is a viable way to present key information to readers.

There are several key components that are essential to a review paper. The introduction should highlight the phenomenon to be synthesised and a description of existing studies. Then, the method section should clearly state the research synthesis method, i.e. meta-analysis. The information from the developed protocol can be used in this section. The study collection and data extraction process need to be described, as well as the characteristics of the included studies. Next, the results of the synthesis are reported. These include the overall mean effect sizes, precision, heterogeneity, etc. the moderator analysis, such as subgroup analysis or meta-regression results should be reported alongside. Finally, the discussion section should include a summary of findings and discuss the contribution to the knowledge. Also, the discussion should identify limitations and propose future research areas. Additionally, the data of code used for analysis can be attached for transparency and facilitate future research (Mayo-Wilson and Grant 2019).

4.5 Meta-analysis of loyalty program membership effects

This thesis employs the methods and procedures of meta-analysis described above to synthesize effects of loyalty program membership. This section presents the steps of meta-analysis conducted for this study in detail to ensure reliability and replicability.

4.5.1 Restate the research problem

As stated in the first chapter, the purpose of this research is to summarise the effects of loyalty program membership on a range of customer outcomes. The key variable of interest, also the independent variable, is loyalty program membership, which is operationalised as a dichotomous variable splitting the sample of a study into members and non-members. Thus, a comparison of the customer outcomes between the two groups can be obtained. An effect size in this meta-analysis represents the difference of a customer outcome between members and non-members.

4.5.2 Literature search

4.5.2.1 Study retrieval

Since the first modern loyalty program is believed to be the AAdvantage program launched by American Airline in 1981, this meta-analysis collects studies published between January 1981 and December 2019. Through reviewing literature, a series of key terms, i.e. aliases of loyalty programs, has been identified and used for searching. To maximise the efficiency of searching and avoid repetitive results, search strings were used to look up articles in different databases. In the initial phase of searching, the search string contains terms used to specify loyalty program membership:

“loyalty program member*” OR “loyalty program participa*” OR “loyalty card member*”
OR “loyalty card holder*” OR “loyalty card owner*” OR “reward program member*”
“reward card holder*” OR “reward card owner*” OR “reward program participa*” OR

“frequent guest member*” OR “frequent guest program participa*” OR “frequent flyer member*” OR “frequent flyer program participa*”

Later on, the search string was expanded to include more relevant terms, and excluded the indication of membership in these terms, to allow more articles to be screened. Although this process increased the workload of literature search, it resulted in additional studies to be discovered. The expanded search string is:

“loyalty program*” OR “loyalty scheme” OR “loyalty card*” OR “reward program*” OR “frequency program” OR “incentive program*” OR “incentive scheme*” OR “frequent shopper program*” OR “frequent flyer program*” OR “frequent flier program*” OR “frequent stayer program*” OR “continuity program*” “recognition program*” OR “recognition card*” OR “customer club*” OR “retention program*” OR “retention scheme” OR “brand community*”

The search strings were used in databases including ProQuest and Business Source Complete. Individual terms were also entered and searched in Google Scholar. Besides, the reference list of key review and empirical papers on loyalty programs were examined. Issue-by-issue search of major marketing journals were also conducted to collect further studies. To identify working papers, terms were also searched in Google search engine. Additionally, after collecting the studies identified by the above methods, the authors of these studies were sent emails enquiring whether they have any published studies on loyalty programs which might be relevant to this meta-analysis. Unfortunately, among the three articles returned by authors, none of them was usable. The process of literature search is described in Appendix 3. The final search results are 50 journal articles, 4 doctoral theses, 1 book chapter and 1 unpublished paper (see Appendix 4). Within these results, some articles comprise of multiple studies using different sample sets. Also, some studies with same author(s) are identified using the same sample sets for multiple papers. To ensure there is no duplicated samples, these studies were considered as a single study in subsequent

analysis. The author and sample information of doctoral theses were checked to ensure that the doctoral work was not published in peer-reviewed articles to avoid potential duplicated samples.

4.5.2.2 Inclusion and exclusion criteria

The studies included in this study were selected based on a number of pre-determined criteria, known as inclusion and exclusion criteria. Since meta-analysis is a literature integration technique about effect sizes, only studies containing quantitative empirical results can be included. Review papers, conceptual papers, and qualitative studies were discarded. The search results, especially which of the second search string, yielded a large number of studies. The studies which are not directly related to the research problem, e.g. employee incentive programs, were discarded immediately. There are also studies only use samples of loyalty program members. These studies are also ineligible since the data of non-members is required to obtain the difference in customer responses between members and non-members. To be included, the studies should also report one or more relationships between loyalty program membership and customer metrics. If the effect sizes are not directly available from the study, the study must provide information allowing calculation or conversion of meaningful effect sizes. For example, if a study does not report the standardised mean difference, alternatively, it can report necessary information used to calculate the standardised mean difference, such as raw mean difference, standard deviations of the two groups, and sample sizes of the two groups (see Table 4.1). Finally, the scope of this meta-analysis is limited to literature written in English, not any other language, because English is the most widely used language in scientific research.

4.5.3 Data coding and handling

The hierarchical data approach was chosen for structuring the meta-analytic database. Effect size level information and study level information were coded into two separate spreadsheets. Table 4.2 specifies the information contained in respective data files.

Table 4.2 Variable specification

Variable	Coding
Level 1	
Paper ID	The unique identifier of the publication
Study ID	The unique identifier of the independent sample
Dependent variable	The name of the dependent variable used in original paper
Recoded dependent variable	The dependent variables were recoded into 17 categories
Item	Number of items used to measure the dependent variable
Scale	Number of points on the scale used to measure the dependent variable
Reliability	The reliability information of the effect size, e.g. Cronbach's Alpha, composite reliability, average variance extracted
Condition	The experimental condition. i.e., members vs. non-members
Treatment mean	The mean of members
Control mean	The mean of non-members
Treatment SD	The SD of members
Control SD	The SD of non-members
Treatment N	The number of members
Control N	The number of non-members
t-value	The t-value from t-test
p-value	The p-value from t-test
Regression coefficient	The regression coefficient of loyalty program membership from regression model
Cohen's d	Standardised mean difference calculated using the formulas in Table 4.1
Correlation coefficient	The correlation coefficient between loyalty program membership and the dependent variable
N	The overall sample size of the study
Level 2	

Paper ID	The unique identifier of the publication
Study ID	The unique identifier of the independent sample
Author name(s)	The name(s) of the author(s)
Article title	Title of the article
Publication title	Title of the journal/book
Journal quality	Journal ranking according to ABS List 2015 1 = 4* and 4 (Top tier) 2 = 3 (Second tier) 3 = 2 (Third tier) 4 = 1 (Lowest tier) 5 = not in the list
Year of publication	The year in which the article was published
Year of data collection	The year in which the data was collected (same in the study if reported; if not, year of data collection minus 3)
Method of data collection	The method of data collection, e.g. survey, interview, consumer panel etc
Place of data collection	The country in which the data was collected
Sample type	The type of sample, i.e., student sample vs. consumer sample
Industry	The industrial context in which the study was conducted
Coalition program	If the program under study is a coalition program = 1 Otherwise = 0
Tiered program	If the program under study is a tiered program = 1 Otherwise = 0
Size of the business	If the loyalty program under study belongs to a large company = 1 If the loyalty program under study belongs to a small company = 0
Durability	Durable goods = 1 Non-durable goods = 0
Services vs. goods	Services = 1 Goods = 0
Functional vs. hedonic purchase	If the product/service purchase is for hedonic purpose = 1 If the product/service purchase is for functional purpose = 1
Marketing concentration	Herfindahl–Hirschman Index calculated as the sum of the squared market share (revenue) of firms in respective industries (coded using SIC code) in the country where the study was conducted. Range from 0 = low concentration to 1 = high concentration, data from DataStream
Power distance	Range from 0 = low power distance to 100 = high power distance, data from Hofstede Insights

Individualism vs. collectivism	Range from 0 = collectivism to 100= individualism, data from Hofstede Insights
Masculinity vs. femininity	Range from 0 = feminine to 100 = masculine, data from Hofstede Insights
Uncertainty avoidance	Range from 0 = low uncertainty avoidance to 100 = high uncertainty avoidance, data from Hofstede Insights
Long-term orientation	Range from 0 = short-term orientation to 100 = long-term orientation, data from Hofstede Insights
GDP per capita	Gross Domestic Product per capita (1 unit = 1000), data from World Bank
Consumer confidence index	Above 100 = optimistic towards future economic situation, below 100 = pessimistic towards future economic situation, data from OECD
Consumer price index	Annual growth rate of prices with 2015 as the base year (100), data from OECD
Self-selection effect	If the study design controlled for self-selection effect (by randomization or repeated measures) = 1 Otherwise = 0
Objective data	If the data used in the study was from objective data source (e.g. company database) = 1 Otherwise =0
Student sample	If the study uses a student sample = 1 Otherwise = 0
Manuscript status	Published journal article = 1 Unpublished work = 0

In the effect size level file, the information related to individual effect sizes is recorded. A unique identifier was assigned to each paper and each study. This allows the analyst to identify effect sizes reported by the same sample set and also facilitates the merging of effect size level file and study level file at a later stage. The operationalisations of independent variable and dependent variables should be specified. The independent variable is loyalty program membership, which is a dichotomous variable differentiating members from non-members. It is coded as a binary variable (members = 1, non-members = 0). Therefore, a positive correlation indicates that loyalty program members display more favourable response than non-members. With regards to dependent variables, they were initially coded as they were referred as in the original articles. Later, variables which are conceptually similar were categorised into the same

customer outcome group (Table 4.3). For example, researchers use multiple metrics to capture customer repurchase behavioural pattern, such as purchase frequency, inter-purchase time, and purchase quantity. These metrics were recoded as “repurchase behaviour”. The measurement and reliability information of the dependent variables were also coded. Where studies do not report reliability information, e.g. single-item measures, the mean reliability coefficient across all effect sizes in the same dependent variable category were used. The reliability of observed behaviours (e.g. from scanner data and company databases) was coded as 1. If a study reports any mean/proportion difference or regression coefficient, then the information needed to calculate the standardised mean difference was coded. There was some missing information, for example, some studies do not report standard deviations of the group means. In this case, the missing standard deviations were replaced using the grand mean standard deviation from all other studies included in the meta-analysis (Furukawa et al. 2006). If a study reports a correlation coefficient, then the statistic was coded directly into the data file. Finally, the total number of sample size in the study was also coded.

The study level file records information related to study characteristics. In order to be matched with the effect size level file, the study level file should also include unique identifiers of papers and studies. These must be identical to which in the effect size level file. Then, details about the individual studies were coded. These include the author name(s), article title, journal title, journal quality, publication types, year of publication, and publication status (published vs. unpublished). As studies differ in terms of research designs and research methods, details such as the place and method of data collection, type of sample, industrial setting were also recorded. Such information was of potential use with regards to coding moderators.

Table 4.3 Coding and categorising of dependent variables

Key variables	Aliases
Brand attitude	Preference, attitudes toward the retailer
Commitment	Affective commitment, continuance commitment, relationship commitment, willingness to continue as a customer
Cooperation	Marketing research cooperation, customer prosocial behaviour
Customer identification	Shared values, sense of belongingness
Customer loyalty	Loyalty, loyalty intention
Repurchase behaviour	Re-patronage, purchase frequency, inter-purchase time, customer retention, switching (reverse-coded)
Repurchase intention	Re-purchase intention, Re-patronage intention
Sales/profit	Transaction value, revenue, store basket, spending per shopping trip
Satisfaction	Confirmation of expectations, performance vs. ideal
Service quality perception	Reliability, tangibility, responsiveness, convenience
Share-of-wallet	Share of customer, share of category purchases
Switching costs	Barriers of exit, switching barriers
Trust	Confidence, risk perception (reverse-coded)
Value perception	Economic value, price-quality ratio, preferential treatment
Willingness-to-pay	Pay for higher fees, payment equity
Word-of-mouth behaviour	Personal referral, recommendation
Word-of-mouth intention	Intention to recommend

Since the moderators are at the study level, they were coded into study level file as well. The data of moderators were collected from various sources. The program, firm, and some industry characteristics were extracted from the original papers. Variables of coalition programs, tiered programs, firm size, durability, services vs. goods, utilitarian vs. hedonic purchases were dummy coded. Market concentration is measured by Herfindahl-Hirschman Index (HHI), which is calculated as the sum of the squared market share of individual firms within the industry. The data used for calculating HHI was collected from DataStream database. Scores of Hofstede cultural dimensions

were collected via Hofstede Insights website (see Appendix 5). GDP per capita [GDP] was coded from World Bank Database. Consumer Confidence index [CCI] and Consumer Price Index [CPI] were coded from OECD database. For continuous moderators except cultural scores, i.e. HHI, GDP, CCI and CPI, which are time-series data, they were coded as aggregated annual data in the year of data collection. The year of publication was extracted from the studies and subtracted three years to receive a proxy for the year of data collection unless the actual year of data collection was reported.

After the author coded all studies, a second coder sampled 20% of the studies and replicated the coding for these studies. The rate of agreement was 95.2% and disagreement was solved by discussion.

4.5.4 Data analysis

4.5.4.1. Integration of effect sizes

The random effects model was chosen for effect size integration in this meta-analysis instead of fixed effects. This choice is based on multiple considerations. First, a fixed-effects model assumes that the between-study variance is only due to random sampling error. However, in loyalty program studies, different research designs, methods, and measurement instruments can become sources of heterogeneity (Bijmolt et al. 2011). Therefore, it is inappropriate to assume that the between-study variance only comes from sampling error. Second, the purpose of this meta-analysis is to provide effect size estimations that can be generalised to a larger population. This means that this study aims to make unconditional inferences about loyalty program membership effects. Thus, the random effects model is considered as a superior choice than fixed effects model.

The correlation coefficient was selected as the summary effect size because it is widely used and reported in marketing research and it is scale-free. Before the integration, other forms of effect sizes were transformed into correlation coefficients, using the formulas presented in Table 4.1. Following the suggestions of Hunter and Schmidt (2004), the effect sizes were corrected for measurement errors in dependent variables using Equation 4.1. To ensure the independence of effect sizes, when there were multiple measures of a relationship in a single study, an average effect size was calculated. Then, the reliability-adjusted correlation coefficients were transformed into Fisher's Z (Kirca et al. 2005). The effect sizes were weighted by the inverse of the sampling variance ($N-3$) to assign greater weights to more precise estimates (Lipsey and Wilson 2001). The results were then transformed back to correlation coefficients since they are easier to interpret.

To assess publication bias and account for the file-drawer problem, fail-safe Ns were calculated using Rosenthal's method (1979). Q-statistics and I^2 are also calculated to establish the homogeneity of effect sizes.

4.5.4.2 Moderator analysis

A hierarchical linear model (HLM) was used for moderator analysis. Since there are multiple effect sizes reported from the same study, these effect sizes are nested within samples and they are likely to be interdependent. Therefore, a two-level HLM which differentiates effects between effect size level (level 1) and study level (level 2) is suitable to account for the nested structure of the meta-analytic data (Bijmolt and Pieters 2001). Z-transformed correlations (Z_r) were used as the response variable in the HLM. 16 dependent variables (except customer loyalty, which is used as the reference group) were dummy-coded and the effect sizes were regressed on the 16 dummy variables at level 1, because these variables represent effect size level variation. At the study level (level 2), moderator variables (i.e., firm characteristics,

industry characteristics, national culture, economic factors), method moderators, and interaction terms were included.

To adopt the HLM approach, the data properties were examined. The intra-class correlation (ICC) assesses the amount of variation at the study level, which is calculated as:

$$ICC = \frac{\sigma_{u_0}^2}{\sigma_{u_0}^2 + \sigma_e^2} \quad (4.12)$$

Where $\sigma_{u_0}^2$ is the between study variance and σ_e^2 is the within study variance. ICC is interpreted as proportion of study-level variance compared to the total variance.

The estimated between-study variance is .011 and the within-study variance is .055. The ICC is .167. According to (Hox 2010), an ICC of .10 is reasonable, and .15 should be considered as high. Therefore, it is appropriate to use HLM for moderator analysis. To account for multicollinearity, the correlations between level 1 and level 2 independent and dependent variable were examined. The absolute values of correlations range from .001 to .767 (See Appendix 6). This level of correlation is acceptable as it is similar to other meta-analysis using HLM (e.g. Rosario et al. 2016).

Chapter 5

Results

5.1 Introduction

The aim of this chapter is to show the results of data collection and data analysis. First, it gives a description of the studies included in the meta-analysis, including industry and publication information. Next, the chapter continues to present the integrated effect sizes of loyalty program membership effects on customer outcomes. This indicates which outcomes are more (less) affected by loyalty program membership. Finally, the chapter gives the results of moderator analysis (HLM), from which the decisions on supporting/rejecting the hypotheses proposed in Chapter 3 are made.

5.2 Descriptive statistics

The overall search process returned 50 journal articles, 4 doctoral theses, 1 book chapter and 1 unpublished study (see Appendix 4). In total, 81 studies of independent samples were extracted from the published and unpublished papers and theses, from which 432 effect sizes are reported. The total number of subjects is 420,542. Figure 5.1 shows the frequency distribution of the adjusted effect sizes. The studies were

published from 1988 to 2019. The frequency of year of publication is presented in Figure 5.2.

Figure 5.1 Frequency distribution of effect sizes

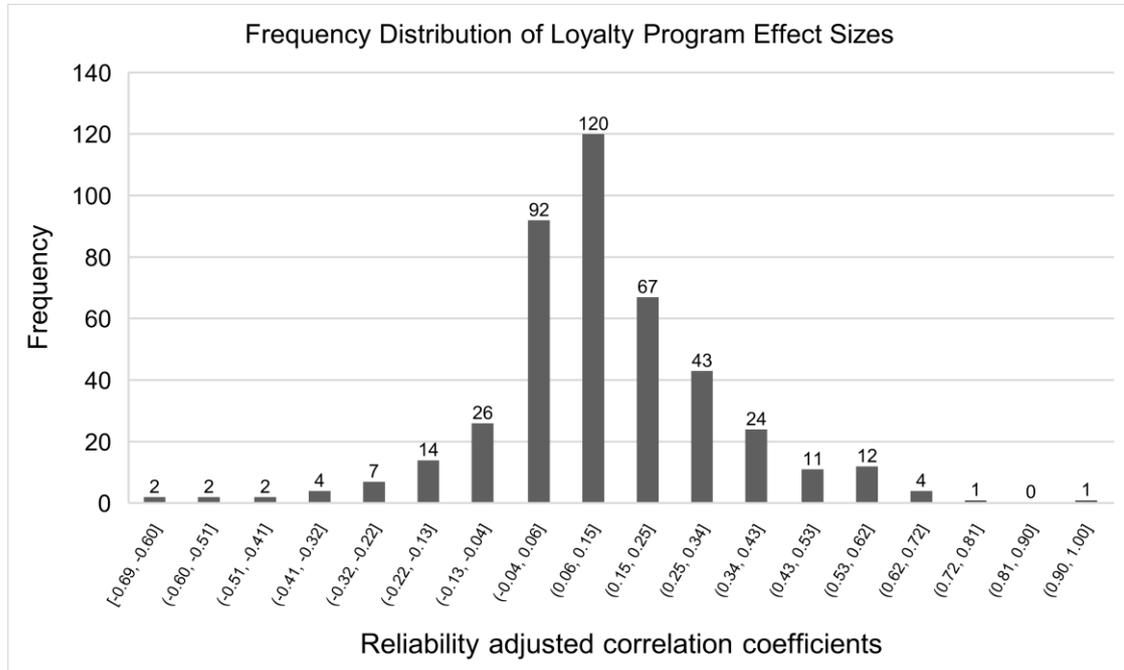


Figure 5.2 Frequency distribution of year of publication

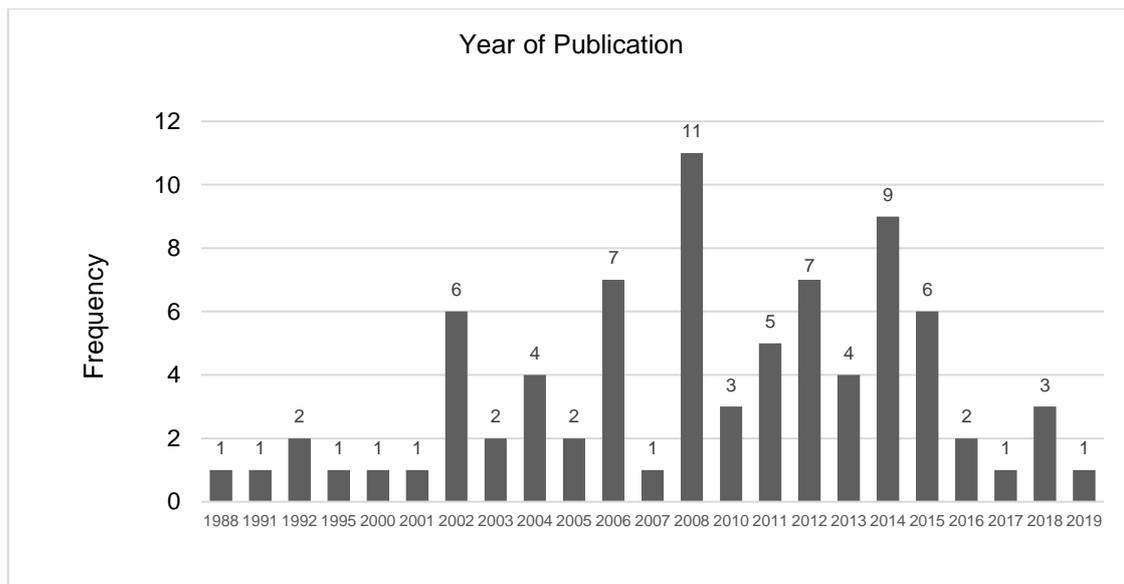


Table 5.1 Descriptive statistics

Study characteristics	Frequency	Percentage
Industry		
Retail	32	39.51%
Hospitality	7	8.64%
Telecommunication	2	2.47%
Banking and financial services	7	8.64%
Entertainment	4	4.94%
Airlines	5	6.17%
Apparel	7	8.64%
Automobiles	1	1.23%
Restaurants	3	3.70%
Food and beverage	6	7.41%
Household items	1	1.23%
Agribusiness	4	4.94%
Fuel	2	2.47%
Coalition programs	6	7.41%
Non-coalition programs	75	92.59%
Tiered programs	6	7.41%
Non-tiered programs	75	92.59%
Large firms	57	70.37%
Small firms	24	29.63%
Durables	10	12.35%
Non-durables	71	87.65%
Services	27	33.33%
Goods	54	66.67%
Utilitarian purchases	68	83.95%
Hedonic purchases	13	16.05%
Journal ranking		
ABS 4* and 4	19	23.46%
ABS 3	13	16.05%
ABS 2	16	19.75%
ABS 1	12	14.81%
Not in the ABS journal ranking list	21	25.93%
Objective data	24	29.63%
Other sources	57	70.37%
Student samples	4	4.94%
Non-student samples	77	95.06%
Controlled for self-selection effect	14	17.28%
Not controlled for self-selection effect	67	82.72%
Published studies (peer-reviewed)	71	87.65%
Unpublished studies (not peer-reviewed)	10	12.35%

The studies were conducted in different contextual settings. For example, retail is the most studied industrial setting among all studies, with 39.51% of the total studies were conducted in retail industry. Table 5.1 shows the descriptive statistics of study characteristics, including industries, program characteristics, product characteristics, and a number of method and publication related factors. These characteristics were used in the moderator analysis.

5.3 Integration of effect sizes

Following Lipsey and Wilson's (2001) approach, the effect sizes were integrated based on customer outcomes. As shown in Table 5.2, loyalty program membership positively affects 15 out of 17 customer responses, except for WOM behaviour ($r_{wc} = -.008$, $p > .05$) and cooperation ($r_{wc} = -.010$, $p > .05$). The insignificant effects might be due to the small number of effect sizes and small sample size. Other variables show significant correlations with loyalty program membership. The significant effects range from .060 to .230, indicating small to medium loyalty program membership effects (Cohen 1988). Despite the small effect sizes, the BESD shows that loyalty program membership can increase the likelihood of members displaying more favourable responses by up to 60% (repurchase intention). The BESD results indicate that loyalty programs improve the likelihood of members displaying more positive effects on different customer outcomes, e.g. for repurchase behaviour, this likelihood is improved by 43%, while for sales/profits, the likelihood is increased by 13%.

The fail-safe N_s exceed the tolerance level, meaning that the tolerance for future null results bringing the overall significant level to .05 is high, therefore suggesting that publication bias is not a serious issue. The Q -statistics are significant, and the I^2 values (above 75%) indicates that the between-study variance is caused by factors other than random sampling errors. Therefore, a moderator analysis is needed to explain the

influence of between study variation on the effect sizes. The next section presents the results for moderator analysis using HLM.

Table 5.2 Integration of effect sizes

DV	k ^a	N ^b	r ^c	rwc ^d	SD	-95%CI	+95%CI	BESD ^e	Q	I ²	FSN ^f
Brand attitude	14	6156	.138	.166*	.258	.015	.310	40%	405.580**	97%	590
Commitment	11	7861	.190	.223**	.235	.073	.364	57%	433.116**	98%	873
Cooperation	2	2944	-.009	.002	.027	-.065	.069	0%	2.103	52%	-
Customer identification	7	5421	.188	.209*	.195	.043	.363	53%	205.534**	97%	443
Customer loyalty	15	7370	.199	.218	.172	.122	.309	56%	216.340**	94%	1234
Repurchase behaviour	36	366981	.123	.178**	.083	.112	.243	43%	2522.720**	99%	14337
Repurchase intention	15	11386	.201	.230**	.176	.136	.320	60%	352.138**	96%	1875
Sales/profit	17	382996	.116	.060**	.025	.032	.089	13%	240.246**	93%	1407
Satisfaction	25	23851	.134	.145**	.148	.082	.206	34%	521.979**	95%	1844
Service quality	9	9715	.099	.104*	.124	.013	.192	23%	149.051**	95%	207
Share-of-wallet	14	12958	.213	.228**	.156	.144	.309	59%	314.665**	96%	3416
Switching costs	7	4727	.105	.113**	.083	.041	.184	26%	32.398**	81%	100
Trust	13	8270	.175	.220**	.144	.135	.302	56%	171.229**	93%	1212
Value perception	10	10418	.075	.085**	.094	.020	.150	19%	91.250**	90%	259
Willingness to pay	3	1491	.117	.123†	.088	-.010	.252	28%	11.412**	82%	15
WOM behaviour	4	2375	-.002	-.008	.235	-.272	.256	-2%	130.781**	98%	-
WOM intention	8	6130	.127	.136**	.102	.055	.216	32%	63.880**	89%	207

^a Number of studies

^b Cumulative sample size

^c Simple average correlation coefficient

^d Sample size-weighted reliability-adjusted average correlation

^e Binomial effect size display

^f Fail-safe N

** p < .01

* p < .05

† p < .1

5.4 Moderator analysis

The hypotheses (H1a to H6b) were tested using the hierarchical linear modelling approach. Two models were estimated. Model 1 includes the main effect of moderators. In model 2, the interaction terms between product characteristics and national culture are included. For hypotheses H1a to H4b, the results are referred to Model 1. For hypotheses H5a to H6b, the results are referred to Model 2, because adding additional interaction terms would change the interpretation of coefficients of the main effects. Table 5.3 presents the results from the two HLM models.

5.4.1 Firm-level characteristics

At the firm level, this study tests the impact of two program characteristics and firm size on loyalty program effectiveness. H1a states that coalition programs are less effective than other forms of programs. Evidence suggests that coalition programs do not perform differently to other programs ($\beta = -.024$, $p = n.s.$). H1a is not supported. H1b suggests that tiered programs have positive impact on loyalty program effectiveness. Contrary to what was expected, the tier structure of the program negatively influences loyalty program effectiveness ($\beta = -.125$, $p < .05$). H1b is partially supported as the result is significant, however not in the hypothesised direction. H1c proposes that loyalty programs perform better for large firms than for small firms. The size of the business significantly influences loyalty program effectiveness, in that larger firms enjoy higher return from loyalty programs than smaller firms ($\beta = .111$, $p < .01$). H1c is supported.

Table 5.3 HLM results

		Model 1	Model 2
	Hyp.	B	B
Level 2 variables			
Intercept ^b		.365	.422
Firm characteristics			
Coalition program	H1a	-.024	-.008
Tiered program	H1b	-.125*	-.166*
Size of the business	H1c	.111***	.123***
Industry characteristics			
Durability	H2a	-.097*	-.051
Services vs. goods	H2b	.065*	-.033
Hedonic vs. utilitarian purchase	H2c	.086*	-.636*
Market concentration (HHI)	H2d	-.005	-.185
Country characteristics			
Power distance	H3a	-.004*	-.006**
Individualism vs. collectivism	H3b	-.004*	-.006**
Masculinity vs. femininity	H3c	-.002	-.006***
Uncertainty avoidance	H3d	.002**	.002
Long-term vs. short-term orientation	H3e	.001	.001
Economic factors			
GDP per capita	H4a	.004*	.005*
Consumer confidence index	H4b	-.001	.004
Consumer price index	H4c	-.001	-.001
Method moderators			
Self-selection effect		-.124 [†]	-.161 ^{††}
Objective data		-.223 ^{†††}	-.226 ^{†††}
Student sample		.065	.081
Journal quality		.025 [†]	.029 ^{††}
Manuscript status		.136 [†]	.112
Interaction effects			
Power distance × Hedonic purchase	H5a		.015***
Masculinity × Hedonic purchase	H5b		.001
Uncertainty avoidance × Services	H6a		.006**
Long-term orientation × Services	H6b		-.006**

Note: The level 1 effects are left out for brevity. Full model results are available in Appendix 7

^a: unstandardised estimates

^b: intercept = customer loyalty

***significant at .001 (one-sided)

**significant at .01 level (one-sided)

*significant at .05 level (one-sided)

††† significant at .01 level (two-sided)

††significant at .05 level (two-sided)

†significant at .1 level (two-sided)

5.4.2 Industry-level characteristics

At the industry level, a number of product category characteristics and industry concentration are tested. Significant effects are also found at this level. Specifically, H2a states that loyalty programs are less effective for durable products than for non-durable products. a negative coefficient indicate that durable products receive lower loyalty program effectiveness ($\beta = -.097, p < .05$). H2a is therefore supported. H2b suggests that loyalty program effectiveness on services is higher than on goods. This is also supported ($\beta = .065, p < .05$). In terms of the nature of offering, H2c proposes that loyalty programs for hedonic products display higher effectiveness than for utilitarian products. The result shows that hedonic products benefit significantly more from loyalty programs than utilitarian products ($\beta = .086, p < .05$). Therefore, H2c is supported. H2d expects to find a positive influence of industry concentration on loyalty program effectiveness. However, the study does not find any evidence for the influence of industry concentration on loyalty program effectiveness ($\beta = -.005, p > .05$). H2d is not supported.

5.4.3 Country-level characteristics

H3a to H3e propose the influence of national culture on loyalty program effectiveness. The results suggest that three out of five cultural dimensions to influence loyalty program effects. In H3a, power distance is expected to positively influence the effect sizes. However, the result suggests that power distance is negatively related to customer responses to loyalty programs ($\beta = -.004, p < .05$). therefore, H3a is partially supported. H3b indicates that loyalty programs are more effective in collectivist culture than in individualist culture. As anticipated, individualism does show a negative influence ($\beta = -.004, p < .05$). H3b is supported. H2c suggests a negative influence of masculinity on loyalty program effects. This is not supported as the result is insignificant ($\beta = -.002, p = n.s$). H3c proposes that loyalty programs are more effective

in a high uncertainty avoidance culture. The result shows a positive influence from high uncertainty avoidance culture ($\beta = .002, p < .01$). H3d is supported. For the last cultural dimension, H3e states that long-term orientation has a positive influence on loyalty program effectiveness. However, this hypothesis cannot be supported in this study as the result is insignificant ($\beta = .001, p = n.s.$). H3e is not supported.

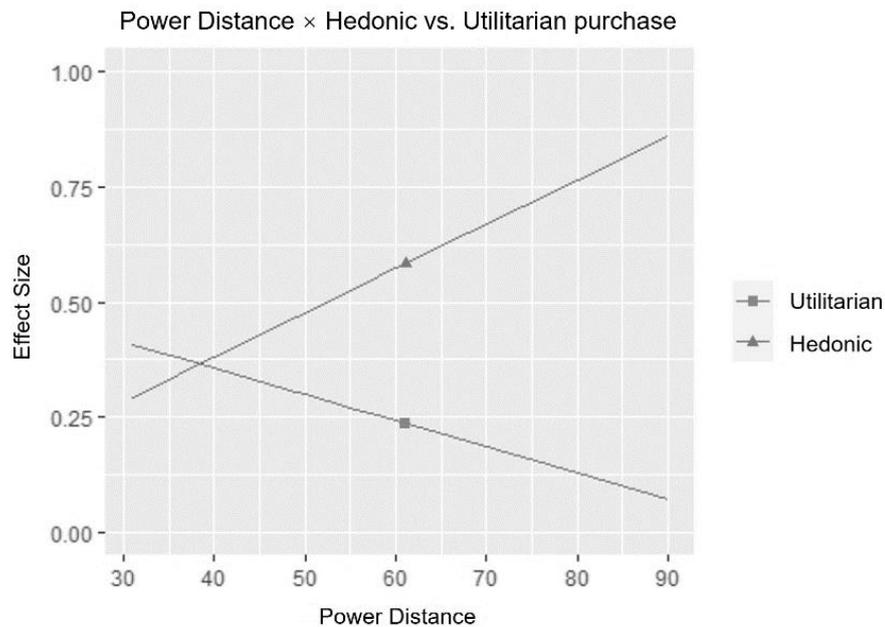
Besides national culture, economic factors are also considered to influence loyalty program effectiveness. H4a proposed that loyalty programs are more effective in countries with higher GDP per capita than in countries with lower GDP per capita. This is supported as the result shows that higher GDP per capita is beneficial for loyalty programs have superior performance ($\beta = .004, p < .05$). H4b states that loyalty program effects should be higher when CCI is high, i.e. customers are optimistic about future economic situations. But this cannot be supported as the result is insignificant ($\beta = -.001, p > .05$). H4c suggests that in adverse economic situations, such as high inflation, loyalty program effectiveness is reduced. The result also cannot provide support for this hypothesis ($\beta = -.001, p > .05$). Inflation level neither weakens nor strengthens loyalty program effects.

5.4.4 Interaction effects

In addition to test the moderators independently, this study also proposed a few interaction effects between product characteristics and national culture. This exploration is aiming to understand loyalty program effectiveness in a more complex setting. In Model 2, a few interaction effects between national culture and industry characteristics are significant. First, H5a states that in a high power distance culture, loyalty programs exert stronger effects on hedonic purchases than on utilitarian purchases. This hypothesis is supported, as a significant positive coefficient is found ($\beta = .015, p < .01$). As shown in Figure 5.3, as power distance increases, loyalty program

effects on hedonic products increase, whereas for utilitarian products, loyalty programs become less effective as the increase of power distance in a country.

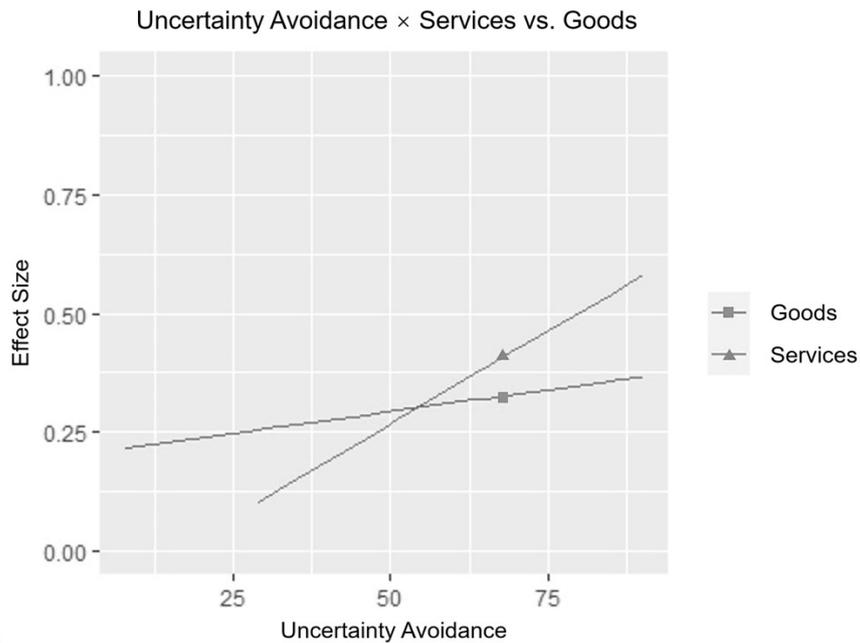
Figure 5.3 Power distance × Hedonic vs. utilitarian purchase



H5b states that loyalty programs are more effective for hedonic products in a feminine culture than in a masculine culture. This is not supported ($\beta = .001$, $p > .05$).

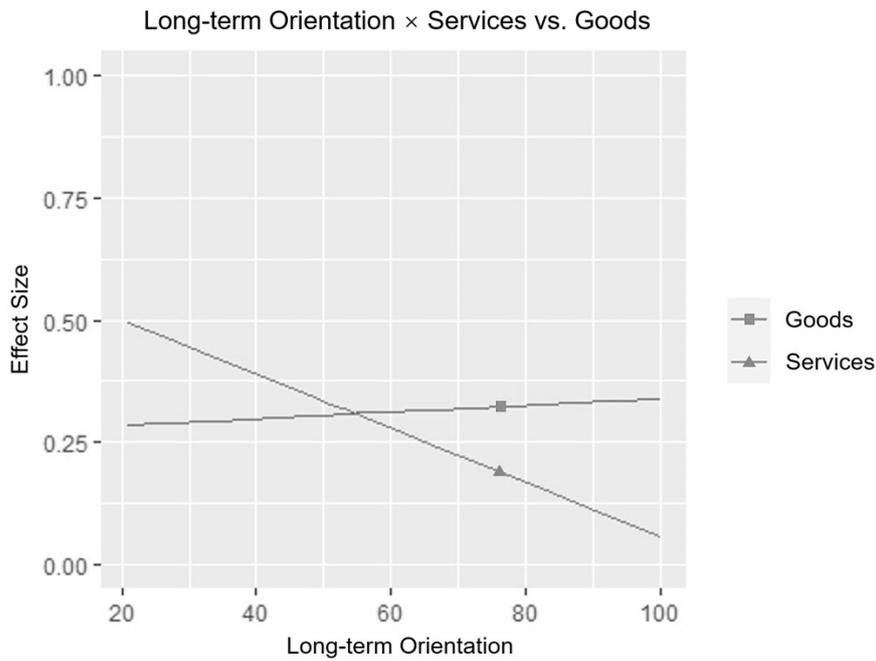
H6a suggests that a high uncertainty avoidance culture amplifies loyalty program effects on service offerings. Consistent with our expectation, loyalty program effects on services are stronger than on goods in a high uncertainty avoidance culture ($\beta = .006$, $p < .01$). H6a is therefore supported. As shown in Figure 5.4, loyalty programs have positive effects on both goods and services. However, the influence is stronger on services than on goods.

Figure 5.4 Uncertainty avoidance × services vs. goods



Finally, H6b proposes that a long-term orientation culture is beneficial to loyalty program effects on goods than on services. We find that with the increase of long-term orientation, loyalty programs become more effective on goods than on services ($\beta = -.006, p < .01$). therefore, H6b is also supported. As presented in Figure 5.5, loyalty programs have a slight positive effect on goods, while having a negative effect on services as the long-term orientation of a country increases.

Figure 5.5 Long-term orientation × services vs. goods



Overall, 10 out of 19 hypotheses are supported. At the firm level, both variables of program structure are insignificant. However, the effect of firm size is supported. At the industry level, the hypotheses related product characteristics are significant, while the effect of market concentration is not support. At the country level, the influence of national culture is evident. And the interaction effects with product characteristics also receive some support. Overall, the product characteristics at industry level are most influential factors in this model. The results of the hypotheses testing are presented in Table 5.4.

Table 5.4 Summary of hypotheses testing

Hyp.	Moderator	Expected direction	Result
H1a	Coalition programs	-	Not supported
H1b	Tiered programs	+	Partially supported
H1c	Firm size (large vs. small)	+	Supported
H2a	Durables vs. non-durables	-	Supported
H2b	Services vs. goods	+	Supported
H2c	Hedonic vs. functional purchases	+	Supported
H2d	Market concentration	+	Not supported
H3a	Power distance	+	Partially supported
H3b	Individualism	-	Supported
H3c	Masculinity	+	Not supported
H3d	Uncertainty avoidance	+	Supported
H3e	Long-term orientation	+	Not supported
H4a	GDP per capita	+	Supported
H4b	CCI	+	Not supported
H4c	CPI	-	Not supported
H5a	Power distance x Hedonic purchases	+	Supported
H5b	Masculinity x Hedonic purchases	+	Not supported
H6a	Uncertainty avoidance x Services	+	Supported
H6b	Long-term orientation x Services	-	Supported

5.4.6 Method moderators

There were no hypotheses developed for method moderators. These variables were included in the model for exploration of the influence of different methodological designs on loyalty program effects. The results revealed that various methodologies used in loyalty program research do play a role in the variation in loyalty program effects. Specifically, studies that use objective data report significantly smaller effect sizes than studies using other types of data sources ($\beta = -.223, p < .01$) such as self-reported data. Regarding sample types, effect sizes reported by student samples and customer samples do not significantly differ ($\beta = .065, p = n.s.$). In terms of journal quality, lower quality journals tend to report larger effect sizes than higher quality

journals ($\beta = .025, p < .10$). furthermore, studies that have controlled for self-selection effect report significantly lower effect sizes ($\beta = -.124, p < .10$). Finally, effects reported by published studies are stronger than those reported by unpublished studies ($\beta = .136, p < .10$).

Chapter 6

Discussion and Conclusion

6.1 Introduction

In the above chapter, the direct effects of loyalty program membership on customer outcomes, and the moderating effects on this relationship were examined. Overall, this study finds that 15 out of 17 customer outcomes were found to be significantly higher among members than among non-members; and the moderating effects were found to be stemmed from firm-, industry-, and country-level. This chapter aims to synthesise the findings from the previous chapter, justify how the findings answer the research questions outlined in Chapter 1. Moreover, based on the findings, this chapter offers several implications for management practices related to loyalty program implementation.

6.2 RQ1 - Does loyalty program membership significantly enhance customer outcomes?

Extant literature suggests that the magnitude of loyalty program effects varies considerably. This phenomenon introduces some confusion into loyalty program

effectiveness and triggers the exploration of the 'true' effects of loyalty programs. This study answers the first research question by integrating the effects from different studies. The results revealed small average positive effects of loyalty programs on a range of customer responses. The average correlations range between .06 and .23, signifying small to medium effects (Cohen 1988). Therefore, loyalty programs do significantly enhance customer outcomes, but not to a great extent.

Although in general, the effects of loyalty programs are relatively small, as compared to the meta-analysed effect sizes of other marketing instruments (e.g. Blut et al. 2018), there are still differences in the magnitude of effects among the customer outcomes examined in this study. For measurement of customers' purchase-related behavioural patterns, the strongest effects are found for repurchase intention ($rwc = .230$) and share-of-wallet ($rwc = .228$). Repurchase behaviour ($rwc = .178$) is less influenced by loyalty programs than repurchase intention is. This is consistent with other findings from meta-analysis (Blut et al. 2015).

However, when loyalty program effectiveness is measured by monetary value, such as sales or profits, the effect is much smaller ($rwc = .06$). This is possibly due to that the measurement of repurchase behaviour comprises of different metrics, such as purchase frequency and inter-purchase time. These metrics are not necessarily correlated with the spending amount.

In terms of WOM, the averaged effect on actual WOM behaviour (n.s.) and the effect on WOM intention ($rwc = .127$) are both weaker than repurchase behavioural measures. This is possibly due to that WOM is triggered by a number of evaluative and relational constructs, such as satisfaction, trust, and commitment (de Matos and Rossi 2008). Transactional customers may repeatedly purchase from a brand because of the economic benefits provided by loyalty programs. But these customers are less likely to develop deeper relationship with the brand. Therefore, the effects of loyalty programs

on behaviours like WOM, which require relational antecedents, are less effective than the effects on repurchase behaviour.

With respect to relational outcomes, loyalty programs also have relatively strong impact (as compared to other effects in this study) on trust ($rwc = .220$), commitment ($rwc = .223$), and customer identification ($rwc = .209$). However, for attitudinal outcomes related to customer evaluation, such as satisfaction ($rwc = .145$), service quality perception ($rwc = .104$), value perception ($rwc = .085$), and brand attitude ($rwc = .166$), loyalty program effects on these outcomes are weaker than which on relational outcomes. This indicate that when evaluating the products and services, customers tend to be relatively objective, independent of the membership status. But for relationship development, customers would consider loyalty programs as more important, as they perceive the continuous relationship building efforts from the company. Therefore, the effects on relational outcomes are observed as higher than evaluative outcomes.

6.3 RQ2 – Factors contributing to inconsistency in loyalty program research

This study also finds substantial variation in these effect sizes. Prior studies mostly focus on a specific program or sector. This meta-analysis allows the investigation of loyalty program effectiveness across various contexts.

6.3.1 Firm-level characteristics

At the firm level, three characteristics were tested: coalition vs. non coalition programs, tiered vs. non-tiered programs, and firm size. This study found some confounding results regarding loyalty program structure. In the analysis, coalition programs perform as good as non-coalition loyalty programs, while Bombaij and Dekimpe (2019) show that coalition programs are negatively related to retailer performance. Typically,

coalition programs function through enhancing the value perception of the program through the participation of multiple retailers (Berman 2006). The value perception of a program can vary depending on specific conditions, e.g. the type and timing of rewards (Yi and Jeon 2003). This is possibly the reason why this moderator is not significant in the current study.

Regarding tiered programs, meta-analytical evidence does not support the view that tiered programs have superior performance than standard programs (Chaudhuri et al. 2019). Conversely, the tier structure was found to undermine loyalty program effects. This is possibly due to the fact that the studies of tiered programs largely focus on the effect of transition between tiers, especially about status upgrading, without sufficient acknowledgement of bottom tier customers. Our finding suggests that loyalty and purchase behaviour of lower tier customers, which typically comprises a large proportion of the firm's customer base, are impeded by the tier structure as they perceive inferior status, therefore, bringing the overall effect of the loyalty program down. This result also indicate that the examination of tiered programs should account for the overall customer base, not only upgraded consumers.

With respect to firm size, consistent with the double jeopardy phenomenon, the return of loyalty programs is higher for large firms than for small firms. Considering that large firms may have a more diverse product portfolio, loyalty programs are more effective in that customers also use loyalty programs for cross-category purchases (Liu and Yang 2009).

6.3.2 Industry characteristics

With limited studies examined loyalty program effects in multiple industrial settings, this study contributes to loyalty program literature by substantiating that loyalty program effectiveness is subject to sectors. Specifically, loyalty programs are less effective with

durable goods. In a context where customers do not regularly return to the market, a loyalty program might not be an effective strategy to sustain customer loyalty and revenue growth. This point is backed by the finding of Leenheer and Bijmolt (2008), who observe that purchase frequency is a determinant of a retailer's decision to adopt a loyalty program.

In service sectors, loyalty programs are likely to show better effectiveness than for goods. Because of the complexity and intangibility of services, customers desire to develop long-term relationships with the service provider to reduce risks (Berry 1995).

Moreover, loyalty programs are more effective for products and services consumed for hedonic purposes than for utilitarian purposes. This is because the benefits of loyalty programs can be viewed as the compensation for the guilty feeling of consuming hedonic products. Loyalty programs can be used as an effective tool to communicate messages and rewards that rationalize the hedonic purchase decisions.

However, there is no evidence that loyalty program effects increase with market concentration. This is possibly because in a concentrated market, customers have limited choices. Then loyalty program effects may become insubstantial since both members and non-members could be equally likely to purchase from the brand due to the lack of alternatives. This finding challenges the view that competition reduces loyalty program effects (Mägi 2003).

6.3.3 Country characteristics

This study also aims to further the understanding of loyalty programs in international markets. The findings at this level introduce some controversy into this field of research and alert researchers to the inconsistent effects of national culture. This examination makes a notable contribution to loyalty program research as it provides a

comprehensive assessment of national culture's influence on loyalty program effectiveness, as well as empirically tested some economic factors.

First, although high power distance is considered as a reinforcement factor for status-induced loyalty (Samaha et al. 2014), this study find that loyalty program effects reduce with the increase of power distance. Although scholars have argued that in such a cultural context, the status and privileges offered by loyalty programs enhance customer response to loyalty programs in high power distance cultures, it is also likely that customers with a high power distance cultural value have high acceptance of inequality and therefore, the status mechanism may be less effective, as people accept hierarchies and believe that they have their proper places to be. Wang and Lalwani (2019) further explore that two dimensions of power distance, power distance perception and power distance value, have differential effects on customer responses to loyalty programs, such as satisfaction. Power distance perception enhances satisfaction for members, while power distance value decreases satisfaction. Therefore, it is reasonable that power distance culture may have mixed effects on loyalty program effectiveness. In addition, in high power distance cultures, customers may perceive that loyalty programs are a manipulative tool implemented by companies. In order to demonstrate that they have power of control over their purchase decisions, customers may resist loyalty programs and thus present lower responses to loyalty programs.

Second, individualism shows a negative effect on loyalty program outcomes. This result is consistent with Samaha et al. (2014) but contrary to Bombaij and Dekimpe (2019). The assumption is that customers in collectivist countries value relationships more and are more likely to develop good relationships with firms. While people in individualist countries only care for themselves and immediate family. Relationships with firms are considered less important in such as culture. Bombaij and Dekimpe (2019) based their argument on that customers in individualistic countries are more

likely to accept personalised benefits offered by loyalty programs. This is a more detailed argument as it concerns the type of rewards and design of loyalty programs, while the former perspective is from a macro level. More evidence is needed to further clarify this relationship.

Third, there is no evidence that masculinity influences loyalty program effectiveness. This is perhaps because masculinity may show mixed moderating effects depending on the specific customer outcomes. A feminine culture can enhance relationship development, therefore contribute to the effects of loyalty programs on relational outcomes. Whereas a masculine culture value achievement and status, which can be demonstrated through consumption power and preferential treatment. It is postulated that loyalty programs may have superior effects on behavioural outcomes in a masculine culture.

Fourth, in a high uncertainty avoidance culture, loyalty programs have also seen higher effectiveness, especially for the service industry because of the higher potential risks associated with service delivery. Customers in countries with high uncertainty avoidance culture therefore would tend to rely on loyalty programs to reduce the perceived risks.

Finally, contrary to the expectation, the result does not support that long-term orientation has a positive effect on loyalty program effectiveness. However, the interaction effect shows that loyalty programs are less needed for services in a long-term orientation culture. This indicate that the conditioning effect of national culture on loyalty program effectiveness is dependent on the product category.

This study also examined the economic environment of a country in relation to loyalty program effectiveness. It is found that as GDP per capita increases, loyalty programs tend to perform better. This finding suggests that in wealthier countries, loyalty programs may be more effective. It may be because consumers in poorer countries

have limited disposable income to purchase beyond the necessary. Also, lower average spending may result in a longer period before reaching the reward threshold as compared to higher spending-levels in wealthier countries. The loyalty program rewards then may seem less attractive due to the lengthy process. The CCI and CPI are found not to influence loyalty program effects. These results imply that even in adverse economic situations, loyalty programs might still be effective as customers would rely more on the saving features of loyalty programs.

6.3.4 Method moderators

On a more methodological note, there is a significant self-selection effect in loyalty program research. As discussed by Leenheer et al. (2007) and Meyer-Waarden and Benavent (2009), loyalty program effects can be overestimated because of the self-selection effect, which means that loyalty program members who choose to opt in the program are already more loyal than non-members. Their positive responses are not due to the loyalty program, but the established loyalty before entering the program. The result shows that this effect does indeed exist. This study also discovered that effect sizes stemming from objective data are smaller than those derived from self-reported data, suggesting that self-reporting measures could inflate loyalty program effects. Similar to Scheibehenne et al. (2010), results from published studies are stronger than which from unpublished studies. This suggests potential publication bias in loyalty program research. Lastly, lower-ranked journals tend to report higher effect sizes. In higher quality journals, researchers tend to use more sophisticated methods and control for more variation from other variables. Therefore, the effects may be lower than which form lower quality journals. These results show that various research designs and methods add variance to the loyalty program findings. Researchers are encouraged to consider these methodological specifics when interpreting their results.

6.4 Managerial implications

Moreover, this meta-analysis also suggests key learnings to consider for better management of loyalty programs. Managers can consult the results from this study to assist their decision-making regarding loyalty program adoption and implementation.

Table 6.1 summarises the managerial implications of this study.

Table 6.1 Results and implications

Moderator	Result	Implications
<i>Firm characteristics</i>		
• Tiered programs	-	Tiered programs may be a “zero-sum” game. Tiered programs may only be effective for top tier members (Anderson et al. 2006). Managers should carefully select top tier members and prevent the loss of lower tier members to maximize the overall return of the program.
• Size of the business (large vs. small)	+	Large firms enjoy higher return from loyalty programs. This is possibly because large firms have bigger customer base, and multiple product categories that customers can cross-buy. Future research can explicitly model loyalty program effects across firms and product categories (Chaudhuri et al. 2019)
<i>Industry characteristics</i>		
• Durability	-	Loyalty program effectiveness is related to purchase frequency. Loyalty programs may not be a feasible strategy for durable products. Non-durable product firms benefit from loyalty programs more.
• Services vs. goods	+	Services are more complex and riskier than goods, customers may use loyalty programs as a tool to mitigate risks. Service firms are advised to adopt loyalty programs, as they may have enhanced ability of customer retention in service industries.
• Hedonic vs. utilitarian purchases	+	Hedonic product/service providers can use loyalty programs as a way to provide persuasive messages and rewards that rationalize purchase decisions.
<i>Country characteristics</i>		
• Power distance	-	A high power distance culture reduces loyalty program effectiveness. This is possibly due to multiple facets within power distance having

differential effects on status perception within loyalty programs. Managers should exercise caution when implementing loyalty programs in countries with high power distance.

- Individualism vs. collectivism - loyalty programs less effective in an individualistic culture because customers are likely to give up social bonds created by loyalty programs for immediate benefits. Possibly immediate rewards and monetary rewards may be used in an individualistic culture.
- Uncertainty avoidance + Uncertainty avoidance culture can enhance loyalty program effectiveness. Especially for offerings which the performance is less predictable, e.g. services. Loyalty programs may have higher effectiveness on risky products and services in higher uncertainty avoidance culture.

Economic factors

- GDP per capita + loyalty program effectiveness diminishes as the GDP per capita decreases. This is possibly because consumers with less disposable incomes are less likely to purchase excessively despite the incentives and benefits of loyalty programs. In lower GDP markets, saving features of loyalty programs may be more receptive by consumers. However, managers should be aware of that, those customers are attracted by saving features are likely to be attracted to other more economical options.

Interaction effects

- Power distance x Hedonic purchases + In high power distance countries, loyalty programs for hedonic products/services may receive superior effectiveness. Hedonic products/services providers may consider using loyalty programs where power distance is high.
- Uncertainty avoidance x Services + High uncertainty avoidance culture can amplify loyalty program effectiveness on services. Service providers are encouraged to adopt loyalty programs in countries with a high uncertainty avoidance culture.
- Long-term orientation x Services - Loyalty program effects on services are lower in long-term orientation culture. This is because a long-term orientation culture naturally fosters longer customer relationships. Loyalty programs in long-term orientation culture might be negligible.

Methods

- Objective data vs. other - Considering that objective data is less biased, loyalty program effects might be overestimated

if a study relies on self-reported data. Therefore, it is suggested that combined data sources could be used in future research to avoid overestimation.

- Self-selection (controlled vs. non-controlled) - Studies do not control for self-selecting effect may overestimate loyalty program effects. Future studies may consider control for this effect, such as using longitudinal data or randomization in experimental studies.
 - Journal quality - Since higher-ranked journals have more rigid quality control and more rigorous methodologies, they tend to report smaller effect sizes. Results from lower-ranked journals may overestimate loyalty program effectiveness.
 - Manuscript status + Published works tend to report higher effects of loyalty programs. There is potential publication bias. The real effects of loyalty programs might be smaller than reported.
-

6.4.1 Implications from RQ1

Implementing a loyalty program is an important strategic decision. Considering the large initial investment and subsequent operating costs, managers are concerned with whether loyalty programs can successfully enhance customer loyalty. The generalisation of loyalty program effects in this study provides an answer to this question: Yes, firms may benefit from loyalty programs. However, they should not expect high returns, as the average effects are not strong. Researchers have expressed concerns over whether the firm can financially benefit from loyalty programs (Shugan 2005). Taking the small effects and the costs of running such initiatives into account, firms can do an ROI analysis weighting additional revenues that are due to increased loyalty against costs of running the program to assist with the decision-making of loyalty program adoption.

Firms differ in their strategic focus. Some firms expect to build a strong brand, while some others want to increase sales and profits or acquire new customers. Loyalty

programs can help to achieve these objectives. However, loyalty programs impose differential effects on customer outcomes, i.e., loyalty programs cannot enhance those desired customer outcomes equally. Companies can use the information about the average effects of loyalty programs provided in this thesis to better understand the effectiveness of their programs and develop their strategic planning. For example, this thesis finds that loyalty programs have relatively higher influence on repurchase intention and repurchase behaviour, while for evaluative outcomes such as service quality and value perception, as well as WOM, loyalty program effects are weaker on these outcomes. Therefore, to retain customers and to encourage repeated purchases, loyalty programs can contribute to this objective. But if the strategic objective is to acquire new customers through enhancing WOM giving and customer referral, loyalty programs might not be the most suitable tool. Companies can devise complimentary strategies for those outcomes that loyalty programs are less capable of improving.

Firms should also consider how to evaluate the effectiveness of their programs. Some outcomes are easier to measure than others. Repeated purchases and sales are easily captured by loyalty programs. Therefore, firms can assess whether loyalty program members exhibit higher purchase frequency and spending. However, for less observable outcomes, such as brand attitude, trust, and commitment, firms may use different methods to assess them, such as customer surveys or through salespersons interacting with customers. Measuring loyalty program effectiveness on attitudinal outcomes require more effort from the firm. Managers can evaluate the importance of understanding those attitudinal variables against the strategic objectives of the firm and decide whether to integrate the assessment of customer attitudes into measuring loyalty program effectiveness.

6.4.2 Implications from RQ2

The testing of potential moderator also offers useful implications for managers. This thesis provides some evidence which urges managers to consider when implementing their loyalty programs. First, managers are usually confronted with different options of loyalty program structure. Indicated by the results of this study, firms are advised to be cautious when deciding the form of loyalty programs, as the effectiveness of different program structures cannot be substantiated. For example, research has found mixed regarding the effectiveness of tiered programs. The results and performance of program designs and structures are not straightforward therefore require careful consideration. What managers should consider is the potential factors that influence the effect of these program characteristics. An internal testing of the programs with a sample of customers before officially launch the program may help managers to gain more insight into the appropriate form of loyalty programs.

Second, firms should recognise that loyalty program effectiveness is subject to product categories and features. For example, loyalty programs may not be a sensible strategy for durable products, because this study finds that loyalty program effects are weaker for durable products than for non-durable products. This is possibly durable products are bought less often. With respect to perceived risks, customers tend to rely on loyalty programs to increase their trust in the company to mitigate the potential risks of purchases. Loyalty programs show stronger effects on risky purchases such as services would be more effective. Therefore, service providers should adopt loyalty programs as they can expect higher return from the program. The same applies to hedonic products. The rewards provided by loyalty programs can rationalise hedonic purchases, thus loyalty programs can see higher effects for hedonic products. In summary, our evidence suggest that managers should consider the inherent nature of the offerings, such as purchase frequency, performance heterogeneity, and what

purposes the product/service is serving, when exploiting loyalty programs and assessing loyalty program effectiveness.

Third, the analysis of national culture and economic factors provides insights into loyalty program management across countries. For companies operating in international markets, the question lies whether to implement a standard loyalty program in all markets, or to have customised programs in specific markets. Since this study finds that some national culture dimensions and economic environment, e.g. GDP per capita, are critical to loyalty program effectiveness, managers could model the influence from the national level as well as customers' mindsets in different countries using the results from this study to assist their decision-making. For example, in a country with high individualist culture, managers should recognise that overall, loyalty programs are less effective than in collectivist culture. Managers can also incorporate features of loyalty programs which are suitable for an individualist culture, e.g. customised offers are more receptive in an individualist culture (Kramer et al. 2006). Therefore, loyalty programs in individualist countries can be tailored as more personal and provide customised rewards to enhance the effectiveness. Another example is that, although loyalty programs are more effective in countries with high GDP per capita. Managers emphasise on the saving features of loyalty programs in low GDP countries. Then, loyalty programs may be more receptive by consumers. However, managers should be aware of that, those customers are attracted by saving features are likely to be attracted to other more economical options.

Furthermore, when considering the impact of culture and how loyalty programs should perform in different countries, managers are advised to also consider the intervening effect of product or industry characteristics, because this thesis finds that the influence of culture can vary depending on industry-level differences. This has crucial implication for loyalty program management because the situational factors are often complicated and are influenced by one another. For instance, the positive reinforcement of high

power distance culture is found for hedonic purchases but not for functional purchases. Managers should be aware of that the effects of a loyalty program for functional products in a low power distance culture are possibly lower than the effects of a program in high power distance culture for hedonic products. Thus, managers should not compare loyalty programs in parallel. Instead, this thesis suggests that managers should consider the macro environment and product characteristics simultaneously when devising their loyalty program strategies. It is worthwhile predict the magnitude of effects of loyalty programs under certain conditions using the coefficients reported in this thesis. This would help managers to get a clear and measurable understanding of how loyalty programs perform in different situations.

6.5 Limitations and research agenda

Meta-analysis is subject to a few limitations, for example, because it is using secondary data, some interesting and relevant variables could not be tested due to the unavailability of the data. Despite this, meta-analysis meaningfully summarises prior research, which can offer suggestions and directions for future research in this domain. Based on this study, a few future research questions are proposed and summarised in Table 6.2.

Table 6.2 Future research questions

Issues	Questions for future research
Dependent variables	<ul style="list-style-type: none"> • What are the moderating effects of level 2 variables on individual dependent variables? This study did not differentiate customer outcomes in our moderator analysis. However, the moderators may have divergent effects on individual outcomes. Future research can contrast the effects of level 2 moderators on a number of customer response variables. • How effective are loyalty programs in terms of customer re-acquisition? Researchers can investigate whether having a loyalty program membership affects customers' decision to return after defection, as well as how loyalty programs can be leveraged for win-back offers.
Attitudinal mediators	<ul style="list-style-type: none"> • Which attitudes can mediate the effects of loyalty program membership on behaviours? Literature suggests that attitudinal constructs can mediate loyalty program effectiveness (e.g. Morgan, Crutchfield, and Lacey 2000). Future research can explore the mediating paths within loyalty programs.
Differential effects of loyalty program mechanisms	<ul style="list-style-type: none"> • Which mechanisms of loyalty programs are the most effective? This study concludes six mechanisms from literature. It is still unclear the effects of each specific mechanism or their joint impact on loyalty program effectiveness.
Contextual factors	<ul style="list-style-type: none"> • What are other contextual factors that may influence loyalty program effects? More contextual factors need to be tested for a better understanding of loyalty programs. For example, this study was not able to include customer heterogeneity in our model due to the unavailability of data. Primary research can explore customer-related factors better than meta-analysis. Moreover, in this study, coalition programs are not found to be different from other programs. They may have higher/lower effectiveness in specific contexts. Future studies can explore the situations where this specific form of programs perform differently from others.
Methods	<ul style="list-style-type: none"> • How loyalty program effects change over time? Cross-sectional data provides little insights to this question. Longitudinal studies can investigate the evolution of customers within loyalty programs, especially pre- and post-program comparison. This type of research design also addresses the self-selection effect as found in this study. • What operationalisations are most accurate in terms of reflecting loyalty program effectiveness? This meta-analysis finds that studies using objective measures report weaker effects than studies using self-reporting measures. Future studies may consider these issues when selecting instruments for measuring loyalty program effectiveness.

6.5.1 Dependent variables

The limitations relating to the dependent variables, i.e. customer outcomes, are two-folded. The first one concerns the categorisation of dependent variables. Similar to the approach adopted by Pick and Eisend (2016) and Janakiraman et al. (2016), this study tested the moderating effects of level 2 variables on all customer response outcomes while controlling the influence of loyalty program outcome types at level 1. It remains unclear whether these moderators have differential effects on individual or more specific categories of outcomes. As discussed above, the masculine-collective culture may influence attitudinal and behavioural outcomes differently. Future research can use an established framework to categorise loyalty program outcomes and explore the moderating effects on these categories of outcomes to help manager better exploit loyalty programs for specific strategic objectives.

The second limitation is the missing dependent variables in this study. Although a great deal of effort has been dedicated to summarising 17 customer outcomes, there are still some customer outcomes which are not included in this study due to the small number of effect sizes available to be synthesised, for example, relationship duration (Seiders et al. 2005). Furthermore, there could be potential customer outcomes that loyalty programs can influence, however, extant research is insufficient to address this issue. As Kumar and Reinartz (2016) note, customer win-back is a critical component of the CRM strategy. As loyalty programs can collect customer consumption preference and history, which are critical for customer re-acquisition (Pick et al. 2016), primary research can explore how loyalty programs can be leveraged as a tool to win customers back.

6.5.2 Attitudinal mediators

The second limitation is about the potential mediating effect missing in the model. This study does not consider the connections between attitudes and behaviours because

the focus of our study is to test the moderators on loyalty program effects, rather than testing a large nomological network. Literature suggests that some attitudinal constructs, such as trust, commitment, and satisfaction, can mediate loyalty program effectiveness (e.g. Morgan, Crutchfield, and Lacey 2000). These variables are treated as outcomes in this study. Future studies can consider potential mediating effects between loyalty program membership and behavioural measurements.

6.5.3 Differential effects of loyalty program mechanisms

Third, several mechanisms, including switching costs, goal-attainment, learning theory, habit, social comparison, and relationship, have been put forward to justify loyalty program effectiveness. However, this study does not explicitly test the effect of these mechanisms, and also not consider how their effects might differ. For example, Hartmann and Viard (2008) argue that switching costs are a negligible feature in loyalty programs since switching costs only motivate customers who place little value at the beginning of the program and greater value as they approach to a reward. However, they rarely get to this stage because of low purchase frequency. Moreover, different mechanisms may perform differently under various contextual situations. For example, masculinity may weaken the effectiveness of communal-based mechanisms (e.g. trust and commitment) while increase the effectiveness of comparison-based mechanisms (e.g. status) (Beck et al. 2015). Further investigation should explore the most powerful mechanisms for loyalty programs and how they interact with contextual factors.

6.5.4 Contextual moderators

Fourth, despite the moderators proposed in this study, there are additional moderators that may also explain the variation in loyalty program effects. However, due to the unavailability of the data, this study could not test those moderators. For example,

customer-related information is not tested in this study. While as discussed in Chapter 2, customer characteristics are also important determinants of loyalty program effectiveness. Primary studies can address this issue by collecting data on specific customer-related factors, such as customer shopping orientation (Mägi 2003).

6.5.5 Methodological considerations

Finally, the influence of methodological differences was explored. Results from method moderators suggest that methodological issues should be considered by researchers. Consistent with Leenheer et al. (2007), this study finds that studies which have controlled for self-selection effect show smaller effects. To obtain a more accurate estimation of loyalty program effects, future research may wish to consider the self-selection effect for either research design or interpretation of results. For examples, randomised trials and longitudinal studies can address this issue effectively. In addition, this study finds that self-reporting measures could also inflate loyalty program effects. Therefore, future studies could consider using mixed data sources to better reflect loyalty program effects on different outcomes.

Other limitations concern the nature of meta-analysis, which is a method of analysing secondary data. First, secondary data may be subjected to inaccuracy (Malhotra 2010). Because the author does not have a holistic picture of or control over the procedure of data collection, analysis, and reporting of the papers included in the meta-analysis, in some cases, it is difficult to determine the accuracy of the secondary data. Second, secondary data source may be incomplete. For example, when collecting country level information, The OECD database cannot provide statistics for Pakistan and Romania. Therefore, missing information needs to be replaced with the means of certain variables across all other countries. This procedure also contributes to the inaccuracy of the meta-analytic data.

6.6 Conclusion

Due to the prevalence of loyalty programs in many industries, increasing attention has been paid to investigating the return of this loyalty initiative. This thesis provides a timely summary of the current research on the effectiveness of loyalty programs using a meta-analysis. It identifies the magnitude of and direction of loyalty program effects on different customer outcomes. The generally weak effects suggest that managers should carefully evaluate the use of loyalty programs for their businesses, given the high initial investment of launching a loyalty program. To help managers better exploit loyalty programs, this thesis also offers an assessment of various contextual factors that influence their effectiveness. It is recommended that managers should consider the firm-, industry-, and country level variation on loyalty program effectiveness, and tailor their loyalty programs to different settings to obtain an optimal output of loyalty programs. The author hopes that the results and implications offered in this thesis can pave the avenue for future research and further the understanding of loyalty program effectiveness in various contexts.

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Appendices

Appendix 1 List of Variables

Variable	Explanation
STUDYID	The unique identifier of each study
BRANDATTITUDE	Brand attitude
COMMIT	Commitment
COOP	Cooperation
ID	Customer identification
RI	Repurchase intention
RB	Repurchase behaviour
SALESPROFIT	Sales/profit
SAT	Satisfaction
SERVQUAL	Service quality perception
SOW	Share of wallet
SWITCHING	Switching costs
TRUST	Trust
VALUE	Value perception
WOMB	Word of mouth behaviour
WOMI	Word of mouth intention
WTP	Willingness to pay
COALITION	Coalition program
TIER	Tiered program
SIZE	Firm size
DURABLE	Durable vs. non-durable
SERVICES	Services vs. goods
HEDONIC	Hedonic vs. utilitarian purchase
HHI	Market concentration
POWER	Power distance
IND	Individualism

MAS	Masculinity
UNCERTAIN	Uncertainty avoidance
LONGTERM	Long-term orientation
GDP	GDP per capita
CCI	Consumer confidence index
CPI	Consumer price index
DATA	Objective data source vs. other data sources
JRANK	Journal ranking
STUDENT	Student vs. non-student sample
PUBLISH	Published vs. unpublished studies
SELF	Controlled vs. non-controlled for self-selection effect

Appendix 2 R code used for data analysis

```
#install packages used for analysis and graphing
install.packages(lmerTest)
install.packages("ggplot2")
install.packages("sjPlot")
install.packages("sjmisc")
install.packages("broom")

#deploy packages
library(broom)
library(sjPlot)
library(sjmisc)
library(ggplot2)
library(lmerTest)

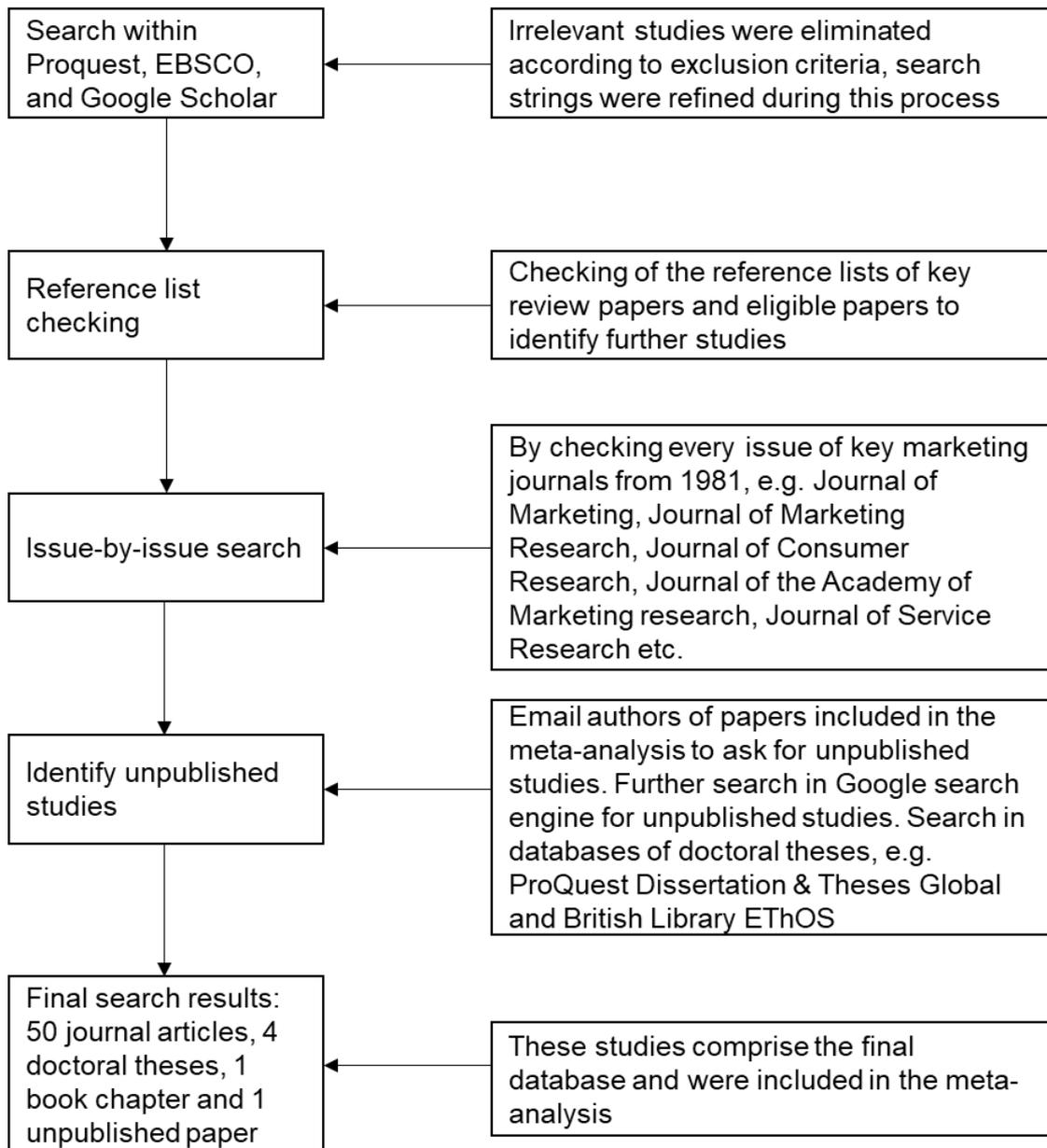
#fit intercept-only model
base<-lmer(Zr~1+(1|STUDYID),data = meta, REML = FALSE)

#fit Model 1
M1 <-
lmer(Zr~1+SOW+RI+RB+SALESPROFIT+SAT+COMMIT+TRUST+VALUE+BRANDATT
ITUDE+SERVQUAL+ID+WOMI+WOMB+WTP+SWITCHING+COOP+(1|STUDYID)+
COALITION+TIER+SIZE+DURABLE+SERVICES+HEDONIC+HHI+POWER+IND+MAS+U
NCERTAIN+LONGTERM+GDP+CCI+CPI+DATA+JRank+STUDENT+PUBLISH+SELF,
data = meta, REML = FALSE)

#fit Model 2
M2 <-
lmer(Zr~1+SOW+RI+RB+SALESPROFIT+SAT+COMMIT+TRUST+VALUE+BRANDATT
ITUDE+SERVQUAL+ID+WOMI+WOMB+WTP+SWITCHING+COOP+(1|STUDYID)+
COALITION+TIER+SIZE+DURABLE+SERVICES+HEDONIC+HHI+POWER+IND+MAS+
UNCERTAIN+LONGTERM+GDP+CCI+CPI+DATA+JRank+STUDENT+PUBLISH+SELF+
POWER*HEDONIC+MAS*HEDONIC+UNCERTAIN*SERVICES+LONGTERM*SERVICES,
data = metadata, REML = FALSE)

#plot the interaction effects
plot <- plot_model(M2, type = "int", axis.lim = c(-1, 1))
```

Appendix 3 Literature search process and outcome



Appendix 4 List of Studies Included in the Meta-analysis

No.	Authors (year)	Title	Setting	Data	Publication	Issue	Pages
1	Acatrinei and Puiu (2012)	The Loyalty Card: Issues in Evaluating Loyalty Program Effectiveness	Retail	Survey	<i>International Journal of Economic Practices and Theories</i>	Vol. 2, No. 3	153-163
2	Acosta (2015)	Essays on the Empirical Analysis of Grocery Retailing and Consumer Shopping Behavior	Retail (grocery)	Scanner data	Doctoral Dissertation	-	-
3	Azeem et al. (2018)	Food Shoppers' Share of Wallet: A Small City Case in a Changing Competitive Environment	Retail (grocery)	Mixed	<i>Journal of Retailing and Consumer Services</i>	Vol. 43, July	119-130
4	Bolton et al. (2000)	Implications of Loyalty Program Membership and Service Experiences for Customer Retention and Value	Financial services	Consumer panel	<i>Journal of the Academy of Marketing Science</i>	Vol. 28, No. 1	95-108
5	Browne et al. (1995)	Frequent-Flier Programs: The Australian Experience	Airline	Survey	<i>Transportation Journal</i>	Vol. 35, No. 2	35-44
6	Carbó-Valverde et al. (2011)	How Effective are Rewards Programs in Promoting Payment Card Usage?	Financial services	Survey	<i>Journal of Banking & Finance</i>	Vol. 35, Iss. 12	3275-3291
7	Cortiñas et al. (2008)	The Use of Loyalty-Cards Databases Differences in Regular Price and Discount Sensitivity in the Brand Choice Decision Between Card and Non-Card Holders	Retail (hypermarket)	Company database	<i>Journal of Retailing and Consumer Services</i>	Vol. 15, Iss. 1	52-62

8	Daams et al. (2008)	The Impact of Loyalty Programs in a B-To-B Context: Results of An Experimental Design	Office products	Mixed	<i>Journal of Targeting, Measurement and Analysis for Marketing</i>	Vol. 16, Iss. 4	274–284
9	Dholakia (2006)	How Customer Self-Determination Influences Relational Marketing Outcomes: Evidence from Longitudinal Field Studies	Financial services	Field experiment	<i>Journal of Marketing Research</i>	Vol. 43, Iss. 1	109-120
10	Douglas and Mclachlan (2016)	Airline Loyalty of Frequent Flyers: A Survey of Members and Non-Members of Loyalty Programmes	Airline	Survey	<i>African Journal of Hospitality, Tourism and Leisure</i>	Vol. 5, Iss. 1	1-14
11	du Toit and Cant (2012)	Loyalty Programme Roulette: The Loyal, the Committed, and the Polygamous	Retail (apparel)	Survey	<i>International Business & Economics Research Journal</i>	Vol. 11, No. 2	1421-1432
12	Gómez et al. (2006)	The Role of Loyalty Programs in Behavioral and Affective Loyalty	Retail (supermarket)	Survey	<i>Journal of Consumer Marketing</i>	Vol. 23, Iss. 7	387 - 396
13	Gustafsson et al. (2004)	Customer Clubs in a Relationship Perspective: A Telecom Case	Telecom	Survey	<i>Managing Service Quality: An International Journal</i>	Vol. 14, Iss. 2/3	157-168
14	Evanschitzky and Wunderlich (2006)	An Examination of Moderator Effects in the Four-Stage Loyalty Model	Retail	Interview	<i>Journal of Service Research</i>	Vol. 8, No. 4	330-345

15	Hoffmann (2013)	Loyalty Schemes in Retailing: A Comparison of Stand-Alone and Multi-Partner Programs	Fuel	Survey	Book	-	-
16	Irshad et al. (2014)	An Analysis of the Difference in the Affective Loyalty of Members and Non Members of A Loyalty Program: Case Study of Shoes and Handbag Retail Outlets of Pakistan	Retail (apparel)	Survey	<i>Elixir Marketing Mgmt</i>	Vol. 66	20755-20758
17	Kim (2010)	The Importance of Customer Satisfaction and Delight on Loyalty in the Tourism and Hospitality Industry	Tourism & hospitality	Survey	Doctoral Dissertation	-	-
18	Kolod (2015)	Customer Reward Programmes and Customer Loyalty in a German Agribusiness	Agriculture	Mixed	Doctoral Dissertation	-	-
19	Lacey (2007)	Relationship Drivers of Customer Commitment	Retail (department store) and restaurant	Survey	<i>Journal of Marketing Theory and Practice</i>	Vol. 15, No. 4	315-333
20	Lacey (2009)	Limited Influence of Loyalty Program Membership on Relational Outcomes	Retail (department store)	Survey	<i>Journal of Consumer Marketing</i>	Vol. 26, Iss. 6	392 - 402
21	Lacey (2012)	How Customer Voice Contributes to Stronger Service Provider Relationships	Retail (department store) and restaurant	Survey	<i>Journal of Services Marketing</i>	Vol. 26 Iss. 2	137 - 144

22	Lacey et al. (2007)	Differential Effects of Preferential Treatment Levels on Relational Outcomes	Retail (department store)	Survey	<i>Journal of Service Research</i>	Vol. 9, No. 3	241-256
23	Lee et al. (2014)	Service Quality, Relationship Outcomes, and Membership Types in the Hotel Industry: A Survey in Korea	Tourism & Hospitality	Survey	<i>Asia Pacific Journal of Tourism Research</i>	Vol. 19, No. 3	300-324
24	Lee et al. (2006)	The Impact of Co-Branding on Post-Purchase Behaviors in Family Restaurants	Restaurant	Survey	<i>Hospitality Management</i>	Vol. 25, Iss. 2	245-261
25	Leenheer et al. (2007)	Do Loyalty Programs Really Enhance Behavioral Loyalty? An Empirical Analysis Accounting for Self-Selecting Members	Retail (supermarket)	Consumer panel	<i>International Journal of Research in Marketing</i>	Vol. 24, Iss. 1	31-47
26	Lin and Bennett (2014)	Examining Retail Customer Experience and the Moderation Effect of Loyalty Programs	Retail (supermarket & department store)	Interview	<i>International Journal of Retail & Distribution Management</i>	Vol. 42, Iss. 10	929 - 947
27	McCleary and Weaver (1992)	Do Business Travelers Who Belong to Frequent Guest Programs Differ from Those Who Don't Belong?	Tourism & Hospitality	Survey	<i>Journal of Hospitality & Tourism Research</i>	Vol. 15, Iss. 3	51-64
28	Meyer-Waarden (2008)	The Influence of Loyalty Program Membership on Customer Purchase Behavior	Retail (supermarket)	Consumer panel	<i>European Journal of Marketing</i>	Vol. 42, Iss. 1/2	87 - 114
29	Monroe et al. (2018)	Sales Impact of Servicescape's Emotional and Rational Stimuli: A Survey Study	Household items	Survey	EERI Research Paper Series	No. 2/2018	-

30	Morrisson and Huppertz (2010)	External Equity, Loyalty Program Membership, and Service Recovery	Telecom	Experiment	<i>Journal of Services Marketing</i>	Vol. 24, Iss. 3	244 - 254
31	Murthi et al. (2011)	What Price Loyalty? A Fresh Look at Loyalty Programs in the Credit Card Industry	Financial services	Company database	<i>Journal of Financial Services Marketing</i>	Vol. 16, 1	5-13
32	Netemeyer et al. (2012)	The Impact of a New Retail Brand in-Store Boutique and Its Perceived Fit with the Parent Retail Brand on Store Performance and Customer Spending	Retail (apparel)	Consumer panel	<i>Journal of Retailing</i>	Vol. 88, Iss. 4,	462-475
33	Ngobo (2004)	Drivers of Customers' Cross-Buying Intentions	Financial services	Survey	<i>European Journal of Marketing</i>	Vol. 38, Iss. 9/10	1129-1157
34	Noordhoff et al. (2004)	The Effect of Customer Card Programs: A Comparative Study in Singapore and the Netherlands	Retail (grocery)	Survey	<i>International Journal of Service Industry Management</i>	Vol. 15, Iss. 4	351-364
35	Pradhan (2010)	Impact of Customer Loyalty Programs on Customer Satisfaction and Loyalty	Retail (apparel)	Survey	<i>Revista Română de Marketing</i>	Vol. 5, Iss. 4	6-29
36	Proussaloglou and Koppelman (1995)	Air Carrier Demand: An Analysis of Market Share Determinants	Airline	Survey	<i>Transportation</i>	Vol. 22, Iss. 4	371–388
37	Reczek et al. (2014)	Lucky Loyalty the Effect of Consumer Effort on Predictions of Randomly Determined Marketing Outcomes	Tourism & Hospitality	Experiment	<i>Journal of Consumer Research</i>	Vol. 41, Iss. 4	1065–1077

38	Rese et al. (2013)	Loyalty Program Types as Drivers of Customer Retention: A Comparison of Stand-Alone Programs and Multi-Vendor Loyalty Programs Through the Lens of Transaction Cost Economics	Mixed	Survey	<i>The International Review of Retail, Distribution and Consumer Research</i>	Vol. 23, No. 3	305-323
39	Rivers et al. (1991)	Frequent-Stayer Programs: The Demographic, Behavioral, and Attitudinal Characteristics of Hotel Steady Sleepers	Airline	Survey	<i>Journal of Travel Research</i>	Vol 30, Iss. 2	41-45
40	Roehm et al. (2002)	Designing Loyalty-Building Programs for Packaged Goods Brands	Drinks	Experiment	<i>Journal of Marketing Research</i>	Vol. 39 Iss. 2	202-213
41	Rufer (2018)	Loyalty Program Effectiveness: An Examination of Mainstream and Niche Sport Fan-Team Relationships	Entertainment	Survey	Doctoral Dissertation	-	-
42	Seiders et al. (2005)	Do Satisfied Customers Buy More? Examining Moderating Influences in a Retailing Context	Retail (apparel)	Mixed	<i>Journal of Marketing</i>	Vol. 69 (October 2005)	26-43
43	Shi et al. (2014)	Linking Service Quality, Customer Satisfaction and Loyalty in Casinos, does Membership Matter?	Entertainment	Survey	<i>International Journal of Hospitality Management</i>	Vol. 40, July 2014	81-91
44	Smith et al. (2003)	Retail Loyalty Schemes: Results from a Consumer Diary Study	Retail	Survey	<i>Journal of Retailing and Consumer Services</i>	Vol. 10, Iss. 2	109-119

45	Söderlund (2019)	Can the Label 'Member' in A Loyalty Program Context Boost Customer Satisfaction	Retail (sport)	Experiment	<i>The International Review of Retail, Distribution and Consumer Research</i>	Vol. 29, Iss. 3	340-357
46	Söderlund and Colliander (2015)	Loyalty Program Rewards and Their Impact on Perceived Justice, Customer Satisfaction, and Patronize Intentions	Retail (electronics)	Experiment	<i>Journal of Retailing and Consumer Services</i>	Vol. 25, July	47-57
47	Stauss et al. (2001)	Retention Effects of a Customer Club	Automobile	Survey	<i>International Journal of Service Industry Management</i>	Vol. 12, Iss. 1	7-19
48	Steinhoff and Palmatier (2016)	Understanding Loyalty Program Effectiveness: Managing Target and Bystander Effects	Restaurant	Experiment	<i>Journal of the Academy of Marketing Science</i>	Vol. 44, No. 1	88–107
49	Swanson and Davis (2006)	Arts Patronage: A Social Identity Perspective	Entertainment	Survey	<i>Journal of Marketing Theory and Practice</i>	Vol. 14 No. 2	125-138
50	Tanford et al. (2011)	The Influence of Reward Program Membership and Commitment on Hotel Loyalty	Hospitality	Survey	<i>Journal of Hospitality & Tourism Research</i>	Vol. 35, No. 3	279-307
51	Toh and Hu (1988)	Frequent-Flier Programs: Passenger Attributes and Attitudes	Airline	Survey	<i>Transportation Journal</i>	Vol. 28, No. 2	11-22
52	van Heerde and Bijmolt (2005)	Decomposing the Promotional Revenue Bump for Loyalty Program Members Versus Nonmembers	Retail (apparel)	Company database	<i>Journal of Marketing Research</i>	Vol. 42 Iss. 4	443-457

53	Verhoef (2003)	Understanding the Effect of Customer Relationship Management Efforts on Customer Retention and Customer Share Development	Financial services	Mixed	<i>Journal of Marketing</i>	Vol. 67, (October 2003)	30-45
54	Wu and Wang (2012)	Satisfaction and Zone of Tolerance: The Moderating Roles of Elaboration and Loyalty Programs	Airline	Survey	<i>Managing Service Quality: An International Journal</i>	Vol. 22, Iss. 1	38 - 57
55	Zeng and Prentice (2014)	A Patron, a Referral and Why in Macau Casinos – The Case of Mainland Chinese Gamblers	Entertainment	Survey	<i>International Journal of Hospitality Management</i>	Vol. 36, January 2014	167-175
56	Zhang and Breugelmans (2012)	The Impact of An Item-Based Loyalty Program on Consumer Purchase Behavior	Retail (grocery)	Company database	<i>Journal of Marketing Research</i>	Vol. 49, Iss. 1	50-65

Appendix 5 Country level variables - descriptive statistics

Country (Region)	Power distance	Individualism vs. collectivism	Masculinity vs. femininity	Uncertainty avoidance	Long-term orientation	Year of data collection (approximated) ^a	GDP per capita ('000)	CCI	CPI
Australia	36	90	61	51	21	1993	17.681	99.401	56.582
						2015	19.243	99.591	100.000
China	80	20	66	30	87	2011	5.634	97.834	91.848
France	68	71	43	86	63	2001	22.527	100.322	81.236
						2006	36.444	100.278	89.300
						2007	41.601	100.864	90.655
						98-01	23.723	100.587	79.492
Germany	35	67	66	65	83	1998	27.341	100.261	78.569
						2003	30.360	98.219	83.776
						2010	41.786	100.504	93.545
						12-13	45.298	100.306	97.863
Italy	50	76	70	75	61	2017	32.155	100.769	101.100
Korea	60	18	39	85	100	2003	24.080	98.855	73.695
						2011	24.080	100.048	94.717
Pakistan	55	14	50	70	50	2011	1.165	100.021	83.833
Romania	90	30	42	90	52	2007	8.214	99.813	81.965
						2009	8.220	99.784	82.289
Singapore	74	20	48	8	72	2001	21.577	99.813	81.965
South Africa	49	65	63	49	34	2009	5.914	100.333	73.767
						2013	6.829	99.442	90.154
Spain	57	51	42	86	48	2005	26.511	100.210	83.525
						2008	26.511	97.444	92.493
Sweden	31	71	5	29	53	2000	29.283	102.186	83.234
						2012	29.283	99.459	100.271

						2016	51.618	99.658	100.984
Taiwan	58	17	45	69	93	2009	3.838	97.309	84.337
The Netherlands	38	80	14	53	67	2000	25.921	101.832	75.055
						2001	26.584	100.301	78.174
						2005	41.577	100.045	84.884
						09-10	51.732	99.556	91.013
UK	35	89	66	35	51	2000	27.982	100.804	73.400
						2003	34.174	100.475	76.700
US	40	91	62	46	26	1987	20.101	100.470	75.891
						1989	22.922	100.688	52.303
						1999	34.514	102.230	70.300
						2002	38.166	100.308	75.891
						2003	39.677	100.153	77.614
						2004	41.922	100.956	79.692
						2008	48.401	97.319	90.838
						2009	47.002	97.629	90.515
						2011	49.791	97.764	94.904
						2013	53.107	99.121	98.287
						2017	59.928	101.170	103.419
						00-03	37.892	100.793	75.216
						05 and 07	46.269	100.058	84.976
Europe ^b	48	67	40	63	57	2005	31.965	99.659	84.800
						96-97	22.860	99.475	71.950

^a Approximated by year of publication minus 3 years unless stated in the original article. If data was collected from multiple years, it was aggregated.

^b Culture dimension scores were aggregated from all other studies in the meta-analysis. Economic factors used the aggregated data of all countries in the European Union.

Appendix 6 Correlation matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1. Zr																				
2. Coalition programs	.10																			
3. Tiered programs	-.12	-.10																		
4. Firm size	.03	.14	.17																	
5. Durability	.00	.03	-.19	.14																
6. Services vs. goods	.04	-.13	.41	-.03	-.33															
7. Hedonic vs. utilitarian	.02	-.17	.27	.05	.25	.10														
8. HHI	.12	.02	-.16	-.17	-.01	-.09	-.30													
9. Power distance	.02	.17	.26	-.18	-.28	-.07	.00	.02												
10. Individualism	-.14	-.14	-.26	.10	.07	-.04	.02	-.33	-.68											
11. Masculinity	-.09	-.09	.24	.18	.24	-.01	.29	-.51	-.09	.14										
12. Uncertainty avoidance	.11	.35	-.33	-.15	.01	-.34	-.39	.21	.39	-.18	-.25									
13. Long-term orientation	.09	.28	.08	-.08	.03	-.17	-.21	.26	.46	-.77	-.22	.35								
14. GDP per capita (,000)	-.05	-.06	-.24	.12	.22	-.04	.24	-.22	-.66	.73	.18	-.18	-.52							
15. CCI	.02	.12	-.28	-.19	-.52	.00	-.57	.24	-.07	.17	-.44	.19	-.03	-.08						
16. CPI	-.01	-.05	.16	.07	.19	-.13	.47	.07	.03	-.18	.14	-.13	.15	.32	-.45					
17. Self-selection effect	-.10	-.08	-.09	-.07	-.11	-.08	-.10	.02	-.12	.15	-.09	-.11	-.14	.21	.16	.09				
18. Objective data	-.15	.16	.06	-.01	-.34	-.10	-.34	.00	.15	.09	-.49	.30	.09	-.04	.36	-.20	-.10			
19. Student sample	.00	-.04	-.05	-.23	.01	.02	.03	.18	-.01	.02	-.21	.01	.03	.14	.03	.13	.50	-.01		
20. Journal quality	.14	.06	-.05	-.12	-.06	.08	.10	.32	-.15	-.03	-.05	-.12	-.12	.17	.07	.22	-.21	-.06	.08	
21. Manuscript status	-.03	-.06	.11	-.06	.16	-.06	-.18	-.03	.18	-.11	-.19	.00	-.01	-.34	.04	-.36	.09	.09	.04	-.49

Appendix 7 Full HLM results

	Model 1	Model 2
	B	B
Intercept	.365	.422
Level 1 variables		
Brand attitude	-.093	-.119
Commitment	-.052	-.084
Cooperation	-.158 [†]	-.195 ^{††}
Customer identification	-.044	-.073
Repurchase behaviour	.087	.067
Repurchase intention	.027	-.004
Sales/profit	.048	.020
Satisfaction	-.116 [†]	-.124 [†]
Service quality	-.169 ^{††}	-.222 ^{†††}
Share-of-wallet	.157 ^{††}	.135 [†]
Switching costs	-.140	-.169 [†]
Trust	-.073	-.118
Value perception	-.106	-.139 [†]
Willingness to pay	-.095	-.138
WOM behaviour	-.347 ^{†††}	-.384 ^{†††}
WOM intention	-.108	-.137
Level 2 variables		
Firm characteristics		
Coalition program	-.024	-.008
Tiered program	-.125 [*]	-.166 [*]
Size of the business	.111 ^{***}	.123 ^{***}
Industry characteristics		
Durability	-.097 [*]	-.051
Services vs. goods	.065 [*]	-.033
Hedonic vs. utilitarian purchase	.086 [*]	-.636 [*]
Market concentration (HHI)	-.005	-.185
Country characteristics		
Power distance	-.004 [*]	-.006 ^{**}
Individualism vs. collectivism	-.004 [*]	-.006 ^{**}
Masculinity vs. femininity	-.002	-.006 ^{***}
Uncertainty avoidance	.002 ^{**}	.002
Long-term vs. short-term orientation	.001	.001
Economic factors		
GDP per capita	.004 [*]	.005 [*]
CCI	-.001	.004
CPI	-.001	-.001
Method moderators		
Self-selection effect	-.124 [†]	-.161 ^{††}
Objective data	-.223 ^{†††}	-.226 ^{†††}
Student sample	.065	.081
Journal quality	.025 [†]	.029 ^{††}
Manuscript status	.136 [†]	.112
Interaction effects		

Power distance × Hedonic purchase	.015***
Masculinity × Hedonic purchase	.001
Uncertainty avoidance × Services	.006**
Long-term orientation × Services	-.006**

Note: Intercept = Customer loyalty

*** significant at .001 (one-sided)

** significant at .01 level (one-sided)

* significant at .05 level (one-sided)

††† significant at .01 level (two-sided)

†† significant at .05 level (two-sided)

† significant at .1 level (two-sided)