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Toward a Better Understanding of Customer Value: Empirical Studies from a Service-Dominant Logic Perspective

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PhD-Dominant Logic

A summary of feelings and thoughts collected during the last few years is provided in the next 10 quotes. Consider them as foundational premises (FPs) of a PhD-dominant logic.

FP1 Work hard, stay positive, and get up early. It's the best part of the day. (George Allen, Sr.)

FP2 In order to succeed, we must first believe that we can. (Nikos Kazantzakis)

FP3 Surround yourself with people who take their work seriously, but not themselves, those who work hard and play hard. (Colin Powell)

FP4 There is nothing so practical as a good theory. (Kurt Lewin)

FP5 The skill of writing is to create a context in which other people can think. (Edwin Schlossberg)

FP6 Always and never are two words you should always remember never to use. (Wendell Johnson)

FP7 Resilience to rejection combined with persistence following failure often leads to success. (Andrew F. Hayes)

FP8 What doesn’t kill you makes you stronger. (Friedrich Nietzsche)

FP9 There is no substitute for hard work. (Thomas A. Edison)

FP10 Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning. (Albert Einstein)

Summary

Customer value, which can be defined as the customer's trade-off between the perceived benefits and costs associated with a particular product or service, plays a key role at the heart of all marketing activities and thus deserves the attention of every marketing researcher. However, despite numerous studies about customer value and various efforts by an impressive number of researchers in the search for a precise understanding of customer value, this focal marketing construct raises some unsolved difficulties. This is called 'the challenge of value research', meaning that the researcher, on the one hand, focuses on a concept that is central to the marketing domain but, on the other hand, has to face the conceptual and methodological difficulties related to this focal construct.

With this challenge in mind, this doctoral research aims to contribute to the marketing literature as well as practice by providing a more comprehensive understanding of customer value and value creation.

Chapter 1 provides a theoretical background regarding customer value. First, the importance of customer value for the marketing literature is discussed. Next, the focal construct is described based on existing definitions of customer value. Additionally, the nature and scope of customer value are explicated from a service-dominant logic perspective. Finally, an outline of the remainder of this dissertation is presented together with an overview of how the individual research projects described in this dissertation are intertwined.

In **Chapter 2**, four commonly used methods for measuring customer value are compared. In order to provide a better picture of the performance of these measurement methods, the comparison occurred with regard to two quantitative (psychometric properties and predictive ability) and two subjective topics (practicality and actionability). Because the results of this comparison can depend on the setting, these methods were compared across four different settings.

Chapter 3 investigates the customer's resource integrating role in the value creation process. The role of the customer in the value creation process is a very significant one, since he is the one who creates value by using the products or services and integrating them with other resources (e.g., time and effort). In case of co-production (e.g., do-it-yourself, online banking, self-check-in, self-scanning), the customer's resource integrating role enlarges and his responsibility increases. In this chapter, the Psychological Capital (PsyCap) of the customer is investigated as a potential motivating factor which can be actively managed to encourage co-production. Chapter 3 describes three empirical studies that were conducted to investigate the role of PsyCap in a co-production setting. Study 1 investigates the relationship between a customer's PsyCap and intention to co-produce. Study 2 examines the role of PsyCap in a larger conceptual model based on Social Cognitive Theory to increase our understanding of the various factors that influence a customer's intention to co-produce. Finally, Study 3 focuses on gaining insight into several factors that lead to an improvement in the level of customers' PsyCap in a co-production setting, which is in line with the malleable, state-like nature of PsyCap.

Chapter 4 starts from the premise that value propositions should communicate the potential or expected value of a product or service *as well as* the customer's role as a resource integrator. The effects of explicitly stating the customer's resource integrating role in the value proposition were empirically examined. The advertised message was used as a communication device for the value proposition. Based on existing advertising theories, Chapter 4 presents a nomological web linking the inclusion of the customer's resource integrating role in the advertised message with key outcomes. This nomological web was tested in two different settings.

Finally, **Chapter 5** presents a summary of the main findings of this dissertation's empirical studies and provides some opportunities for further research.

Samenvatting

Klantwaarde is de afweging die de klant maakt tussen de waargenomen voordelen en kosten gerelateerd aan een product of dienst. Dit construct speelt een sleutelrol in marketing en verdient dus de aandacht van elke marketingonderzoeker. Ondanks een groot aantal studies over klantwaarde en pogingen van een groot aantal onderzoekers om klantwaarde beter te begrijpen, brengt het construct nog veel onopgeloste moeilijkheden met zich mee. Dit is wat men in de marketingliteratuur 'de uitdaging van waarde-onderzoek' noemt. Dit betekent dat de onderzoeker aan de ene kant te maken heeft met een concept dat centraal is voor het marketingdomein, maar aan de andere kant geconfronteerd wordt met conceptuele en methodologische moeilijkheden.

In dit doctoraatsonderzoek gaan we de uitdaging aan en trachten we bij te dragen aan de marketingliteratuur en – praktijk door het verschaffen van een beter begrip van klantwaarde en waardecreatie.

Hoofdstuk 1 geeft een theoretische achtergrond over klantwaarde. Eerst wordt het belang van klantwaarde voor de marketingliteratuur weergegeven. Vervolgens wordt het construct beschreven op basis van bestaande definities van klantwaarde en wordt klantwaarde uitgelegd vanuit service-dominant logic. Ten slotte wordt een overzicht gegeven van de opbouw van deze doctoraatsthesis en wordt besproken hoe de verschillende projecten die in deze thesis aan bod komen aan elkaar gerelateerd zijn.

In **Hoofdstuk 2** worden vier veelgebruikte methoden om klantwaarde te meten met elkaar vergeleken. Om een volledigere beeld te geven van de prestaties van elk van deze methoden, worden de methoden vergeleken op basis van twee kwantitatieve (psychometrische eigenschappen en voorspelkracht) en twee subjectieve (gebruiksvriendelijkheid en doelgerichtheid) criteria. Omdat de resultaten contextafhankelijk kunnen zijn, werd de vergelijking bovendien uitgevoerd in vier verschillende settings.

Hoofdstuk 3 bestudeert de rol van de klant als een creator van waarde. De klant speelt namelijk een zeer belangrijke rol in het waardecreatieproces omdat hij degene is die de producten en diensten gebruikt en deze integreert met andere middelen (zoals tijd en moeite). In het geval van co-productie (bv. doe-het-zelven, online bankieren, zelf inchecken, zelf-scanning) vergroot de rol van de klant en stijgt zijn verantwoordelijkheid. In dit hoofdstuk wordt het Psychologisch Kapitaal van de klant onderzocht als een mogelijke manier om klanten aan te moedigen om te co-produceren. In Hoofdstuk 3 worden drie empirische studies beschreven die werden uitgevoerd om de rol van Psychologisch Kapitaal in een co-productie setting te onderzoeken. In Studie 1 wordt de relatie tussen Psychologisch Kapitaal en intentie om te co-produceren onderzocht. Studie 2 integreert Psychologisch Kapitaal in een groter conceptueel kader gebaseerd op Social Cognitive Theory. Op die manier kunnen we de verschillende factoren die de intentie om te co-produceren beïnvloeden beter begrijpen. Studie 3 focust op het verbeteren van het Psychologisch Kapitaal in een co-productie situatie.

Hoofdstuk 4 start van het idee dat een waardepropositie niet enkel de verwachte waarde moet communiceren maar ook de rol van de klant bij het creëren van deze waarde. In dit hoofdstuk wordt onderzocht wat het effect is van het expliciet vermelden van de rol van de klant in de waardepropositie. De geadverteerde boodschap werd gebruikt als een communicatiemiddel voor de waardepropositie. Op basis van bestaande advertising theorieën wordt er een nomologisch web gepresenteerd dat het effect van het expliciet vermelden van de rol van de klant in de geadverteerde boodschap op belangrijke uitkomsten zoals attitude ten opzichte van het merk en koopintentie weergeeft. Dit nomologisch web werd getest in twee verschillende settings.

Ten slotte presenteert **Hoofdstuk 5** een overzicht van de belangrijkste resultaten van dit doctoraatsonderzoek. Bovendien worden er enkele mogelijkheden voor verder onderzoek besproken.

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Chapter 1

Customer value: A theoretical understanding and service-dominant logic perspective

1.1 Introduction

"What first attracts the attention of any marketing researcher interested in the concept of customer value is its increasingly unanimous recognition as an imperative focus for both practitioners and researchers" (Gallarza, Gil-Saura, & Holbrook 2011, p. 179).

Indeed, customer value plays a key role at the heart of all marketing activities and, as a result, it deserves the attention of every marketing researcher (Holbrook 1999). However, despite numerous studies about customer value and various efforts by an impressive number of researchers in the search for a precise understanding of customer value, this focal marketing construct raises some unsolved difficulties. This is what Gallarza et al. (2011, p. 179) labeled 'the challenge of value research', meaning that the researcher, on the one hand, focuses on a concept that is central to the marketing domain but, on the other hand, has to face the conceptual and methodological difficulties related to this focal construct.

With this challenge in mind, this doctoral research aims to contribute to the marketing literature by providing a more comprehensive understanding of customer value and value creation. Overall, the research described in this dissertation responds to the call for additional research on customer value to further refine and develop the construct (e.g., Holbrook 1999; Sánchez-Fernández & Iniesta-Bonillo 2007; Sánchez-Fernández, Iniesta-Bonillo, & Holbrook 2009; Smith & Colgate 2007; Woodruff 1997; Woodruff & Flint 2006). Furthermore, each of the studies described in this dissertation aims to contribute to marketing practice as well since "making customer value strategies work begins with an actionable understanding of the concept itself" (Woodruff 1997, p. 141).

This chapter provides a theoretical background regarding customer value. First, the importance of customer value for the marketing literature is discussed. Next, the focal construct is described based on existing definitions of customer value. Additionally, the nature and scope of customer value are explicated from a service-dominant logic perspective. Finally, an outline of the remainder of this dissertation is presented together with an overview of how the individual research projects described in this dissertation are intertwined.

1.2 Importance of customer value

This chapter starts with the identification of various potential sources of importance that explain the crucial role of customer value in the marketing domain.

First, customer value has important implications with regard to the understanding and nature of the marketing discipline itself. The most recent definition of marketing adopted by the American Marketing Association strongly emphasizes the role of value (AMA 2007, emphasis added): "Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have *value* for customers, clients, partners, and society at large". Hence, customer value provides the roots of marketing as a discipline with respect to the exchange relationship itself and the nature of products and services (Gallarza et al. 2011). Also in the various paradigm shifts in marketing, customer value is included in some way or another. In the latest paradigm shift, more specifically, the shift from a so-called goods-dominant (G-D) to a service-dominant (S-D) logic (Vargo & Lusch 2004), customer value is even "the most central concept" (Vargo & Lusch 2012 p. 1).

Customer value is an important antecedent of satisfaction and loyalty (e.g., Bolton & Drew 1991; Cronin, Brady, & Hult 2000; Lai, Griffin, & Babin 2009; Zeithaml, Berry, & Parasuraman 1996). In turn, several studies (e.g., Anderson, Fornell, & Lehmann 1994; Hallowell 1996; Kamakura et al. 2002; Loveman 1998) have indicated that customer satisfaction and customer loyalty are prime determinants of the long-term profitability of the firm. In

line with the basic notion of Return on Marketing (Rust, Lemon, & Zeithaml 2004), this makes customer value particularly relevant in today's turbulent business environment that is characterized by intense competition, mature slow-growth market, globalization, and advanced technology.

As evidenced by the academic work cited in the previous paragraph as well as by the most recent marketing definition put forward by the AMA, customer value connects the customer and the organization in a potentially mutually beneficial way. Or as Grönroos and Ravald (2011 p. 13) put it: "value for the supplier requires that value for the customer is created as well". This makes customer value an important criterion in evaluating and justifying strategic alternatives. A notion shared by Slater (1997 p. 166) who states that "…. the creation of customer value must be the reason for the firm's existence and certainly for its success."

1.3 Defining customer value

In order to fully understand the customer value concept, this chapter now examines how the focal construct has been defined in prior research (MacKenzie, Podsakoff, & Podsakoff 2011). Following Sartori's (1984) recommendation, a representative set of definitions is collected and, subsequently, the most important characteristics of the construct are extracted. Table 1 provides an overview of definitions of customer value. This summary is not intended to be exhaustive but to highlight some key characteristics of customer value.

Table 1 A chronological review of definitions of customer value

Author(s)	Definition
Porter (1985, p. 3)	Value is what buyers are willing to pay, and superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset higher prices.
Monroe and Chapman (1987, p. 193)	Perceptions of value represent a trade-off between the quality or benefits they perceive in the product relative to the sacrifice they perceive by paying the price.
Zeithaml (1988, p. 4)	Perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given.
Day (1990, p. 142)	Perceived value = customer's perceived benefits (additions to gross profit) – customer's life cycle cost of product or service
Lichtenstein, Netemeyer and Burton (1990, p. 54)	We can define value as the ratio of quality to price.
Heskett, Sasser and Hart (1990, p. 2)	The value of a service to a customer = service quality (both the results realized and the process by which they were achieved) divided by price and other customer costs of acquiring the service
Schonberger (1990, p. 85)	How much of any of the [above] dimensions of quality we get for the cost or price.
Dodds et al. (1991, p. 316)	Perceived value [is] conceptualized as a cognitive trade-off between perceived quality and sacrifice.
Lovelock (1991, p. 237)	The sum of all the perceived benefits (gross value) minus the sum of all the perceived costs.
Anderson, Jain and Chintagunta (1993, p. 5)	We define value as the perceived worth in monetary units of the set of economic, technical, service and social benefits received by the customer firm in exchange for the price paid for a product offering, taking into consideration the available suppliers' offerings and prices.
Mazumdar (1993, p. 28)	Perceived value [which] is defined as the degree to which a potential adopter perceived that the benefits of a new product exceed the sacrifices associated with the adoption and consumption.
Gale (1994, p. xiv)	Customer value is market-perceived quality adjusted for the relative price of your product. Market-perceived quality is the customer's opinion of your products (or services) compared to those of your competitors.
Hunt and Morgan (1995, p. 6)	Value refers to the sum total of all benefits that consumers perceive they will received if they accept the market offering.
Lai (1995, p. 284)	The meaning of "customer value" is a level of return in the product benefits for certain amount of customer's money (i.e., the price) in a purchasing exchange (e.g., to give the buyer good value at the right price).
Fornell, Johnson, Anderson, Cha and Bryant (1996, p. 9)	The perceived level of product quality relative to the price paid.

Table 1 A chronological review of definitions of customer value (continued)

Author(s)	Definition
Butz and Goodstein (1996, p. 63)	By customer value we mean the emotional bond established between a customer and a producer after the customer has used a salient product or service produced by that supplier and found the product to provide an added value.
Grönroos (1997, p. 412)	Customer-perceived value can be described as core solution plus additional services divided by price and relationship costs or core value plus/minus added value.
Laitamäki and Kordupleski (1997, p. 158)	Customer value is the relationship between the degree of customer satisfaction with the products and services received and the satisfaction with the price paid.
Woodruff (1997, p. 142)	Customer value is a customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations.
Sinha and DeSarbo (1998, p. 236)	Value is quality that the consumers can afford.
Sirohi, McLaughlin and Wittink (1998, p. 228)	We define value as "what you get for what you pay"
Holbrook (1999, p. 5)	I define consumer value as an interactive relativistic preference experience.
Lapierre, Filiatrault and Chebat (1999, p. 237)	Value is the result of a ratio between perceived benefits and price, which includes the purchase price as well as the costs of acquiring, transporting, installing, and ordering the product, plus the risks of failure.
Best (2000, p. 99)	Customer Value = Perceived Benefits – Perceived costs of purchase
Lapierre (2000, p. 123)	Customer-perceived value can, therefore, be defined as the difference between the benefits and the sacrifices (e.g. the total costs, both monetary and non-monetary) perceived by customers in terms of their expectations, i.e. needs and wants.
McDougall and Levesque (2000, p. 394)	Perceived value is the results or benefits customers receive in relation to total costs (which include the price paid plus other costs associated with the purchase). In simple terms, value is the difference between perceived benefits and costs.
Oliva (2000, p. 56)	Customer value is the hypothetical price for a supplier's offering at which a particular customer would be at overall economic break-even, relative to the best alternative available to the customer for performing the same set of functions. In short the customer value of a purchase equals the price the customer would have to pay to acquire the same benefits from the next best source of supply.
Slater and Narver (2000, p. 120)	Customer value is created when the benefits to the customer associated with a product or a service exceed the offering's life-cycle costs to the customer.

Table 1 A chronological review of definitions of customer value (continued)

Author(s)	Definition
Kothandaraman and Wilson (2001, p. 380)	Value is the relationship of a firm's market offering and price weighed by the consumer against its competitor's market offering and price.
Ulaga and Chacour (2001, p. 530)	We define customer-perceived value [in industrial markets] as the trade-off between the multiple benefits and sacrifices of a supplier's offering, as perceived by key decision makers in the customer's organization, and taking into consideration the available alternative supplier's offerings in a specific-use situation.
van der Haar, Kamp and Omta (2001, p. 628)	The customer value concept assesses the value a product offers to a customer, taking all its tangible and intangible features into account.
Walter, Ritter and Gemünden (2001, p. 366)	We understand value as the perceived trade-off between multiple benefits and sacrifices gained through a customer relationship by key decision makers in the supplier's organization.
Afuah (2002, p. 172)	Consider a firm that uses its capabilities to offer products in one or more markets. Each of these products can be viewed as bundles of characteristics. The value that a customer attaches to the characteristics is a function of the extent to which they contribute to the customer's utility or pleasure.
Chen and Dubinsky (2003, p. 326)	Perceived value is defined here as a consumer's perception of the net benefits gained in exchange for the costs incurred in obtaining the desired benefits.
Woodall (2003, p. 21)	Value for the customer (VC) is any demand-side, personal perception of advantage arising out of a customer's association with an organisation's offering, and can occur as reduction in sacrifice; presence of benefit (perceived as either attributes or outcomes); the resultant of any weighed combination of sacrifice and benefit (determined and expressed either rationally or intuitively); or an aggregation, over time, of any or all of these.
Oh and Jeong (2004, p. 343)	Perceived value is understood as perceptions resulting from consumer's comparison between the quality and price of a product.
Hadjiphanis and Christou (2006, p. 4)	Perceived value may be defined as benefits customers received in relation to total costs, or as the overall assessment of what is received relative to what is given.
Huber, Herrmann and Henneberg (2007, p. 555)	The value of a product or service (as interpreted from the consumer's point of view) is the outcome of the consumer's subjective judgment of the product or service offering.
Rintamäki, Kuusela and Mitronen (2007, p. 621)	It is a subjective assessment of both positive and negative consequences of using a product or a service, the ultimate reason that people buy what they buy.
Setijono and Dahlgaard (2007, p. 46)	Customer value is the summation of benefits minus the sacrifices that result as a consequence of a customer using a product or service to meet certain needs.

Based on an examination of the value literature in general and the abovementioned definitions in particular, some key characteristics of the customer value concept can be derived.

First of all, among the numerous definitions that emerged in the literature (see Table 1), the value conceptualization of Zeithaml (1988) has provided one of the most commonly used definitions of customer value as **a trade-off between perceived benefits and costs** (e.g., Flint, Woodruff, & Gardial 2002; Rintamäki, Kuusela, & Mitronen 2007; Ruiz et al. 2008; Slater & Narver 2000). Second, customer value is **perceived by the customer**. It is the customer who defines value and not the supplier (Rintamaki et al. 2007; Woodruff 1997). Third, **customer value is personal**. Each customer perceives value based upon personal characteristics such as his/her own needs and desires, knowledge and previous experience, and financial resources (Grönroos 2011b; Holbrook 1999; Lai 1995; Woodall 2003). Fourth, customer value is **situation-specific**. The value perceived by the customer depends on the circumstances, time frame or location (Holbrook 1999; Woodruff 1997; Woodruff & Gardial 1996). For example, a warm cup of tea can be very valuable in winter, but you may prefer an ice cold lemonade in summer. Fifth, customer value implies **an interaction between a subject (the customer) and an object (e.g., a product, a service, a store)**. This latter characteristic distinguishes customer value from customer values, which are the customer's core values, purposes and goals in life and can be formally defined as "centrally held and enduring beliefs about right and wrong, good and bad that cut across situations and products or services" (Woodruff 1997, p. 141). Although customer value and customer values are distinct concepts, there is a two-way relationship between them (Holbrook 1999; Woodruff 1997). On the one hand, customer values (e.g., security, love, achievement, health) can influence perceived value. As such, customer values can be regarded as a personal characteristic that affects the customer's perception of value (Holbrook 1999) which is in line with the third customer value characteristic mentioned above. On the other hand, customer value can be a means to accomplish customer values (Woodruff & Gardial 1996). For example, a person that strives for security

and status can accomplish these goals by buying a safe and status-enhancing car.

1.4 Customer value from a service-dominant logic perspective

Because of the importance of service-dominant logic for both the marketing discipline in general and the concept of value in particular, a brief overview of this paradigm is now provided. Some of the foundational premises and concepts used by this new paradigm are fundamental for this dissertation as well.

1.4.1 Service-dominant logic

In their article *'Evolving to a new dominant logic for marketing'* Vargo and Lusch (2004) presented a new marketing paradigm, called service-dominant logic (S-D logic), challenging the traditional goods-dominant logic (G-D logic). "The essence of G-D logic is that economic exchange is fundamentally concerned with units of output (products) that are embedded with value during the manufacturing (or farming, or extraction) process" (Vargo & Lusch 2008a, p. 255). S-D logic, on the other hand, views the service and not the good as the foundation for all of exchange and defines service as "the application of specialized competences (operant resources – knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself" (Vargo & Lusch 2008c, p. 26). According to this service-centered view, service is always exchanged for service, either directly through the application of skills and knowledge or indirectly through "embedding some of that skills and knowledge in a tangible good – what S-D logic calls an appliance" (Vargo & Lusch 2008c, p. 29). In other words, goods are appliances that deliver a service. This distinction between direct and indirect service delivery does not imply that the value creation is different. The difference lies in the way in which both parties interact (Vargo & Lusch 2008c).

S-D logic is captured in ten foundational premises (FPs), as introduced in the groundbreaking paper by Vargo and Lusch in 2004 and revised by Vargo and Lusch in 2008 (2008b):

- FP1 Service is the fundamental basis of exchange.
- FP2 Indirect exchange masks the fundamental basis of exchange.
- FP3 Goods are distribution mechanisms for service provision.
- FP4 Operant resources are the fundamental source of competitive advantage.
- FP5 All economies are service economies.
- FP6 The customer is always a co-creator of **value**.
- FP7 The enterprise cannot deliver value, but only offer **value** propositions.
- FP8 A service-centered view is inherently customer-oriented and relational.
- FP9 All social and economic actors are resource integrators.
- FP10 **Value** is always uniquely and phenomenologically determined by the beneficiary.

Three of S-D logic's FPs directly address value and all other FPs deal with value in one or the other way. Thus, "value as a concept is central to S-D logic, perhaps ultimately, the most central concept" (Vargo & Lusch 2012, p. 1). Grönroos and colleagues (Grönroos 2011b; Grönroos & Ravald 2011; Grönroos & Voima 2013) agree with this fundamental role of value for the marketing domain, but they disagree with the formulation of some of the foundational premises. This disagreement is mainly caused by the simplicity of some of the premises as well as the ambiguity regarding the definition of value and value creation. As a result, Grönroos (2011b) reformulated the foundation premises related to value and value creation (see Table 2).

The focus of this dissertation is on the three foundational premises that directly involve value: 'the customer is always a co-creator of value' (FP6), 'the enterprise cannot deliver value, but only offer value propositions' (FP7), 'value is always uniquely and phenomenologically determined by the beneficiary' (FP10), and, additionally, one extra FP which states that 'all

social and economic actors are resource integrators' (FP9). The original premises as well as the reformulations by Grönroos (2011b) can be found in Table 2.

Table 2 Value-related foundational premises service-dominant logic

	Original FPs	Reformulation by Grönroos (2011b)
FP6	The customer is always a co-creator of value.	Fundamentally, the customer is always a value creator.
FP7	The enterprise cannot deliver value, but only offer value propositions.	a) Fundamentally, the firm is a facilitator of value for the customer. b) Provided that the firm can engage with its customers' value creating processes during direct interactions, it has opportunities to co-create value jointly with them as well. The firm is not restricted to offering value propositions only, but has an opportunity to directly and actively influence its customers' value creation as well.
FP9	All social and economic actors are resource integrators.	
FP10	Value is always uniquely and phenomenologically determined by the beneficiary.	a) Value is accumulating throughout the customer's value creating process. b) Value is always uniquely and both experientially and contextually perceived and determined by the customer.

1.4.2 Implications for our understanding of customer value

In order to fully understand customer value from a service-dominant logic perspective, I now briefly describe the concepts and foundational premises that are central to the value concept in general and this dissertation in particular. The concepts that are focal constructs of specific research objectives and chapters will be elaborated on in subsequent paragraphs. Appendix A gives an overview of the central concepts of this dissertation.

One of the most important, but also most discussed, FPs of S-D logic is that the customer is always a co-creator of value (FP6). This implies that the customer is always involved in the value creation process (Vargo & Lusch 2008b) and that both the customer and the firm are in some way part of this process (Grönroos 2011b). On the other hand, however, Vargo and Lusch (2004; 2008b) state that value can only be perceived and determined by the customer on the basis of value-in-use. Vargo and Lusch (2006, p. 44) state that "there is no value until an offering is used – experience and perception are essential to value determination" (in Paragraph 1.6 the notion of value-in-use is described in further detail). According to Grönroos (2011b), these two perspectives are not compatible: from a value-in-use perspective, the customer is the *only* creator of value and thus not a 'co-creator'. Furthermore, Grönroos and colleagues (Grönroos 2011b; Grönroos & Ravald 2011) state that the concept of value co-creation as stated by Vargo and Lusch (2004; 2008b) is on a level of abstraction that is "too far removed from theoretical and practical analysis" (Grönroos & Ravald 2011, p. 6). In this dissertation, the reasoning of the latter authors is followed and, hence, the statement '**the customer is always a value creator**' is used. Although the focus of this dissertation is on value-in-use, it should be noted that value can also be created before and after usage. For example, dreaming about a new car may be part of the value creation process even before the car is bought and/or used (Grönroos & Voima 2013). An elaborated description of this topic is provided in Paragraph 5.3.5 of this dissertation.

Related to the aforementioned idea of the customer as a value creator is the notion of **resource integration** (FP9). This implies that customers use the resources provided by the firm (goods or services) and integrate them with other resources (goods, services, information) and skills they possess to transform the potential value of these resources into real value or value-in-use (Grönroos 2008). Thus, the role of the customer is the one who creates value by integrating resources (Grönroos & Ravald 2011). In Paragraph 1.7, the notion of resource integration is described in further detail.

Since it is the customer who ultimately creates value, the firm cannot deliver value. Instead, **the firm acts as a value facilitator** (FP7a) and as such

facilitates the customer's value creation process by producing and delivering resources that represent potential value (or expected value-in-use) for the customer (Grönroos 2011b; Grönroos & Ravald 2011). However, under specific circumstances, more specifically, when direct interactions between the firm and the customer occur, opportunities for value co-creation exist. Interactions are situations where the participants are involved in each other's activities or processes (Grönroos 2011b). During interactions, "the supplier gets opportunities to influence the process of value creation, in the best case enhancing the level of value the customers create out of a service activity or a good" (Grönroos & Ravald 2011, p. 10). In this case, the customer is the value creator and **the firm becomes a value co-creator**. Thus, the customer controls the value creation process and can invite the supplier to join this process as a co-creator of value (Grönroos & Voima 2013). It should be noted that the mere existence of interactions is not enough for value co-creation as the firm's actions during these direct interactions with the customer can lead to value creation as well as value destruction. The quality of the interactions is thus fundamental for value co-creation (Grönroos 2011b). This dissertation focuses on the firm's role as a value facilitator and, as a result, value co-creation is not part of this dissertation.

Before the firm can act as a value facilitator or value co-creator, it has to develop and communicate a **value proposition** (FP7). This "can be thought of as an invitation to engage with the firm, for (usually mutual) benefit" (Vargo & Lusch 2012, p. 5). As such, value propositions are developed in order to communicate to customers regarding what they should expect (Edvardsson, Tronvoll, & Skålén 2012). Once the value is proposed, it is up to potential customers to decide whether or not to accept the value proposition (Vargo, Maglio, & Akaka 2008). Value propositions are described in further detail in Paragraph 1.8.

The last foundational premise (FP10) is in line with the view that value is perceived by the customer in a personal and situation-specific way (see Paragraph 1.3). It furthermore implies that customer value is experiential which means that it resides not in the product purchased or the brand

chosen but in the consumption experiences derived therefrom (Holbrook 1999). Hence, the subject (i.e., the customer) interacts with the object (i.e., the product or service) by using or experiencing it in some way (Wagner 1999). In the original foundational premises of S-D logic presented by Vargo and Lusch (2004; 2008b), the experiential nature of value is reflected in the use of the term 'phenomenological' rather than 'experiential' because, according to Vargo and Lusch, the term 'experience' has too many meanings. Vargo and Lusch (2008b) state that the term experience often "invokes connations of something like a 'Disneyworld event'" (Vargo & Lusch 2008b, p. 9) or is used to indicate previous interaction. Therefore, to the extent that the term 'experience' is used in a phenomenological sense, they are comfortable with the terms being used interchangeably.

As already demonstrated by the remark of Vargo and Lusch, the term 'experience' can be understood in many different ways. According to Tyran and McKechnie (2009, p. 502),

> It can be both a noun and a verb and it is used variously to convey the process itself, participating in the activity, the affect or way in which an object, or emotion is felt through the senses or the mind, and even the outcome of an experience by way of a skill or learning for example. Therefore, it is not clear whether the experience is active or passive, whether it must result in particular outcomes like learning or skill development or whether it requires interaction or not.

In a similar vein, the English term 'experience' can be translated into Dutch in three ways: (1) beleving; (2) belevenis; and (3) ervaring (Petermans 2012). Although these translations seem closely related to each other, each of them has a different connotation.

- When experience is translated as 'beleving', it implies the feelings of a person in a specific situation. It involves the way that something is experienced and has meaning for the person in the situation at hand. For example, if the customer is treated well by the person behind the counter, he may feel happy and satisfied with the situation.

- Experience as 'belevenis' relates to the experience of a special event which most of the time has a clear beginning and end. The Disneyworld example mentioned by Vargo and Lusch is a good illustration of such an experience. This notion of experience is closely related to the viewpoints found in popular business and management books such as for example the work of Schmitt (1999), Pine and Gilmore (1999), and Shaw and Ivens (2002). In this type of works, authors often focus on extraordinary and/or memorable experiences (Caru & Cova 2003).
- Experience in the connotation of 'ervaring' refers to all kinds of experiences, also everyday and/or ordinary experiences, which do not necessarily have a clear beginning or end. It has to do with the sum of all interactions that an individual has with the environment and with others (Boswijk, Thijssen, & Peelen 2007). It furthermore concerns know-how which people have acquired in the course of time by means of such interactions. Thus, the meaning of experience in the sense of 'ervaring' involves an important learning component or an aspect of awareness (Boswijk et al. 2007; Petermans 2012)

Hence, experience can have different meanings and/or dimensions (i.e., ervaring, beleving, belevenis) and each of them can be valuable in its own way. In this dissertation, when referring to experience, this mostly denotes experience as 'ervaring', more specifically, it involves experiences based on the interactions between the subject (customer) and the object (product or service). This does not imply that the other meanings or dimensions are redundant. Furthermore, because experience is a holistic concept, the three dimensions can not be fully discerned from one another.

Based on the description of value creation from a service-dominant logic perspective, three additional characteristics of customer value are added to the five mentioned before (see Paragraph 1.3). As a result, customer value can be described by means of the eight characteristics presented in Table 3.

Table 3 Eight fundamental characteristics of customer value

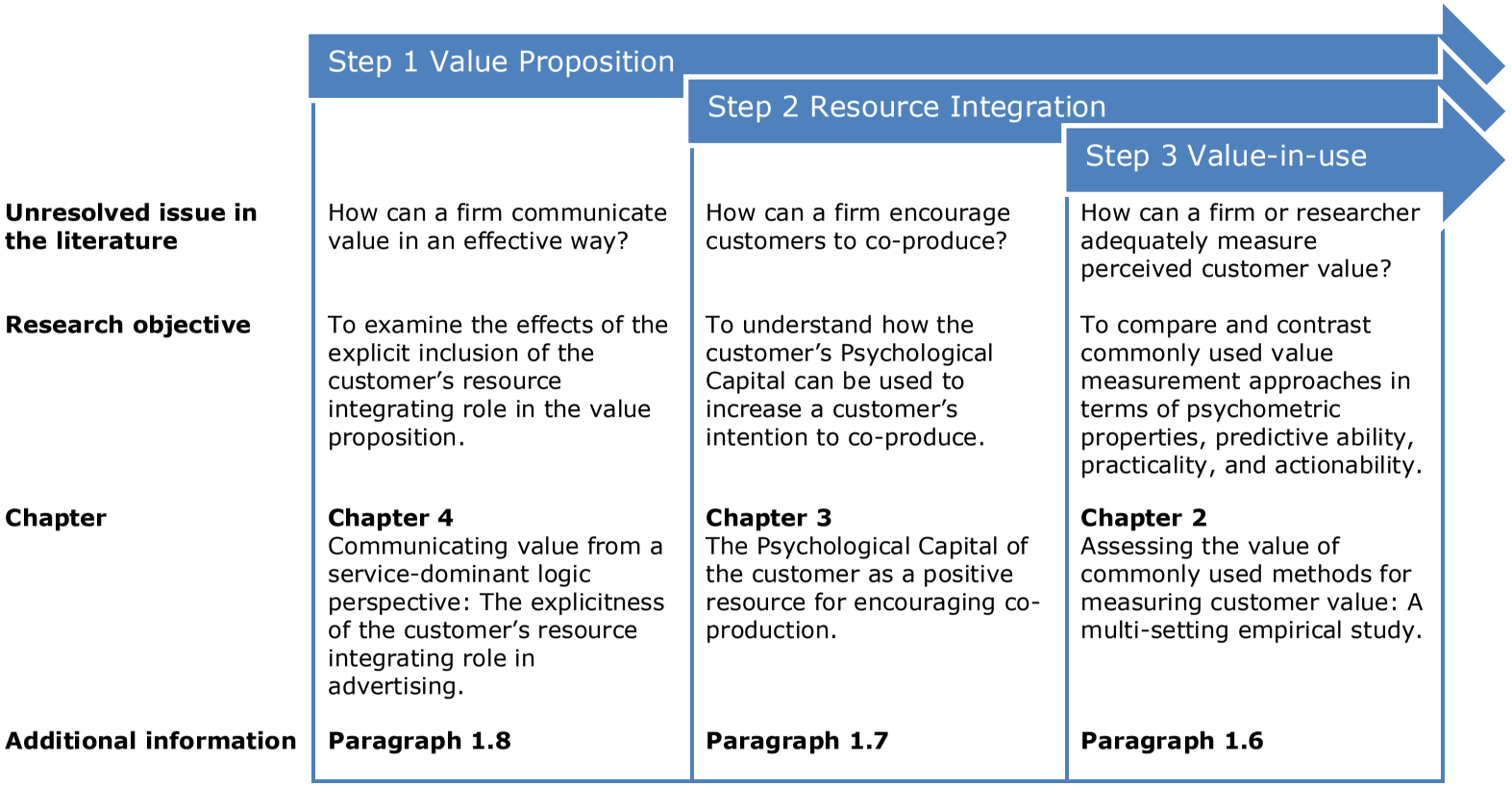
Customer value….	
1.	involves a trade-off between perceived benefits and costs.
2.	is perceived by the customer.
3.	is personal.
4.	is situation-specific.
5.	implies an interaction between a subject (i.e., the customer) and an object (e.g., a product, a service, a store).
6.	is always created by the customer.
7.	is facilitated by the firm.
8.	can only be co-created with the firm in case of high-quality direct interactions between the customer and the firm (or its employees).

1.5 Integrated framework

This dissertation aims to provide a better understanding of customer value in light of service-dominant logic and its value-related foundational premises.

As a starting point, the framework presented in Figure 1, which is based on the work of Ballantyne et al. (2011), is used. This framework involves a three-stage process. In a first stage, the value proposition is developed and communicated. The customer evaluates the value proposition and when he accepts it, the customer buys the product or service and resource integration takes place: The customer uses the resources provided by the firm (goods or services) and integrates them with other resources (goods, services, information) and skills he possesses to transform the potential value of these resources into real value. Finally, the customer evaluates this value-in-use: He evaluates the benefits and costs associated with the product or service and makes a mental trade-off between them.

Figure 1 Integrated framework



This framework is in line with the temporal positions regarding customer value mentioned by Woodall (2003) and Grönroos and colleagues (Grönroos 2011b; Grönroos & Ravald 2011; Grönroos & Voima 2013). More specifically, these authors state that customer value helps to explain different facets of customer behavior that occur both before, during and after the purchase. *Before the purchase,* the customer holds some expectations about the potential value of the product or service. These expectations can be based on the communication of the company, previous experiences with the same or similar products or services, conversations with family, friends or colleagues, … *At the point of the trade,* the customer can experience a sense of customer value in real-time. For example, when getting a discount when buying the product or service, or when the employee behind the counter is really friendly when you pay for the product or service, this can lead to better value perceptions. *After the purchase,* the customer uses the products or services and integrates them with other resources and skills he possesses. In this way, the customer creates value-in-use.

In the next paragraphs, I elaborate on the contents of the remainder of this dissertation and describe how the various chapters are related to the framework presented in Figure 1. These paragraphs furthermore describe the relevant concepts stemming from the service-dominant logic that relate to the research objective at hand.

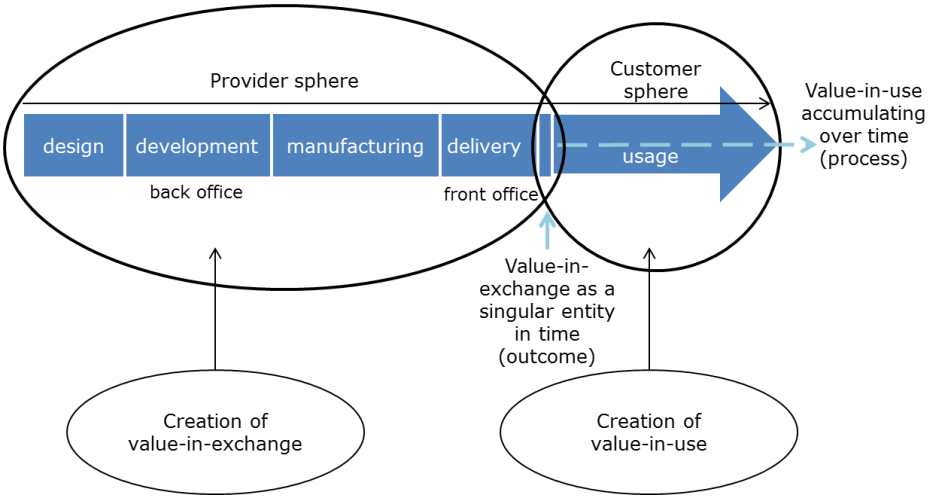
Because one of the most fundamental and challenging issues of value research involves the assessment of value and this also contributes to the understanding of the concept itself, I start with the third step in the framework, i.e., value-in-use.

1.6 Value-in-use

In recent literature about customer value and service-dominant logic, there has been a consensus that value-in-use is the basis upon which marketing should focus (i.e., Vargo & Lusch 2012; Grönroos 2011b). Although the traditional concept of value-in-exchange still exists, there has been an overwhelming acceptance that value is created in use (Grönroos 2011b;

Grönroos & Voima 2013). A schematic illustration of the difference between value-in-exchange and value-in-use is presented in Figure 2.

Figure 2 A comparison of value-in-exchange and value-in-use (adapted from Grönroos 2011b, p. 283)



Value-in-exchange implies that output is embedded with value through the production process. It is created during the production process and thus separated from the customer (Echeverri & Skålén 2011). It therefore exists as a singular entity, at a given point in time, and it can be exchanged for something else (most of the time for money) (Grönroos & Voima 2013). According to Grönroos and Voima (2013) however, this value-in-exchange concept should not be considered as real value but as *potential* value. According to the value-in-use perspective, real value only emerges during use, since "value is not created and delivered by the supplier but emerges during usage in the customer's process of value creation." (Grönroos & Ravald 2011, p. 8). Value-in-use thus accumulates over time during usage (Grönroos 2008; 2011b; Grönroos & Voima 2013). From this value-in-use perspective, customers are not interested in what they purchase and consume, but they are primarily interested in the consequences of using the product or service (Grönroos & Ravald 2011).

For simplicity reasons, Figure 2 implies a linear sequence of the provider's process and the customer's process. However, in reality, the customer's value creation process is not linear and does not automatically have to follow the provider's activities (Grönroos & Voima 2013). For example, if the customer designs his own shoes (e.g., Nike ID), the customer creates value (such as enjoyment) before the actual delivery and use of the product. In line with these temporal differences, the scope of value creation has recently been studied as part of the customer's life (Heinonen et al. 2010; Helkkula, Kelleher, & Pihlström 2012; Voima, Heinonen, & Strandvik 2010) which implies that value not only accumulates from past and current experiences but can also be envisioned in future experiences. For example, a person may experience value already in the process of dreaming about a summer vacation or when planning the trip. A more elaborate description of this topic is provided in Paragraph 5.3.5 of this dissertation.

Research objective

Despite the importance of customer value, considerable divergence of opinion exists on how to adequately conceptualize and measure this construct. Although this chapter already mentioned that value should be considered from a value-in-use perspective, this is not always reflected in the measurement methods used in the literature to capture customer value. Several authors have noted that research on customer value needs more refinement and development (Holbrook 1999; Woodruff 1997; Woodruff & Flint 2006) and emphasized the need for further understanding of how value should be measured (e.g., Lapierre 2000; Liu, Leach, & Bernhardt 2005; Sweeney & Soutar 2001; Ulaga & Chacour 2001). Although a great number of value measurement methods have been offered in the literature, no empirical work exists that considers the relative performance of the most popular methods. This is a critical gap in the literature, as empirical evidence concerning how to optimally conceptualize and measure customer value represents a necessary condition for realizing the full potential of customer value management. In response to this gap in the literature, the first research objective implies ***an empirical multi-faceted comparison of methods for measuring customer value.*** More specifically, the aim is to

compare and contrast commonly used value measurement methods in terms of psychometric properties, predictive ability, practicality and actionability.

In Chapter 2, four commonly used methods for measuring customer value (i.e., the methods proposed by Dodds, Monroe, & Grewal 1991, Gale 1994, Holbrook 1999, and Woodruff & Gardial 1996) are compared. In line with the value literature described before, it should be noted that the method of Dodds et al. (1991) takes an *overall* value-in-exchange perspective by using a value-for-the-money scale (example item: This product is a very good value for the money). Gale (1994) also takes a value-in-exchange perspective but takes into account the attributes or objective features of the product such as size, shape or on-time delivery. Since these attributes are required to obtain real value during usage, this perspective is actually more a *potential* value-in-use perspective. The other methods (Holbrook 1999; Woodruff & Gardial 1996) focus on value-in-use and thus take into account the consequences of product use. Consequences are more subjective experiences resulting from product use, such as a reduction in lead time or a pleasant experience (Gutman 1982; 1997; Woodruff & Gardial 1996).

In order to provide a better picture of the performance of the measurement methods, the comparison of these methods occurred with regard to two quantitative (psychometric properties and predictive ability) and two subjective topics (practicality and actionability). Because the results of this comparison can depend on the setting, these methods were compared across four different settings. The choice of settings was guided by the Foote, Cone and Belding (FCB) grid (Vaughn 1980), which classifies customers' purchase decisions on two dimensions: involvement and type of offering. The products selected as research contexts are soft drink (low involvement, feel), toothpaste (low involvement, think), day cream (high involvement, feel) and DVD player (high involvement, think).

1.7 Resource integration

According to the value-in-use perspective, value creation takes place during usage and through the integration of resources (Grönroos & Ravald 2011). Hence, customers act as resource integrators (Vargo & Lusch 2008;

Grönroos & Ravald 2011) which implies that customers use the resources provided by the firm (goods or services) and integrate them with other resources (goods, services, information) and skills they possess to transform the potential value of these resources into value-in-use (Grönroos 2008). The goods or services provided by the firm are thus input to the value creating activities of the customer. Before value can be realized, this input must be integrated with other resources. This is in line with Wikström's (1996, p. 362) notion that consumption can be considered as a productive process and the offering of the supplier is "a vital ingredient in the consumer's own value creation."

Thus, the role of the customer is very significant, since he is the one who creates value-in-use by integrating resources (Grönroos & Ravald 2011). The customer is responsible for the value creation process and the outcome of this process depends on his competences as a resource integrator (Grönroos & Ravald 2011). Thus, the customer also brings a value foundation to the table: The skills held by the customer and his access to the required additional resources. If the customer does not have the skills needed or if the customer does not have access to the required additional resources, value-in-use will be insignificant (Grönroos 2008).

Co-production

When value is defined as value-in-use, the production process (including design, development, manufacturing, delivery) is not really part of value creation (Grönroos 2008; 2011b; Grönroos & Voima 2013). Only under certain circumstances, i.e., when the customer participates in these production-related activities, such activities may become part of value creation. Hence, when describing customer value, it is very important to recognize the difference between production and value creation. As mentioned by Grönroos and Ravald (2011, p. 7):

> Production is the process of making the resources customers integrate in their consumption or usage processes. Value creation is the process of creating value-in-use out of such resources. Hence,

value is not produced; resources out of which value can be created are produced.

As a result, two conceptually distinct subprocesses can be discerned: the supplier's production process and the customer's value creation process (see also Figure 2). Based on this distinction, co-production implies that the customer engages himself with the supplier's production process and becomes a participant in this process (Grönroos & Voima 2013). Hence, the firm is in charge of the production process, but the customer can participate in the production process as a co-producer (co-designer, co-developer) (Grönroos 2011b).

In case of co-production the customer's resource integrating role enlarges and his responsibility increases (Bendapudi & Leone 2003; Troye & Supphellen 2012). For example, when the customer buys a bookshelf and decides to assemble it himself, he has to use more resources (in terms of time and effort) and more skills (in terms of assembling) than when the firm assembles the bookshelf (Grönroos & Voima 2013). If co-production implies more effort and time required from the customer, why should the customer choose for co-production? And, on the other hand, why should a firm offer such a co-production option? Previous research (e.g., Auh et al. 2007; Bendapudi & Leone 2003; Bowers & Martin 2007; Halbesleben & Buckley 2004) has indicated that co-production can result in benefits for the customer as well as the firm. However, these benefits can only be obtained if the customer chooses the co-production option. Therefore, encouraging customers to co-produce is considered the next frontier in competitive effectiveness (Bendapudi & Leone 2003; Chan, Yim, & Lam 2010).

Research objective

Emergent perspectives in marketing theory and practice highlight the possibilities of co-production. However, in order to make the most of these possibilities, a better understanding of the factors that influence customers' intention to co-produce is necessary. In line with the recommendation to use employee management theories to better understand customers' co-production intentions, this dissertation introduces and empirically assesses

customers' Psychological Capital as a way to encourage co-production. Hence, the second resource objective of this dissertation involves ***an understanding of how the customer's Psychological Capital can be used to increase a customer's intention to co-produce.***

In Chapter 3, the Psychological Capital (PsyCap) of the customer is investigated as a potential motivating factor which can be actively managed to encourage co-production. PsyCap is a higher-order state-like construct consisting of various capacities that drive the motivation to achieve specific tasks and goals. The value of PsyCap for the co-production literature lies in its key characteristics: PsyCap is measurable, developable and is related to various attitudinal, behavioral, and performance outcomes (Avey et al. 2010; Luthans, Youssef & Avolio 2007b).

Three empirical studies were conducted to investigate the role of PsyCap in a co-production setting. Study 1 investigates the relationship between a customer's PsyCap and intention to co-produce. Study 2 examines the role of PsyCap in a larger conceptual model based on Social Cognitive Theory to increase our understanding of the various factors that influence a customer's intention to co-produce. Finally, Study 3 focuses on gaining insight into several factors that lead to an improvement in the level of customers' PsyCap in a co-production setting. This final study thus investigates the malleable, state-like nature of PsyCap in a co-production context.

1.8 Value proposition

Finally, we take one step back and focus on how the value creation process starts, i.e., with an invitation to engage with the firm or the so-called value proposition.

"A value proposition is a promise about future potential value." (Grönroos 2011b, p. 294). Value propositions are developed in order to communicate to customers regarding what they should expect (Edvarsson et al. 2012). Thus, in general, a value proposition makes explicit the benefits expected to be gained and given up (Ballantyne et al. 2011). Although value propositions

are central conceptual elements in S-D logic, further elaboration on this concept is required (Vargo & Lusch 2008).

Research objective

Based on the crucial role of the customer in the creation of value, Edvardsson et al. (2012) have argued that the firm should not only communicate the expected value (in terms of expected benefits and/or costs) of a product or service but also *how* this value could be created. In other words, value propositions should communicate the potential or expected value of a product or service *as well as* the role of the customer in creating real value out of the potential value offered by the firm. However, empirical research on the effect of explicitly communicating the customer's resource integrating role (CRIR) to the customer is still lacking. In response to this research gap, the final objective of this dissertation involves ***an analysis of the effects of the explicit inclusion of the customer's resource integrating role in the value proposition.***

Chapter 4 empirically examines the effects of explicitly stating the customer's resource integrating role in the value proposition. The advertised message was used as a communication device for the value proposition. Based on existing advertising theories, Chapter 4 presents a nomological web linking the inclusion of the customer's resource integrating role in the advertised message with key outcomes. This nomological web was tested in two different settings, i.e., a toothpaste and a fitness program.

Finally, Chapter 5 presents a summary of the main findings of this dissertation's empirical studies and provides some opportunities for further research.

Chapter 2

Assessing the value of commonly used methods for measuring customer value: A multi-setting empirical study[1]

2.1 Introduction

In today's increasingly competitive business world, in which customers are more demanding and more value conscious than ever before (Sweeney & Soutar 2001), it is indispensable for organizations to understand the value of their products and services (Sweeney & Soutar 2001; Woodruff 1997). Customer value, which can be defined as a trade-off between the benefits and costs of a product or service perceived by the customer, has been widely recognized as an essential ingredient for organizational success (Slater 1997; Wang et al. 2004). Furthermore, it is a key antecedent of customer satisfaction, (re)purchase intentions, word of mouth (Bolton & Drew 1991; Cronin et al. 2000; Lai et al. 2009; Zeithaml et al. 1996), and ultimately the long-term profitability of the organization (Anderson et al. 1994; Hallowell 1996; Kamakura et al. 2002; Loveman 1998).

Additionally, the importance of customer value has been underscored by Vargo and Lusch (2004; 2008b) when they presented service-dominant logic and its ten foundational premises. In their groundbreaking article *'Evolving to a new dominant logic for marketing'* (Vargo & Lusch 2004), they referred

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Furthermore, this chapter is largely based on: Leroi-Werelds, S., Streukens S., Brady, M. K., Swinnen, G., & Janssens, W. Assessing the value of commonly used methods for measuring customer value: A multi-setting empirical study. To be submitted for a 2nd review to the *Journal of the Academy of Marketing Science.*

to value more than fifty times and the construct plays a central role in at least three of their foundational premises (see also Woodruff & Flint 2006).

Because of the importance of customer value to the marketing literature as well as marketing practice, it has been extensively studied in recent years. However, several authors have noted that research on customer value needs more refinement and development (Holbrook 1999; Woodruff 1997; Woodruff & Flint 2006). In particular, there is a need for further understanding of how value should be measured (e.g., Lapierre 2000; Liu, Leach, & Bernhardt 2005; Sweeney & Soutar 2001; Ulaga & Chacour 2001), since "making customer value strategies work begins with an actionable understanding of the concept itself" (Woodruff 1997, p. 141). Although a great number of value measurement methods have been offered in the literature, no empirical work exists that considers the relative performance of the most popular methods. This is a critical gap in the literature, as empirical evidence concerning how to optimally conceptualize and measure perceived customer value represents a necessary condition for realizing the full potential of customer value management.

In response to this gap in the literature, the aim of this chapter is to assess and compare the performance of four commonly used customer value measurement methods (i.e., Dodds et al. 1991; Gale 1994; Holbrook 1999; Woodruff & Gardial 1996). These methods are compared with regard to two quantitative and two subjective topics. First, the measurement model associated with each method is evaluated by examining its psychometric properties. Second, the structural model of each method is examined by comparing their ability to predict key customer outcome measures (i.e., customer satisfaction, repurchase intentions, and word of mouth). To ensure cross-validation of results, model comparisons took place across four different product settings. Third, the practicality of the different methods is investigated both from a researcher's and a practitioner's point of view. Finally, the actionability of the four methods is evaluated in terms of their relative abilities to offer specific directions for improvement. This chapter culminates with a prescriptive flowchart that offers advice on the most

suitable measurement approach across a variety of commonly encountered settings.

The rest of this chapter is organized as follows. First, a brief literature review is given in which customer value is described, the four measurement methods that take central stage in this chapter are presented, and their similarities and differences are discussed. Second, the four topics of comparison are described. Next, the research design is discussed, and subsequently, the findings with respect to each of the topics are presented. Finally, the conclusions and limitations are presented, and some suggestions for further research are described.

2.2 Theoretical background

2.2.1 Customer value

A review of the existing literature on customer value provides three key insights into the nature of the concept. First, although a number of definitions have been put forth, the one proposed by Zeithaml (1988, p. 14), "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given," is the most universally accepted definition of customer value (e.g., Chen & Dubinsky 2003; Flint et al. 2002; Ruiz et al. 2008). Second, customer value is perceived by the customer. Hence, it is the customer who defines the value of a product or service and not the supplier (Rintamaki, Kuusela, & Mitronen 2007; Woodruff 1997). Third, customer value implies an interaction between a subject (i.e., the customer) and an object (i.e., the product or service). Thus, value is inherently linked to the use of a particular product or service (Woodruff 1997). This latter characteristic distinguishes customer value from customer values, which are "centrally held and enduring beliefs about right and wrong, good and bad that cut across situations and products or services" (Woodruff 1997, p. 141).

2.2.2 Customer value conceptualizations

The conceptualizations of Dodds et al. (1991), Gale (1994), Holbrook (1999), and Woodruff and Gardial (1996) take central stage in this chapter.

These measurement methods were selected for the following reasons. First, all four methods encompass the trade-off approach mentioned in Zeithaml's (1988) definition. Second, they have been commonly used in both applied and academic research. Third, although several value typologies have been offered in the literature (see Table 4), Holbrook's method has been considered "the most comprehensive approach to the value construct because it captures more potential sources of value than do other conceptualizations" (Sánchez-Fernández et al. 2009, p. 97). Furthermore, most of these value typologies are based on or fit the Holbrook value typology used in this study (see Table 4).

Although the consumption-value theory proposed by Sheth, Newman, and Gross (1991) made a very important contribution to the value literature by describing customer value as a complex multi-dimensional concept, the original version of this approach was not included in our study because of the following reasons: (1) it ignores some types of value (Sánchez-Fernández & Iniesta-Bonillo 2007); (2) it does not take into account the cost side of the trade-off; and (3) it is based on different theoretical roots, since it is developed to discern between the choice to buy or not buy (or to use or not use), the choice of one product type over another, and the choice of one brand over another (Sheth et al. 1991). For example, it can be used to compare the consumption values of smokers and nonsmokers but also to discriminate between the values of Malboro smokers and Camel smokers. Several authors (Sweeney et al. 1996; Sweeney & Soutar 2001; Wang et al. 2004) have adapted the framework developed by Sheth et al. (1991) by omitting epistemic and conditional value and including sacrifice components. However, these value typologies fit the Holbrook typology (see Table 4) and, as mentioned before, the latter typology is used because it encompasses more value types than do other value typologies.

Table 4 Customer value typologies

Value typology	Holbrook dimension
PERVAL by Sweeney and Soutar (2001)	
Based on the approach of Sheth et al. (1991)	
1. Emotional value The utility derived from the feelings or affective states that a product generates	Play Aesthetic value
2. Social Value The utility derived from the product's ability to enhance social self-concept	Social value
3. Functional value: Quality/performance The utility derived from the perceived quality and expected performance of the product	Excellence
4. Functional value: Price/value for money The utility derived from the product due to the reduction of its perceived short term and longer term costs	Efficiency
SERV-PERVAL by Petrick (2002)	
1. Behavioral price The price (non-monetary) of obtaining a service, which included the time and effort, used to search for the service	Efficiency
2. Monetary price The price as encoded by the consumer	Efficiency
3. Emotional response The pleasure that the product or service gives the purchaser	Play
4. Quality A product or service's overall excellence or superiority	Excellence
5. Reputation The prestige or status of a product or service, as perceived by the purchaser, based on the image of the supplier	Social value

Table 4 Customer value typologies (continued)

Value typology	Holbrook dimension
Experience Value Scale by Mathwick et al. (2001)	
Based on Holbrook's (1999) value typology, but only the self-oriented part	
1. Consumer return on investment: active sources of extrinsic value (economic utility + utility derived from efficiency)	Efficiency
2. Service excellence: reactive sources of extrinsic value (deliver on promises, performance outcomes, quality)	Excellence
3. Playfulness: active sources of intrinsic value (escapism + enjoyment)	Play
4. Aesthetic appeal: reactive sources of intrinsic value (visual elements such as design, physical attractiveness, beauty + entertaining or dramatic aspects)	Aesthetic value
GLOVAL by Sánchez et al. (2006)	
Based on Sweeney and Soutar (2001)	
1. Functional value of the establishment The location, organization, cleanliness, … of the establishment	Excellence
2. Functional value of the contact personnel The professionalism of the service personnel	Excellence
3. Functional value of the product The quality of the product	Excellence
4. Functional value price The price of the product	Efficiency
5. Emotional value The feelings (such as enjoyment and relaxation) related to the product and the service delivered by the contact personnel	Play
6. Social value The way the customer is perceived by others	Social value

Table 4 Customer value typologies (continued)

Value typology	Holbrook dimension
Kantamneni and Coulson (1996)	
1. Core value The product is useful, functional, of good quality, reliable, safe, durable and can satisfy the customer	Excellence
2. Personal value The product increases individuality; symbolic value.	Social value
3. Sensory value The product's taste, sound, smell, touch	Aesthetic value Excellence
4. Commercial value The brand name, store name, price, and ethicality	Brand name, store name = status, esteem but also excellence Price = efficiency Ethicality = ethics

With respect to the differences between the four methods studied in this chapter, they can be classified either as one-dimensional or multi-dimensional (Ruiz et al. 2008; Sánchez-Fernández & Iniesta-Bonillo 2007; Sánchez-Fernández et al. 2009). According to the one-dimensional view, customer value is "a single overall concept that can be measured by a self-reported item (or set of items) that evaluates the consumer's perception of value" (Sánchez-Fernández & Iniesta-Bonillo 2007, p. 430).

Although an often-mentioned advantage of the one-dimensional measurement method is its simplicity and ease of implementation (Lin, Sher, & Shih 2005), many researchers (e.g., Ruiz et al. 2008; Sweeney & Soutar 2001) have pointed out that customer value is too complex to be captured by a one-dimensional measurement method. As a response to this critique, so-called multi-dimensional approaches have been put forth, which consider customer value as consisting of several interrelated dimensions (Sánchez-Fernández & Iniesta-Bonillo 2007).

Second, the nature of the benefits and costs included in the model differs across the four measurement methods. Following Gutman's (1982) means-end chain model, these benefits and costs can be measured at the attribute and/or consequence level. Attributes are concrete characteristics or features of a product or service such as size, shape, or on-time delivery. Consequences are more subjective experiences resulting from product use, such as a reduction in lead time or a pleasant experience (Gutman 1982; 1997; Woodruff & Gardial 1996). Table 5 summarizes how the customer value measurement methods differ on the two abovementioned key criteria.

Table 5 Differences between measurement methods

	Approach	*Nature of costs/benefits*
Dodds, Monroe and Grewal (1991)	One-dimensional	N/A
Gale (1994)	Multi-dimensional	Attributes
Woodruff and Gardial (1996)	Multi-dimensional	Consequences
Holbrook (1999)	Multi-dimensional	Attributes and consequences

Dodds, Monroe and Grewal's (1991) approach. Dodds et al. (1991) have defined perceived value as "a cognitive trade-off between perceived quality and sacrifice" (Dodds et al. 1991, p. 316). Based on this definition, they have measured customer value by asking respondents five summary questions concerning the overall value of the product or service (Items used: 'This product is a very good value for the money'; 'At the price shown, this product is very economical'; This is a good buy'; 'The price shown for this product is unacceptable'; 'This product appears to be a bargain'). From a theoretical point of view, this approach has been considered to be one-dimensional, since the value construct is not divided into distinct dimensions that tap into specific elements of value. In terms of the second domain of difference, the nature of the costs and benefits, a distinction between attributes and consequences does not apply to this method, as the items assess customer value at a very general level. Empirical studies using the measurement scale of Dodds et al. (1991) include Teas and Agarwal (2000),

Agarwal and Teas (2001), Baker et al. (2002), Chen and Dubinsky (2003), and Caruana and Fenech (2005).

Gale's (1994) customer value analysis. The basic premise underlying Gale's (1994) 'customer value analysis' is that customer value equals the difference between a weighted quality score (termed market-perceived quality) and a weighted price score (termed market-perceived price). Construction of the quality and price scores entails asking respondents to evaluate relevant quality/price attributes in terms of performance and importance. These attributes are known by the company or are elicited from in-depth or focus group interviews, and they cover all relevant aspects related to perceived quality/price. Since this method explicitly distinguishes among various elements of benefits and costs, this measurement method can be considered multi-dimensional. In terms of the nature of the benefits and costs assessed by Gale's (1994) approach, the method remains at the attribute level. Authors following Gale's (1994) customer value analysis include Laitamäki and Korduplesk i (1997), Lam et al. (2004) and Setijono and Dahlgaard (2007).

Woodruff and Gardial's (1996) customer value hierarchy. Woodruff and Gardial (1996) have presented the 'customer value hierarchy' to measure customer value. Their work differed from previous conceptualizations by suggesting that value creation takes place at the consequence level rather than at the more narrowly defined attribute level. More specifically, they state that value is the result of "the trade-off between the positive and negative consequences of product use as perceived by the customer" (Woodruff & Gardial 1996, p. 57). According to Woodruff and Gardial (1996), this shift in focus from attributes to consequences results in value creation that leads to a more pronounced and sustainable competitive advantage. Similar to Gale's (1994) customer value analysis, Woodruff and Gardial's (1996) method explicitly discerns among different elements of the benefits and sacrifices they assess. Thus, this method can be classified as a multi-dimensional approach. Authors following this approach include Flint et al. (2002) and Overby, Gardial, and Woodruff (2004).

Holbrook's (1999) customer value typology. Holbrook (1999) has developed a customer value framework that reflects three underlying dimensions: (1) extrinsic value versus intrinsic value (i.e., an offering appreciated for its functional, utilitarian ability to achieve something versus an offering appreciated as an end-in-itself); (2) self-oriented value versus other-oriented value (i.e., an offering prized for the effect it has on oneself versus the effect it has on others); and (3) active value versus reactive value (i.e., the customer acts on the object versus the object acts on the customer). Each of the three dimensions has been treated as a dichotomy, though it should be envisioned as a continuum of possibilities running from one extreme to the other with gradations in between (Holbrook 1999). Using the three dimensions outlined above, Holbrook (1999) has developed a matrix representing eight types of customer value: Efficiency, excellence, status, esteem, play, aesthetics, ethics, and spirituality (see Table 6).

Table 6 Holbrook's typology of customer value

		Extrinsic		*Intrinsic*	
Self-oriented	*Active*	EFFICIENCY		PLAY	
	Reactive	EXCELLENCE		AESTHETICS	
Other-oriented	*Active*	STATUS	SOCIAL VALUE	ETHICS	ALTRUISTIC VALUE
	Reactive	ESTEEM		SPIRITUALITY	

The Holbrook typology involves the co-existence of different types of customer value, meaning that a consumption experience can entail many - or even all - of the value types identified in the typology (Holbrook 1999). However, some of the value types in Holbrook's framework are related in such a way that it is extremely difficult to operationalize them separately. For that reason, some authors have suggested combining these value types in an overarching category. In particular, the demarcation between status and esteem can be problematic because "the active nature of status and the reactive nature of esteem tend to blur together in ways that render the two

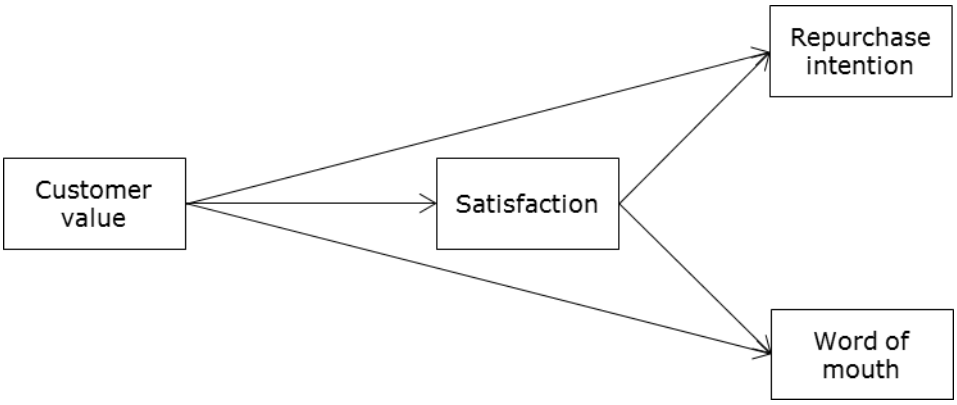
hard to distinguish" (Holbrook 1999, p. 188). Therefore, this study follows previous research by combining status and esteem in an overarching category labeled 'social value' (Bourdeau, Chebat, & Couturier 2002; Gallarza & Gil-Saura 2006; Sánchez-Fernández et al. 2009; Sweeney & Soutar 2001). Social value arises when one's own consumption behavior serves as a means to influence the responses of others (Holbrook 2006). Similarly, ethics and spirituality can be combined under the heading of 'altruistic value' (Sánchez-Fernández et al. 2009). Altruistic value can be defined as "a concern for how my own consumption behavior affects others where this experience is viewed as a self-justifying end-in-itself" (Holbrook 2006, p. 716).

In line with the various value types included in the typology, the Holbrook (1999) approach can be considered a multi-dimensional approach. Regarding the nature of the benefits and sacrifices measured, Holbrook's (1999) method involves both the attribute and the consequence levels (Overby et al. 2004; Woodruff 1997).

2.2.3 Key customer outcomes of value

Drawing on established relationships between key outcome constructs specified in the literature (e.g., Bolton & Drew 1991; Cronin et al. 2000; Lai et al. 2009; Zeithaml, Berry, & Parasuraman 1996), the structural model presented in Figure 3 is used to evaluate the performance of the four measurement methods. Customer satisfaction is defined as the cumulative evaluation that is based on all experiences with the supplier's offering over time (Anderson et al. 1994), since it is this cumulative evaluation that eventually results in customer loyalty and superior financial performance (Anderson et al. 1994; Oliver 1997). Consistent with prior research (Cronin et al. 2000; Zeithaml et al. 1996), the ultimate dependent variables include intention to repurchase and the willingness to recommend to others (Lai et al. 2009; Wirtz & Lee 2003; Zeithaml et al. 1996).

Figure 3 Structural model



2.3 Comparison of methods

The primary objective of this chapter is to compare the four value measurement methods with regard to two quantitative and two subjective criteria. The quantitative criteria include the assessments of the measurement and structural models related to the four methods. More specifically, the psychometric properties and predictive ability associated with each of the four methods are examined. The subjective criteria include each method's practicality and actionability, which generally refer to ease of use and ability to offer specific directions for improvement. Each of the four criteria is discussed in more detail below.

2.3.1 Measurement model: Psychometric properties

The comparison starts with an evaluation of the measurement model in terms of how well the value construct is measured by the indicator variables, both individually and jointly (Hair, Ringle, & Sarstedt 2011). Therefore, the psychometric properties of all first-order constructs used in this study were evaluated. It should be noted, however, that it is crucial to distinguish between reflective and formative scales (Hair et al. 2011; MacKenzie, Podsakoff, & Jarvis 2005).

Regarding the reflective scales, relevant psychometric properties include unidimensionality, internal consistency reliability, item validity, within-method convergent validity, and discriminant validity, respectively.

Unidimensionality refers to the existence of a single construct underlying a set of items and was assessed following the procedure suggested by Karlis, Saporta, and Spinakis (2003). The test proposed by Jöreskog (1971) was used to gain insight into the internal consistency of the multiple-item constructs. Inspection of the magnitude and significance of the item loadings provided information regarding item validity. Within-method convergent and discriminant validity were assessed by Fornell and Larcker's (1981) average variance extracted (AVE) estimate (convergent validity) as compared to shared variance between the value construct and all other constructs in the model (discriminant validity).

For the formative scales, appropriate psychometric properties encompass item validity and discriminant validity. Concerning item validity, statistical significance is sufficient to conclude whether a formative indicator is valid or not (Diamantopoulos & Winklhofer 2001). Evidence for discriminant validity was obtained by examining whether an absolute value of 1 falls within two standard errors of the latent variable correlations (MacKenzie et al. 2005).

2.3.2 Structural model: Predictive ability

The second comparison criterion relates to the structural model. More specifically, the relative ability of each method to predict key outcome variables (i.e., satisfaction, word of mouth, repurchase intentions) was evaluated. From a theoretical perspective, expanding our knowledge of the predictive properties of these commonly used value measurement methods is needed to better understand the effects of customer value in relation to other constructs. Additionally, information about the behavior of the various customer value measurement methods in the context of other relevant constructs allows for greater understanding of the broader nomological network. Based on the existing literature, two hypotheses are presented with regard to the predictive ability of the various methods.

First, it is expected that multi-dimensional methods perform better than one-dimensional methods. This expectation is fueled by the fact that one-dimensional methods "cannot discern the complex nature of perceived value" (Lin et al. 2005, p. 319). Thus, the following hypothesis is put forward.

Hypothesis 1: With regard to predictive ability, multi-dimensional value conceptualizations (i.e., methods of Gale 1994; Woodruff & Gardial 1996; Holbrook 1999) perform better than one-dimensional value conceptualizations (i.e., method of Dodds et al. 1991).

Second, it is expected that methods that include benefits and sacrifices at the consequence level perform better than methods that do not. This expectation is in line with the service-dominant logic proposed by Vargo and Lusch (2004) and, more specifically, with the concept 'value-in-use'. Vargo and Lusch (2006, p. 44) have stated that "there is no value until an offering is used – experience and perception are essential to value determination." This implies that value is fundamentally derived and determined in use (i.e., consequences), rather than in exchange (i.e., attributes) (Vargo, Maglio, & Akaka 2008), which is consistent with the expectation that value should be measured at the consequence level rather than at the attribute level. Therefore, the following hypothesis is put forward.

Hypothesis 2: With regard to predictive ability, value conceptualizations that assess benefits and sacrifices at the consequence level (i.e., methods of Woodruff & Gardial 1996; Holbrook 1999) perform better than value conceptualizations that do not assess benefits and sacrifices at the consequence level (method of Gale 1994).

2.3.3 Practicality

In this study, practicality is approached from two perspectives: ease of use and questionnaire length. Ease of use implies that the method is straightforward and simple and, as a result, can easily be used, even by non-experts (Devlin, Dong, & Brown 2003; Stewart 1992). For example, if interviews are necessary to generate items before a particular method can be used, this is very time consuming, which can be a drawback. With regard to questionnaire length, a value measurement method with a lot of items fatigues respondents and, hence, researchers should account for survey length when choosing a value measurement method (Drolet & Morrison 2001). Indeed, questionnaire length has a negative effect on response rates and response quality. "Common sense suggests that longer questionnaires

will obtain lower response rates than shorter questionnaires, as they demand more time from the respondent" (Deutskens et al. 2004, p. 24). Concerning response quality, Deutskens et al. (2004) have showed that there are proportionally more 'don't know' answers and semi-completed questionnaires when the questionnaire is longer. Furthermore, they have demonstrated that respondents stop relatively earlier when the questionnaire is longer.

2.3.4 Actionability

The primary purpose of any measurement method is to gain information (Drolet & Morrison 2001). Thus, information is another important basis on which each of the measurement methods should be evaluated. However, this study goes one step further by assessing 'actionability', which implies that the information gathered by the measurement method can easily be translated into actionable guidelines. With regard to value measurement methods, the primary goal is to gather useful information to identify directions for improvement (Woodruff 1997). Leading companies are looking for measurement tools that provide insight into the strengths and weaknesses of the company and that lead to an increased understanding of what is important to the customer (Devlin et al. 2003; Rust, Lemon, & Zeithaml 2004). Thus, the choice of a measurement method not only affects the reliability and validity of the results but also how the results can be used (Devlin et al. 2003).

2.4 Methodology

2.4.1 Sampling

Data were collected in cooperation with an online research bureau which disposes of one of the largest market research panels in Belgium. Although respondents were self-selected, they were disqualified if they did not use or buy the product they evaluated or did not pay for the product themselves. Consequently, each respondent was asked to evaluate the product at hand based on actual purchase and experience. To ensure cross-validation of results, data were gathered across several settings. The choice of settings

was guided by the Foote, Cone and Belding (FCB) grid (Vaughn 1980), which classifies customers' purchase decisions on two dimensions: involvement and type of offering. The products selected as research contexts for this study were soft drink (low involvement, feel), toothpaste (low involvement, think), day cream (high involvement, feel) and DVD player (high involvement, think)[2]. The reason for using various settings is that findings from research conducted across a range of settings tend to have higher reliability and external validity (i.e., the extent to which the findings can be generalized to other situations) than findings from a single setting.

Hence, data were obtained across the four methods and in four different product settings which resulted in a total of 16 independent samples, each having an effective sample size of 210 respondents. Table 7 displays key demographic characteristics of the 16 samples.

2.4.2 Questionnaire design

When designing the questionnaires for this study, several options were taken into consideration. These options depend on the number of settings and/or measurement methods each respondent had to evaluate. For this study the most feasible option was to ask each respondent to evaluate one setting with one measurement method.

[2] Based on the scale suggested by Ratchford (1987), a manipulation check was conducted. Regarding the level of involvement, significant differences between soft drink and day cream (M soft drink = 4.26, M day cream = 4.94, $p < .001$) as well as between toothpaste and DVD player (M toothpaste = 4.14, M DVD player = 4.72 , $p < .001$) were found. With respect to the type of offering (think vs. feel), significant differences were found between soft drink and toothpaste (M soft drink = 4.91 , M toothpaste = 4.39 , $p < .001$) as well as between day cream and DVD player (M day cream = 4.76 , M DVD player = 3.99 , $p < .001$).

Table 7 Demographic characteristics

		Sex		Age	
Setting	Method	male	female	*M*	*SD*
Toothpaste	Dodds	47.10%	52.90%	48.64	14.49
	Gale	37.10%	62.90%	43.83	14.60
	Woodruff	55.20%	44.80%	47.28	14.14
	Holbrook	51.00%	49.00%	48.51	14.41
Soft drink	Dodds	46.70%	53.30%	48.69	13.35
	Gale	44.80%	55.20%	50.09	11.87
	Woodruff	50.00%	50.00%	47.25	13.13
	Holbrook	42.40%	57.60%	48.29	13.69
DVD player	Dodds	80.50%	19.50%	49.82	14.75
	Gale	60.00%	40.00%	46.68	11.92
	Woodruff	57.10%	42.90%	47.99	11.70
	Holbrook	59.00%	41.00%	48.19	12.97
Day cream	Dodds	21.00%	79.00%	46.11	12.04
	Gale	21.40%	78.60%	47.00	13.69
	Woodruff	21.90%	78.10%	46.43	13.05
	Holbrook	14.30%	85.70%	46.87	13.80

Hence, 16 different online questionnaires were used and data were collected from 16 different [sub]samples each having a sample size of 210 respondents. Each questionnaire assessed one value measurement method in one particular setting. The rationale behind this choice is threefold. First, it kept the amount of time and effort (and hence fatigue) from the respondents as low as possible. Second, this implied the avoidance of carry-over effects among the different value measurement approaches. Finally, the restriction to rely on between-subject variance allowed drawing statistically valid conclusions among all possible combinations of value measurement methods.

All questionnaires were administered in Dutch and were identical in terms of the measurement instruments for customer satisfaction, repurchase intentions, and word of mouth. What differed across the questionnaires was

the value measurement method included which furthermore was adapted to the particular setting at hand. All individual items are listed in Table 8 and Table 9, and were evaluated on 9-point Likert scales unless indicated otherwise. The questionnaire design is explained in more detail next.

Dodds et al. 's (1991) approach. To assess the performance of the measurement approach suggested by Dodds et al. (1991), the five items suggested by the original authors were used.

Gale's (1994) approach. To generate items for Gale's (1994) customer value analysis, in-depth interviews based on the laddering technique were carried out (cf. Woodruff & Gardial 1996). Laddering refers to an in-depth, one-to-one interviewing technique used to understand which product attributes the customer finds important and how the customer translates these attributes into meaningful consequences of using the product. As such, laddering builds on means-end-theory (Gutman 1982). Based on these interviews, the attributes that people found most important in the four different settings were listed (see Table 8). In total, 28 interviews were conducted with respondents that had experience with the product under investigation (DVD player n = 7; day cream n = 6; soft drinks n = 7; toothpaste n = 8). The number of respondents in each setting was determined using the procedure suggested by Strauss and Corbin (1998), which involves continuing with laddering interviews until theoretical saturation occurs (i.e., additional interviews do not lead to new information).

Since Gale's (1994) method implies a relative approach for measuring customer value, respondents were asked to evaluate the product attributes relative to the competition with labels ranging from *'XYZ is much better'* to *'XYZ is much worse'* (Babakus, Bienstock, & Van Scotter 2004). This eliminates the possible distorting effects due to interpersonal differences in consideration sets (Cadotte, Woodruff, & Jenkins 1987; Raju & Unnava 2005). In line with Gale's (1994) measurement method, a directly assessed importance weight for each attribute was needed. However, because the number of attributes was considerably large, point allocation – as proposed by Gale (1994) – was not an option. Alternatively, the respondents were

asked to rate the importance of each attribute on a Likert scale anchored at '*very unimportant'* and '*very important'*.

Woodruff and Gardial's (1996) approach. The generation of items for the measurement method proposed by Woodruff and Gardial (1996) was entirely based on the results of the laddering interviews mentioned above (see Table 8).

Holbrook's (1999) approach. For the measurement of Holbrook's (1999) value typology, existing scales were used wherever possible (e.g., excellence: Oliver 1997, efficiency: Ruiz et al. 2008, social value: Sweeney & Soutar 2001, play: Petrick 2002) and adapted to the particular settings by means of the laddering interviews described above. An existing scale for aesthetic value was not available, so the results of the aforementioned laddering interviews were used to generate items. Topics related to altruistic value were not mentioned during the interviews, so this value type was not included in the empirical study which is in line with previous research (e.g., Gallarza & Gil-Saura 2006).

Outcome variables. Customer satisfaction was measured using an 11-point single-item scale. This is in line with the work of Anderson et al.'s (1994) and Wirtz and Lee (2003). Repurchase intentions and word of mouth were measured using the scales developed by Zeithaml et al. (1996).

Before the actual research was conducted, a pilot study was carried out to pretest the questionnaire, paying specific attention to question content, wording, and difficulty. Based on the respondents' comments, a few corrections and adjustments to the wording of the questions were made.

Table 8 Results laddering interviews

	TOOTHPASTE		SOFT DRINK		DVD PLAYER		DAY CREAM	
attributes	*Quality attributes (.98)* Whitening Against teeth cavities User-friendly packaging Cleaning Against dental plaque Against teeth sensitivity A well-known brand Quality		*Quality attributes (1.00)* Amount of sparkles Amount of sugar Nice feeling in mouth Packaging A well-known brand Presence of extra ingredients (caffeine, tea extracts)		*Quality attributes (1.00)* Look (e.g., design, color, size) Quality A well-known brand User-friendly menu Short start-up time User-friendly remote control Recording possibilities (recorder, hard disk) Technical possibilities (HDMI,USB port,…)		*Quality attributes (1.00)* A well-known brand Quality Texture (gel, cream) A nice smell Price-quality relationship Hypoallergenic (= little or no risk at allergic reaction) Working against a specific skin problem (e.g., oily skin, dry skin, redness)	
	Price attribute (-.24) Price		*Price attribute (-.23)* Price		*Price attribute (-.31)* Price		*Price attribute (-.31)* Price	
Consequences	*Benefits (1.00)* Fresh breath Whiter teeth Helps me to look good Enhances my confidence Fresh taste in my mouth Less dental caries Easy to use Makes brushing enjoyable Clean teeth Less dental plaque Helps me feel good Healthy teeth Less dental pain Brand ensures quality	.56 .46 .42 .29 .50 .58 .62 .69 .78 .69 .62 .70 .61 .85	*Benefits (1.00)* Tastes good Thirst-quenching Healthier than other soft drinks Nice feeling drinking this SD Gives me energy I won't get fat Bloated feeling (R) Refreshing Brand ensures quality	.83 .65 .36 .64 .47 .31 .23 .73 .61	*Benefits (1.00)* Easy to use Good picture quality Good sound quality Looks good in my interior Quick start up Allows me to record movies and programs Energy-saving Brand ensures quality Meets my needs	.77 .76 .77 .54 .58 .20 .51 .70 .79	*Benefits (1.00)* Makes me feel good Makes me look good Enhances my confidence Makes my skin feel pleasant Helps keeping skin healthy Applying this DC feels nice Feel clean Refreshing Brand ensures quality	.77 .77 .65 .88 .92 .66 .72 .72 .77
	Sacrifices (-.32) Budget-friendly (R) Saves me money (R)	.96 .92	*Sacrifices (-.14)* Budget-friendly (R) Saves me money (R)	.97 .92	*Sacrifices (-.29)* Budget-friendly (R) Saves me money (R)	.97 .92	*Sacrifices (-.40)* Budget-friendly (R) Saves me money (R)	.96 .96

Notes. The numbers shown are outer loadings.

Table 9 Questionnaire

Satisfaction (adapted from Anderson et al. 1994)
Please indicate the extent to which you are satisfied or dissatisfied with your toothpaste/day cream/soft drink/DVD player. (11-point scale following Wirtz & Lee 2003)
Repurchase intentions (adapted from Zeithaml et al. 1996)
Please indicate how likely it is that you would… 1. Consider this toothpaste/day cream/soft drink/DVD player your first choice to buy toothpaste/day cream/soft drink/DVD player. 2. Buy this toothpaste/day cream/soft drink/DVD player again when you need toothpaste/day cream/soft drink/DVD player. 3. Doubt about buying this toothpaste/day cream/soft drink/DVD player again.
Word of mouth (adapted from Zeithaml et al. 1996)
Please indicate how likely it is that you would… 1. Say positive things about your toothpaste/day cream/soft drink/DVD player to other people. 2. Recommend your toothpaste/day cream/soft drink/DVD player to someone who seeks your advice. 3. Encourage friends and relatives to buy this toothpaste/day cream/soft drink/DVD player.

Table 9 Questionnaire (continued)

Gale (1994)

The items (attributes) are presented in Table 8.

Importance
Please indicate how important each of the following characteristics of toothpaste/day cream/soft drink/DVD players is to you.

Performance (following Babakus et al. 2004)
Please indicate how you evaluate your toothpaste/day cream/soft drink/DVD player relative to the competition.

Woodruff and Gardial (1996)

The items (consequences) are presented in Table 8.

Dodds, Monroe and Grewal (1991)	**TP**		**SD**		**DVD**		**DC**	
This X is a very good value for the money	.80	**	.81	**	.88	**	.82	**
At the price shown this X is very economical.	.73	**	.82	**	.69	**	.78	**
This is a good buy.	.82	**	.86	**	.89	**	.88	**
The price shown for this X is unacceptable. (R)	.42	**	.53	**	.44	**	.65	**
This X appears to be a bargain.	.37	**	.68	**	.43	**	.51	**
λ_1	*2.27*		*2.93*		*2.57*		*2.89*	
λ_2	*1.14*		*.88*		*1.03*		*.90*	
α			*.81*				*.81*	
AVE			*.56*				*.55*	

Notes. The numbers shown in the right-hand columns are outer loadings and the numbers shown in the last four rows are construct-level psychometric properties. (R) = reverse scored; X stands for toothpaste, soft drink, DVD player or day cream. TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream. *p < .10 **p < .05

Table 9 Questionnaire (continued)

Holbrook (1999)	**TP**		**SD**		**DVD**		**DC**	
Social value (adapted from Sweeney & Soutar 2001)								
Helps me to feel acceptable.	.94	**	.95	**	.98	**	.85	**
Improves the way I am perceived.	.95	**	.97	**	.99	**	.94	**
Makes a good impression on others.	.91	**	.92	**	.81	**	.95	**
Gives me social approval.	.91	**	.95	**	.95	**	.90	**
λ_1	*3.45*		*3.60*		*3.55*		*3.34*	
λ_2	*.23*		*.25*		*.30*		*.32*	
α	*.95*		*.96*		*.96*		*.93*	
AVE	*.86*		*.90*		*.87*		*.83*	
Second-order factor loadings	*.09*		*.03*		*-.14*		*.21*	
Play (adapted from Petrick 2002)								
Makes me feel good.	.82	**	.82	**	.58	**	.80	**
Gives me pleasure.	.91	**	.90	**	.81	**	.93	**
Gives me a sense of joy.	.95	**	.95	**	.90	**	.94	**
Makes me feel delighted.	.91	**	.96	**	.85	**	.94	**
Gives me happiness.	.91	**	.95	**	.82	**	.93	**
λ_1	*4.09*		*4.20*		*3.42*		*4.14*	
λ_2	*.56*		*.42*		*.76*		*.52*	
α	*.94*		*.95*		*.88*		*.95*	
AVE	*.81*		*.84*		*.64*		*.83*	
Second-order factor loadings	*.39*		*.47*		*.35*		*.56*	

Table 9 Questionnaire (continued)

Excellence (adapted from Oliver 1997)								
The quality is excellent.	.87	**	.92	**	.83	**	.88	**
One of the best regarding quality.	.93	**	.94	**	.91	**	.92	**
High quality product.	.95	**	.94	**	.91	**	.93	**
Superior compared to competing products.	.84	**	.85	**	.81	**	.82	**
λ_1	*3.23*		*3.35*		*3.00*		*3.17*	
λ_2	*.41*		*.36*		*.51*		*.48*	
α	*.92*		*.93*		*.89*		*.91*	
AVE	*.81*		*.84*		*.75*		*.79*	
Second-order factor loadings	*.99*		*.98*		*.91*		*.96*	
Aesthetic value (based on laddering interviews)								
I think I look good by using this TP/DC/SD.	.59	**	.96	**			.95	**
I think my teeth/skin is beautiful by using this TP/DC.	.93	**					.96	**
I think I have a fresh breath by using this TP.	.88	**						
I think I have a nice figure by drinking this SD.			.93	**				
I think this DVD player is beautiful.					.92	**		
This DVD player looks good in my interior.					.92	**		
This DVD player has a beautiful design.					.95	**		
This DVD player has a beautiful color.					.93	**		
λ_1			*1.79*		*3.46*		*1.82*	
λ_2			*.21*		*.22*		*.18*	
α			*.88*		*.95*		*.90*	
AVE			*.89*		*.86*		*.91*	
Second-order factor loadings	*.65*		*.21*		*.55*		*.79*	

Table 9 Questionnaire (continued)

Efficiency (adapted from Ruiz et al. 2008)								
The price is high (R)	.05		.78		-.15		.05	
The effort I expend to receive X is high (R)	.35	*	-.55		.07		.24	
This TP/DC/DVD is easy to use	.98	**			.86	**	.99	**
Starting up the DVD player requires a lot of time (i.e., the time between turning on the DVD player and the moment the DVD starts). (R)					.48	**		
Second-order factor loadings	*.42*		*.00*		*.68*		*.47*	

*Notes. The numbers shown in the right-hand columns are outer loadings and the numbers shown in the last four rows are construct-level psychometric properties. (R) = reverse scored; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream. *p < .10 **p < .05*

2.4.3 Parameter estimation

A Partial Least Squares approach to Structural Equation Modeling (PLS-SEM) was used to analyze the data. PLS-SEM was the preferred approach in this study for at least two reasons. First, in line with this chapter's objective to evaluate the predictive ability of the different value measurement methods, an estimation approach that ensures optimal prediction accuracy was desirable (Hair et al. 2011). Second, PLS-SEM allowed estimating measurement models that include both formative and reflective indicators. This is particularly relevant, as previous research has indicated that value measurement models include both types of measurement (Ruiz et al. 2008). To assess the statistical significance of the parameter estimates, percentile bootstrap confidence intervals were constructed based on 5000 samples (Hair et al. 2011; Preacher & Hayes 2008). Appendix B provides more information about the PLS-SEM approach.

2.4.4 Measurement model structures

Dodds et al. 's (1991) approach. Based on its original scale development process and further applications in the literature, Dodds et al.'s (1991) measurement scale was specified as a first-order reflective measurement model.

Gale's (1994) approach. With respect to the customer value analysis suggested by Gale (1994), the measurement model structure was based on Gale's (1994) basic premise that customer value equals the difference between a weighted quality score (market-perceived quality) and a weighted price score (market-perceived price). Both scores were determined by multiplying the relative performance score (relative price) for each quality (price) attribute by its normalized weight and summing these weighted scores over the relevant quality (price) attributes. Subsequently, following the rationale of Jarvis, MacKenzie, and Podsakoff (2003), this market-perceived quality score and market-perceived price score were used as formative indicators of the customer value construct.

Woodruff and Gardial's (1996) approach. Concerning the customer value measurement approach recommended by Woodruff and Gardial

(1996), it is important to distinguish between the first- and second-order constructs. According to research by Ruiz et al. (2008) and Lin et al. (2005), the benefit and sacrifice components (first-order constructs) associated with this approach should be considered formative components of customer value, since customers make an explicit mental trade-off between these components to arrive at an overall value perception (second-order construct). The two first-order constructs – benefits and sacrifices – were modeled according to the guidelines developed by Jarvis et al. (2003). Specifically, the benefits consist of diverse positive consequences mentioned during the laddering interviews and, hence, is modeled formatively. Alternatively, the sacrifice construct is measured by two reflective indicators reflecting the negative consequences of the product. To model customer value as a second-order construct, the two-stage approach was used (Henseler et al. 2007; Reinartz, Krafft, & Hoyer 2004; Ringle, Sarstedt, & Straub 2012; Wilson & Henseler 2007) In the first stage, the latent variable scores were estimated without the second-order construct (customer value) present but with all of the first-order constructs (benefits and sacrifices) in the model. In the second stage, the latent variable scores of the first-order factors (benefits and sacrifices) were used as indicators of the second-order construct (customer value) in a separate higher-order PLS path model.

Holbrook 's (1999) approach. Regarding the customer value typology specified by Holbrook (1999), customer value can be considered a higher-order construct consisting of multiple components (Gallarza & Gil-Saura 2006; Sánchez-Fernández et al. 2009). Thus, each of Holbrook's (1999) value types can be considered a first-order construct measured either by reflective or formative indicators. In this case, because the different value types are not interchangeable and necessarily correlated, and the direction of causality is from each of the value types to the overall customer value construct, these value types should be considered formative components of customer value (Jarvis et al. 2003). To model customer value as a second-order construct, the two-stage approach described above was used (Henseler et al. 2007; Reinartz et al. 2004; Wilson & Henseler 2007).

2.5 Results

Table 10 to 13 present the correlations, means, and standard deviations for the value measures (or their dimensions), cumulative satisfaction, repurchase intentions, and word of mouth across each of the settings.

2.5.1 Measurement model: Psychometric properties

All relevant psychometric properties of the constructs under study are presented in Table 8 and Table 9. Furthermore, the PLS path models used for this study and an extensive report of the PLS-SEM results can be found in Appendix C.

The analyses confirmed favorable psychometric properties for the four methods, with the exception of Dodds et al.'s (1991) approach in two settings. In particular, the eigenvalues of the construct's inter-item correlation matrix revealed that the scale suggested by Dodds et al. (1991) is not unidimensional in the case of think offerings, and this applies to both low-involvement (i.e., toothpaste) and high-involvement (i.e., DVD player) products. Overall, with the exception of the Dodds et al. (1991) method for think offerings, the four different methods are capable of assessing customer value perceptions in a reliable and valid manner across different settings.

Table 10 Summary of correlations, means and standard deviations for Dodds et al.'s method

Think							
	VAL	SAT	REP	WOM	*M*	*SD*	
VAL	—	.48**	.47**	.45**	6.65	1.28	High involv.
SAT	.34**	—	.52**	.56**	7.78	1.64	
REP	.33**	.43**	—	.73**	6.41	1.65	
WOM	.42**	.38**	.52**	—	6.26	1.75	
M	5.89	7.91	7.14	6.07			
SD	1.06	1.42	1.56	1.81			

Low involvement

Feel							
	VAL	SAT	REP	WOM	*M*	*SD*	
VAL	—	.32**	.27**	.35**	6.24	1.46	High involv.
SAT	.41**	—	.64**	.50**	8.26	1.23	
REP	.33**	.55**	—	.58**	7.29	1.53	
WOM	.34**	.57**	.55**	—	6.84	1.48	
M	5.56	8.38	7.60	6.44			
SD	1.59	1.24	1.38	1.95			

Low involvement

Notes. Correlations for the high involvement offerings are presented above the diagonal, and correlations for the low involvement offerings are presented below the diagonal. Means and standard deviations for the high involvement offerings are presented in the vertical columns, and means and standard deviations of the low involvement offerings are presented in the horizontal rows. VAL = Value; SAT = Satisfaction; REP = Repurchase Intentions; WOM = Word of Mouth.
*$p < .05$ **$p < .01$

Table 11 Summary of correlations, means and standard deviations for Gale's method

Think								
	MPQ	MPP	SAT	REP	WOM	*M*	*SD*	
MPQ	—	-.35**	.43**	.51**	.58**	6.15	1.12	High involvement
MPP	-.44**	—	-.13	-.14 *	-.18**	3.88	1.51	
SAT	.46**	-.17*	—	.59**	.69**	7.80	1.71	
REP	.37**	.00	.59**	—	.62**	6.30	1.55	
WOM	.49**	-.15*	.54**	.61**	—	6.25	1.90	
M	6.28	4.21	8.31	7.24	6.30			
SD	1.14	1.32	1.27	1.65	1.96			

Low involvement

Feel								
	MPQ	MPP	SAT	REP	WOM	*M*	*SD*	
MPQ	—	-.36**	.45**	.45**	.46**	6.78	1.26	High involvement
MPP	-.15*	—	-.15*	-.14	-.12	4.08	1.69	
SAT	.37**	-.18*	—	.65**	.55**	8.46	1.28	
REP	.35**	-.05	.46**	—	.57**	7.44	1.43	
WOM	.49**	-.07	.47**	.50**	—	6.90	1.57	
M	6.61	4.33	8.69	7.79	6.78			
SD	1.06	1.76	1.00	1.23	1.62			

Low involvement

Notes. Correlations for the high involvement offerings are presented above the diagonal, and correlations for the low involvement offerings are presented below the diagonal. Means and standard deviations for the high involvement offerings are presented in the vertical columns, and means and standard deviations of the low involvement offerings are presented in the horizontal rows. MPQ = Market-Perceived Quality; MPP = Market-Perceived Price; SAT = Satisfaction; REP = Repurchase Intentions; WOM = Word of Mouth.
*$p < .05$ **$p < .01$

Table 12 Summary of correlations, means and standard deviations for Woodruff and Gardial's method

Think								
	BEN	SAC	SAT	REP	WOM	*M*	*SD*	
BEN	—	-.22**	.65**	.48**	.70**	6.58	1.08	High involvement
SAC	-.33**	—	-.14*	-.17*	-.15*	4.00	1.74	
SAT	.50**	-.34**	—	.55**	.68**	7.70	1.69	
REP	.43**	-.01	.51**	—	.65**	6.28	1.66	
WOM	.51**	-.18**	.46**	.55**	—	6.43	1.81	
M	6.28	4.73	7.96	7.07	5.98			
SD	1.26	1.87	1.30	1.61	1.81			

Low involvement

Feel								
	BEN	SAC	SAT	REP	WOM	*M*	*SD*	
BEN	—	-.34**	.59**	.50**	.70**	7.16	1.25	High involvement
SAC	-.27**	—	-.24**	-.17*	-.32**	4.19	2.33	
SAT	.61**	-.02	—	.53**	.54**	8.35	1.26	
REP	.52**	-.06	.60**	—	.59**	7.40	1.44	
WOM	.50**	-.19**	.56**	.53**	—	7.03	1.40	
M	6.19	5.27	8.16	7.50	6.33			
SD	1.10	2.19	1.22	1.35	1.79			

Low involvement

Notes. Correlations for the high involvement offerings are presented above the diagonal, and correlations for the low involvement offerings are presented below the diagonal. Means and standard deviations for the high involvement offerings are presented in the vertical columns, and means and standard deviations of the low involvement offerings are presented in the horizontal rows. BEN = Benefits; SAC = Sacrifices; SAT = Satisfaction; REP = Repurchase Intentions; WOM = Word of Mouth.
*p < .05 **p < .01

Table 13 Summary of correlations, means and standard deviations for Holbrook's method

	Think										
	AEST	EFF	EXC	PLAY	SOC	SAT	REP	WOM	*M*	*SD*	
AEST	—	.02	.47**	.55**	.25**	.34**	.23**	.33**	5.36	1.90	High involvement
EFF	.10	—	.08	-.12	-.33**	.24**	.22**	.11	6.90	1.31	
EXC	.51**	.18**	—	.35**	.09	.54**	.47**	.53**	5.96	1.46	
PLAY	.69**	-.05	.30**	—	.44**	.14*	.02	.21**	4.46	1.69	
SOC	.49**	-.27**	.04	.57**	—	-.08	-.13	-.01	2.06	1.59	
SAT	.41**	.29**	.70**	.23**	.03	—	.54**	.56**	7.94	1.34	
REP	.36**	.23**	.73**	.16*	-.09	.67**	—	.63**	6.15	1.49	
WOM	.52**	.10	.69**	.42**	.23**	.59**	.59**	—	6.19	1.69	
M	5.61	6.96	6.67	4.30	2.71	8.01	7.18	6.10			
SD	1.79	1.25	1.47	2.14	1.90	1.73	1.70	1.82			
	Low involvement										

Notes. Correlations for the high involvement offerings are presented above the diagonal, and correlations for the low involvement offerings are presented below the diagonal. Means and standard deviations for the high involvement offerings are presented in the vertical columns, and means and standard deviations of the low involvement offerings are presented in the horizontal rows. AEST = Aesthetics; EFF = Efficiency; EXC = Excellence; PLAY = Play; SOC = Social Value; SAT = Satisfaction; REP = Repurchase Intentions; WOM = Word of Mouth.
*p < .05 **p < .01

Table 13 Summary of correlations, means and standard deviations for Holbrook's method (continued)

	Feel										
	AEST	EFF	EXC	PLAY	SOC	SAT	REP	WOM	*M*	*SD*	
AEST	—	.16*	.60**	.56**	.26**	.49**	.46**	.52**	6.52	1.67	High involvement
EFF	-.19**	—	.05	-.06	-.35**	.20**	.21**	.06	6.97	1.36	
EXC	.22**	-.12	—	.40**	.23**	.67**	.57**	.52**	6.72	1.36	
PLAY	.52**	-.17*	.35**	—	.48**	.31**	.30**	.43**	5.60	1.92	
SOC	.59**	-.33**	.09	.40**	—	.07	.04	.26**	3.27	1.97	
SAT	.13	.02	.66**	.25**	-.01	—	.76**	.58**	8.21	1.21	
REP	-.04	-.07	.53**	.16*	-.11	.55**	—	.67**	7.39	1.50	
WOM	.24**	-.03	.51**	.42**	.15*	.59**	.61**	—	6.81	1.56	
M	2.59	6.39	6.82	4.29	2.14	8.38	7.51	6.08			
SD	1.93	1.45	1.65	2.13	1.72	1.36	1.58	2.29			
	Low involvement										

Notes. Correlations for the high involvement offerings are presented above the diagonal, and correlations for the low involvement offerings are presented below the diagonal. Means and standard deviations for the high involvement offerings are presented in the vertical columns, and means and standard deviations of the low involvement offerings are presented in the horizontal rows. AEST = Aesthetics; EFF = Efficiency; EXC = Excellence; PLAY = Play; SOC = Social Value; SAT = Satisfaction; REP = Repurchase Intentions; WOM = Word of Mouth.
*p < .05 **p < .01

2.5.2 Structural model: Predictive ability

The performance of the four customer value measurement methods with regard to their predictive ability of customer satisfaction, repurchase intentions, and word of mouth, was evaluated by means of the multiple correlation coefficient R. The R coefficient is defined as the correlation between the actual (y) and the predicted value ($\hat{y}$) of the dependent variable. Thus, $R = r_{y\hat{y}}$. The following hypothesis is presented:

$$H_0: r_{(y\hat{y})D} = r_{(y\hat{y})G} = r_{(y\hat{y})W} = r_{(y\hat{y})H}$$

$$H_A: \text{at least one } r_{(y\hat{y})} \text{ is different}$$

The letters D, G, W, and H refer to the value measurement methods of Dodds et al. (1991), Gale (1994), Woodruff and Gardial (1996), and Holbrook (1999), respectively. The variable y ($\hat{y}$) represents the actual (predicted) value of satisfaction, repurchase intentions, or word of mouth.

As each respondent filled out a questionnaire containing only one of the different value measurement methods under study, the four relevant correlation coefficients can be considered independent of one another. Thus, testing the null hypothesis involves testing whether four independent sample correlation coefficients are statistically equal. For this purpose, Zar (1996) has proposed the test presented in Equation 2.1.

$$\chi^2_{\alpha,k-1} = \sum_{i=1}^{k}(n_i - 3)z_i^2 - \frac{\left[\sum_{i=1}^{k}(n_i - 3)z_i\right]^2}{\sum_{i=1}^{k}(n_i - 3)} \qquad (2.1)$$

where:

z_i = the Fisher z-transformation of correlation coefficient r_i
n_i = the sample size on which r_i is based
k = the number of independent correlation coefficients

If the null hypothesis of equal independent correlation coefficients was rejected, it was of interest to determine which of the k correlation coefficients were different from the others. Therefore, pairwise comparisons based on a Tukey-type test were used. This procedure implies that, for each pair of correlation coefficients r_A and r_B, the following null hypothesis was tested.

$$H_0: r_A = r_B$$

$$H_A: r_A \neq r_B$$

To test this null hypothesis, the following test was used:

$$q = \frac{z_B - z_A}{SE} \tag{2.2}$$

with $$SE = \sqrt{\frac{1}{2}\left(\frac{1}{n_A - 3} + \frac{1}{n_B - 3}\right)}$$

The q statistic has a known distribution (see Table B5 of Zar 1996, which lists the critical values of the accompanying q distribution, i.e., $q_{\alpha,n,k}$).

Table 14 displays the R-values (i.e., the square root of the coefficient of determination) for each of the settings as well as a pairwise comparison between these R-values. The R^2-values can be found in parentheses. All R-values (R^2-values) were significantly different from zero, meaning that all four value measurement methods were capable of explaining variance in cumulative satisfaction, repurchase intentions, and word of mouth. Note that, for toothpaste and DVD player, the R- and R^2-values were not calculated for the Dodds approach because the scale did not possess favorable psychometric properties.

Table 14 Comparison between the coefficients of determination

		Satisfaction					Word of Mouth					Repurchase Intention			
		D	**G**	**W**	**H**		**D**	**G**	**W**	**H**		**D**	**G**	**W**	**H**
Toothpaste	**D**					**D**					**D**				
Think - Low	**G**		.46(.21)		**	**G**		.61(.37)		*	**G**		.62(.38)		**
	W			.56(.31)	**	**W**			.63(.40)		**W**			.62(.38)	**
	H		**	**	.71(.50)	**H**		*		.72(.52)	**H**		**	**	.78(.61)
		D	**G**	**W**	**H**		**D**	**G**	**W**	**H**		**D**	**G**	**W**	**H**
Soft drink	**D**	.47(.22)		**	**	**D**	.60(.36)				**D**	.63(.39)			
Feel - Low	**G**		.38(.14)	**	**	**G**		.58(.33)			**G**		.55(.31)		
	W	**	**	.74(.55)		**W**			.59(.35)		**W**			.67(.45)	
	H	**	**		.67(.45)	**H**				.62(.39)	**H**				.64(.40)
		D	**G**	**W**	**H**		**D**	**G**	**W**	**H**		**D**	**G**	**W**	**H**
DVD player	**D**					**D**					**D**				
Think - High	**G**		.43(.19)	**	**	**G**		.76(.58)		**	**G**		.69(.48)		
	W		**	.73(.54)	*	**W**			.76(.58)	**	**W**			.61(.38)	
	H		**	*	.62(.38)	**H**		**	**	.62(.38)	**H**				.61(.37)
		D	**G**	**W**	**H**		**D**	**G**	**W**	**H**		**D**	**G**	**W**	**H**
Day cream	**D**	.42(.18)		**	**	**D**	.56(.32)		**		**D**	.65(.43)			*
Feel - High	**G**		.45(.20)	*	**	**G**		.60(.36)	*		**G**		.73(.53)		
	W	**	*	.62(.38)		**W**	**	*	.73(.54)		**W**			.67(.45)	
	H	**	**		.68(.47)	**H**				.64(.41)	**H**	*			.77(.60)

Notes. This table displays the R-values with the R^2-values in parenthesis. D = Dodds; G = Gale; W = Woodruff and Gardial; H = Holbrook.
*$p < .10$ **$p < .05$

Although in some instances, the one-dimensional approach of Dodds et al. (1991) performed equally well as the multi-dimensional methods, it is important to note that it never outperformed them. Thus, in general, Hypothesis 1 is supported. Second, it is interesting to note that the best-performing methods - those of Woodruff and Gardial (1996) and Holbrook (1999) - assess benefits and sacrifices at the consequence level, which supports Hypothesis 2.

In aggregate, these results indicate that the methods proposed by Woodruff and Gardial, and Holbrook are the best choice to measure value from a strictly methodological point of view. It should be noted, however, that although both approaches performed well in a general sense, which of these two methods is best depends on the research setting. For feel products, these two methods performed equally well in predicting all three outcome variables. For think products, this was not the case. Regarding low-involvement think offerings, the method of Holbrook (1999) is the safest choice, as its predictive ability was at least equal to that of Woodruff and Gardial's (1996) approach, whereas, for high-involvement offerings, the opposite holds. Here, the method of Woodruff and Gardial (1996) is preferred, as its performance was at least equal to that of Holbrook's (1999) method.

2.5.3 Practicality

This section subjectively assesses the practicality of each measurement method from both the researcher's and the respondent's perspectives. Key criteria within the assessment are ease of use, questionnaire length, and time/effort required to complete. Dodds' et al.'s (1991) approach is straightforward and simple, since it consists of only five existing items. Furthermore, it can be used in almost every setting without major adjustments. Gale's (1994) method is fairly simple, but, since it requires a combination of performance and importance weights, it is time consuming for both the researcher and the respondent to perform properly (Gale 1994). In some cases, the items used in Gale's method may be known but, when these attributes are unknown, interviews are necessary to generate them. This is a major drawback with regard to practicality because it is time

consuming for both the researcher and the respondent. The latter issue is also one of the major drawbacks of Woodruff and Gardial's (1996) method. Because of its focus on the consequences instead of the attributes, interviews are almost always required to generate items for this method. Furthermore, questionnaire length can be an issue when applying this method. Holbrook's (1999) approach consists of various value types. Some of these value types have an existing scale; for example, to measure social value, one can use the scale of Sweeney and Soutar (2001). However, for other value types, interviews could be necessary to generate items. Furthermore, the use of various value types, each having its own scale, results in a lot of items, which negatively affects questionnaire length.

To compare the measurement methods with regard to the effect of questionnaire length, an additional study was conducted in which objective response times and the perceived time and effort required to fill out the questionnaire were assessed (the items are presented in Table 15). The setting of this additional study was toothpaste and the same questionnaire as in the previous study was used. A between-subjects design was used to avoid carry-over effects among the different value measurement approaches. The sample consisted of 310 undergraduate students of a large North-American university.

The results of this study are presented in Table 15. With regard to the objective time required to fill out the questionnaire, a significant difference was found between the various methods ($F = 35.32$; $p < .001$). Pairwise analyses showed that the scale used by Dodds et al. (1991) required significant less time to complete than the other methods (all p-values $< .001$). However, regarding the respondent's perceptions of time and effort, no significant differences were found between the four methods (see F-values in Table 15). Thus, although Dodds et al.'s (1991) method has the least items and requires the least time to complete, this is not reflected in the respondent's perceived effort and time.

Table 15 Results extra study about time and effort

	Dodds et al. (1991) n = 81		Gale (1994) n = 80		Woodruff and Gardial (1996) n = 68		Holbrook (1999) n = 81		Results ANOVA
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F (p-value)*
Objective time (in seconds)	27.02	15.30	76.14	47.38	78.60	41.16	81.56	44.31	35.32 (.00)
Perception of time (9-point scales)									
How much time was required from you to fill out this survey? very little time - a great deal of time	1.95	1.26	2.10	1.38	1.96	1.41	2.05	1.45	.22 (.88)
The time required to fill out this survey is… very low - very high	1.89	1.23	2.16	1.38	2.00	1.41	2.09	1.48	.58 (.63)
Perception of effort (9 point scales)									
It was difficult for me to fill out the survey.	1.95	1.80	2.30	1.80	2.19	1.93	2.64	2.35	1.69 (.17)
I had to concentrate a lot while filling out the survey.	1.96	1.74	2.51	1.97	2.35	1.98	2.46	2.19	1.27 (.28)
I had to think very hard about answering some questions.	2.07	1.92	2.43	1.73	2.26	1.85	2.35	1.96	.52 (.67)
How much effort was required from you to fill out this survey? very little effort - a great deal of effort	2.15	1.58	2.71	1.78	2.41	1.93	2.35	1.59	1.49 (.22)
The effort required to fill out this survey is… very low - very high	1.88	1.21	2.38	1.55	2.29	1.66	2.10	1.45	1.82 (.14)

2.5.4 Actionability

As a final comparison, the relative actionability of the four measurement approaches was evaluated. Actionability refers to the degree to which the methods yield information that is relevant for diagnostic purposes or easily translated into actionable strategies. Methods that prioritize attributes or consequences therefore would be more actionable than methods that do not. As an example, a problem with Dodds et al.'s (1991) approach is that "you know how well the organization is rated for value, but no specific direction is given how one can improve it" (Petrick 2002). Thus, while the Dodds et al. measure scored high in practicality, there is trade-off in that it is low in actionability.

Gale's (1994) method, on the other hand, clearly identifies directions for improvement. Since it is based on a combination of importance and relative performance, it is fairly easy to discern a product's strengths and weaknesses (Gale 1994). Furthermore, in his book *'Managing customer value. Creating quality and service that customers can see'*, Gale (1994) offers various practical guidelines and tools to analyze the data, such as a customer value map and a head-to-head chart. "The book's approach to value is a good one, and it's well presented in a way that management can grasp" (Michael J. Ryan, marketing department chairman at the University of Michigan and a principal at MSI, in Higgins 1999).

However, several authors (e.g., Macdonald et al. 2011; Woodruff 1997; Woodruff & Gardial 1996) have indicated that only focusing on attributes (e.g., Gale's approach) is not enough. What customers really desire are not the attributes but the consequences resulting from product use (Lusch & Vargo 2006). Furthermore, "a substantive, radical, and strategically sustainable advantage is more likely to result when organizations step back from a narrow focus on attribute improvement and consider the broader issues of consequence and value delivery" (Woodruff & Gardial 1996, p. 80). Thus, from this broader perspective on value, consequence-based methods, such as the methods of Woodruff and Gardial (1996) and Holbrook (1999), should be used.

According to Sánchez-Fernández and Iniesta-Bonillo (2007), Holbrook's approach has made an important contribution to the nature of customer value and is the most complete perspective of the value construct, because it contains more sources of customer value than do other approaches. Holbrook's typology enhances our understanding of the nature of value and offers a clear, efficient and easily comprehensible model for researchers (Bevan & Murphy 2001). Smith (1999) points to the useful contribution of the typology to researchers and practitioners as well. He indicates that the Holbrook typology is "accessible and intuitively appealing" (Smith 1999, p. 149), helps us better understand the benefits customers seek in consumption, and provides us opportunities for improving customer satisfaction. "More specifically, it might suggest alternative approaches to organizing data in marketing research, concept testing in new product development, and message strategy in advertising" (Smith 1999, p. 150).

2.6 Discussion

This aim of this chapter was to compare four commonly used customer value measurement methods (i.e., Dodds, Monroe, & Grewal 1991; Gale 1994; Holbrook 1999; Woodruff & Gardial 1996) with regard to two quantitative (psychometric properties and predictive ability) and two subjective topics (practicality and actionability). A summary of the results can be found in Table 16.

Our findings show that all methods possessed favorable *psychometric properties* and sufficient predictive ability in terms of key marketing outcomes such satisfaction and behavioral intentions in most research settings. The only notable exception concerns think offerings wherein the method of Dodds et al. (1991) displayed poor psychometric properties and, hence, was inadequate to measure the perceived customer value construct in these settings.

Table 16 Comparison between value measurement methods

	Think		Feel	
	Low Involvement	**High Involvement**	**Low Involvement**	**High Involvement**
1. Measurement model: Psychometric properties	Unfavorable psychometric properties for Dodds, Monroe and Grewal's (1991) method. All other methods have favorable psychometric properties.		All methods have favorable psychometric properties.	
2. Structural model: Predictive ability	Holbrooks (1999) method has the best predictive ability	Woodruff and Gardial's (1996) method has the best predictive ability	Woodruff and Gardial's (1996) and Holbrooks (1999) method perform equally well.	
3. Practicality ○ **ease of use** ○ **questionnaire length**	• Dodds, Monroe, and Grewal's (1991) method: ○ Ease of use: Simple and straightforward; Minor adjustments required ○ Questionnaire length: Only five existing items • Gale's (1994) method ○ Ease of use: Fairly simple if attributes are known ○ Questionnaire length: Many items required • Woodruff and Gardial's (1996) method ○ Ease of use: No existing scales; Interviews required to generate items ○ Questionnaire length: Many items required • Holbrooks (1999) method ○ Ease of use: Existing scales for some value types; Others need interviews to generate items ○ Questionnaire length: Many items required			
4. Actionability	• Dodds, Monroe, and Grewal 's (1991) method: No specific directions for improvement • Gale's (1994) method: Directions for improvement based on attributes • Woodruff and Gardial's (1996) method: Directions for improvement based on consequences • Holbrooks (1999) method: Directions for improvement based on value types			

In terms of optimal *predictive ability,* this chapter's results show that multi-dimensional consequence-based methods, such as the Woodruff and Gardial (1996) and Holbrook (1999) methods, are the best choice. This finding is in line with several observations in the literature. Sánchez-Fernández and Iniesta-Bonillo (2007, p. 441) state that:

> Although the unidimensional approaches possess the merit of simplicity, they do not reflect the complexity of consumers' perceptions of value; in particular, they fail to take proper account of the numerous intangible, intrinsic, and emotional factors that form part of the construct.

Likewise, consequence-based methods perform better than attribute-based methods, which is in line with the service-dominant logic proposed by Vargo and Lusch (2004) and more specifically with the concept 'value-in-use'. Vargo and Lusch (2006, p.44) have stated that "there is no value until an offering is used – experience and perception are essential to value determination". This implies that value is fundamentally derived and determined in use (i.e., consequences), rather than in exchange (i.e., attributes) (Vargo, Maglio & Akaka 2008).

In choosing between the methods developed by Woodruff and Gardial (1996) and the one developed by Holbrook (1999), the type of research setting may offer some insight. For low involvement think offerings, the method of Holbrook (1999) has the highest predictive ability. In contrast, for high involvement think offerings, the approach of Woodruff and Gardial (1996) performs best. For feel offerings, the two multi-dimensional consequence-based methods perform equally well, regardless of the level of involvement.

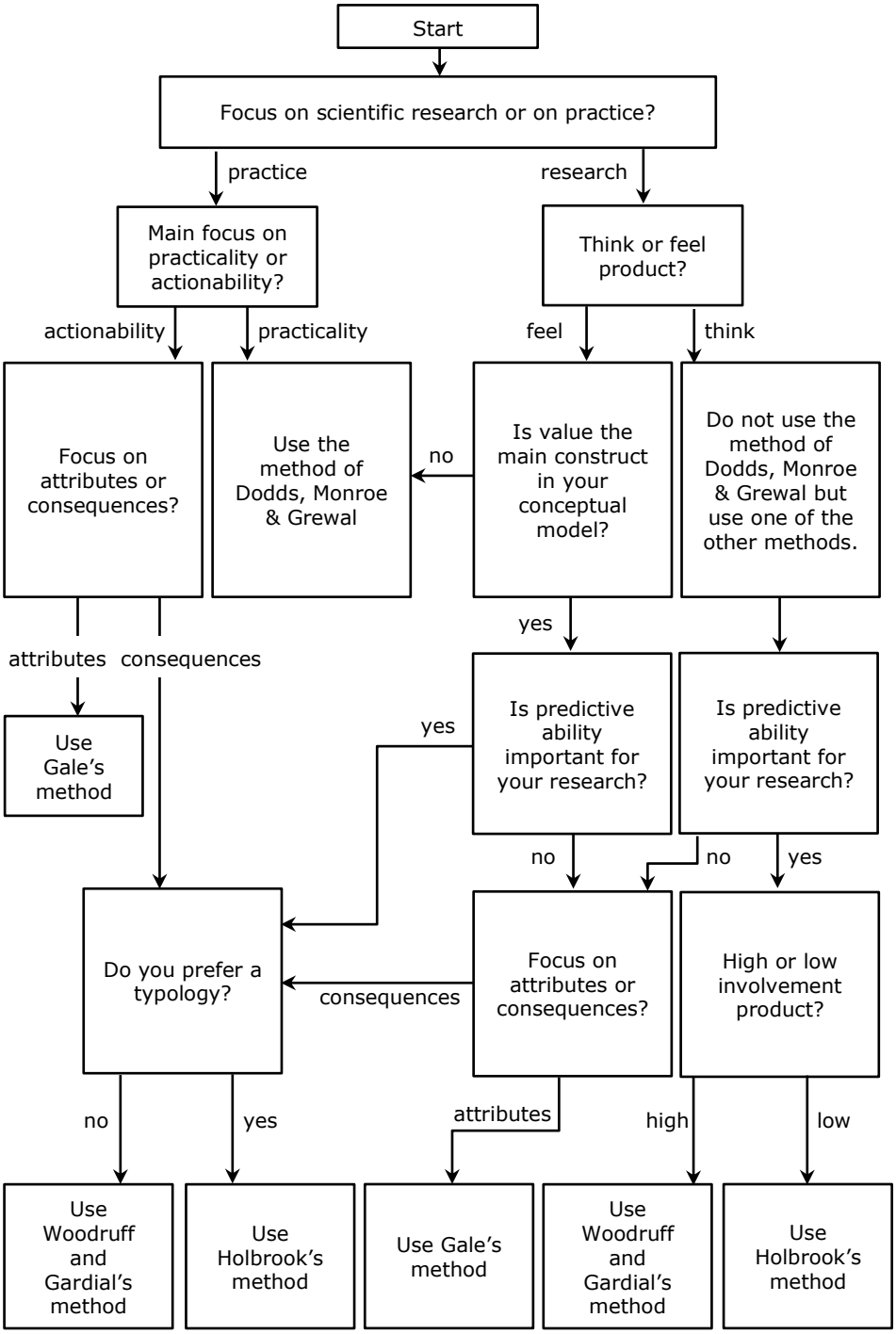
Given that the main advantage of the Dodds et al. (1991) approach is its small (i.e., five) set of items that can be readily adapted to different research settings, it may be an optimal approach to use when *questionnaire length* is an important criterion. Likewise, the Dodds et al. approach may be well suited for studies where perceived value is positioned as one element in an extensive nomological network. However, although Dodds et al.'s method has the least items and requires the least time to complete, the findings of

this chapter show that this is not reflected in the respondent's *perceived effort and time*.

If the research focus is on obtaining *actionable results* or uncovering strategic initiatives to improve customer value, the approach of Dodds et al. (1991) is not desirable. The choice between the methods of Gale (1994), Woodruff and Gardial (1996), and Holbrook (1999) may be guided by attributes or consequences. As it can be expected that firms may know the attributes associated with their own products, Gale's (1994) approach seems to be a good choice for measuring customer value in practice. However, if the company wants to look beyond the mere attributes of its products and it intends to come up with creative and innovative solutions for customer needs, it is better to focus on the consequences (Macdonald et al. 2011; Woodruff 1997) and therefore, the methods of Woodruff and Gardial (1996) and Holbrook (1999) should be used. In the subsequent choice between the methods of Woodruff and Gardial (1996) and Holbrook (1999), it is important to note two characteristics of the Holbrook (1999) conceptualization. First, an advantage of Holbrook's (1999) method is its classification framework that could be very helpful in structuring the different value types in an understandable and intuitively appealing way. Second, existing scales are available for some of Holbrook's value types, thereby limiting the time and effort needed to design a suitable measurement instrument.

To summarize this chapter's findings and provide guidance to those interested in measuring customer value, the prescriptive flowchart presented in Figure 4 was constructed. This flowchart aims to provide direction when choosing an adequate method based on the specific research context.

Figure 4 Flowchart



2.7 Limitations and further research

Although this study contributes to our understanding of customer value and its measurement, several limitations and further research suggestions deserve to be mentioned.

First, other products with more extreme levels of high/low involvement or think/feel could be used. Although the four settings selected for this study differed significantly in terms of involvement (high/low) and type of offering (think/feel), future work could replicate this study's findings in, perhaps, more extreme settings. Also, the applicability across different settings could be explored along other dimensions. One dimension for further testing might be the level of product knowledge, which has been shown to affect customers' means-end associations (e.g., Graeff 1997). In addition, future work could replicate the findings in less tangible settings as well.

Second, the use of a relative value measurement method seems to be of no additional value in terms of predictive ability. Gale's method (1994) is the only one that assesses relative customer value perceptions and this method did not outperform the methods that only include absolute perceptions. However, it could be interesting to measure customer value in a multi-dimensional, consequence-based, relative way. It could be that such a conceptualization performs even better than the methods of Holbrook (1999) and Woodruff and Gardial (1996), since "in a competitive environment the relative approach seems more consistent with the way consumers make purchase decisions" (Babakus et al. 2004, p. 715).

Third, in this study, customer satisfaction, repurchase intentions, and word of mouth were used as criterion variables to assess predictive ability. Although these outcome variables were operationalized in a way that is consistent with the majority of existing academic research, alternative approaches to measure the three outcome variables might yield different results.

Finally, measures of actual behavior, rather than behavioral intentions, could enhance the soundness of this study. Unfortunately, such behavioral data are often difficult and expensive to obtain. In addition, it should be noted

that, although a significant positive association between intention and behavior exists, the conversion of (re)purchase intentions into (re)purchase behavior is moderated by various factors (e.g., Seiders et al. 2005).

Despite these limitations, this study provides a more comprehensive, in-depth understanding of customer value as well as an important tool for managers, since "making customer value strategies work begins with an actionable understanding of the concept itself" (Woodruff 1997, p. 141).

Chapter 3

The Psychological Capital of the customer as a positive resource for encouraging co-production[3]

3.1 Introduction

Although the concept of co-production is not new, there has been a resurging interest in this topic resulting from recent advances in marketing literature (e.g., service-dominant logic) as well as practice (e.g., self-scanning in supermarkets, build-a-bear, success of DIY formats). Co-production implies that the customer engages himself with the supplier's production process and becomes a participant in this process. It is the firm that controls the production process, but he can invite the customer to join this process as a co-producer (Grönroos & Voima 2013). When the customer acts as a co-producer, the outcome of the co-production process is determined partly by the goods and services provided by the firm and partly by the customer's own productive effort (Troye & Supphellen 2012).

The contemporary marketing literature indicates that the customer is always a value creator, since he is the one who has to use the resources provided by the firm (goods and/or services) and integrate them with other resources (goods, services, and/or information) and skills he possesses to transform the potential value of these resources into real value (Grönroos 2008). This implies that the customer is *always* responsible for his own value creation – and thus not only in case of co-production. However, in case of co-production, the customer's resource integrating role enlarges and his responsibility increases (Bendapudi & Leone 2003; Troye & Supphellen 2012). For example, when the customer buys a bookshelf and decides to assemble it himself, he has to use more resources (in terms of time and

[3] This chapter is largely based on: Leroi-Werelds, S. & Streukens, S. The Psychological Capital of the customer as a positive resource for encouraging co-production. (under review)

effort) and more skills (in terms of assembling) than when the firm assembles the bookshelf (Grönroos & Voima 2013).

If co-production implies more effort and time required from the customer, why should the customer choose to co-produce? And, on the other hand, why should a firm offer such co-production options? Previous research (e.g., Bendapudi & Leone 2003; Etgar 2008; Troye & Supphellen 2012; Xie, Bagozzi, & Troye 2008) has indicated that co-production benefits the customer as well as the firm, since co-production frees up labor costs for the organization, enables better customization and customers' need fulfillment, offers opportunities to build customers' self-image and self-identity, and ultimately leads to enhanced customer evaluative judgments. As these benefits can only be obtained if the customer chooses co-production, encouraging customers to co-produce is considered the next frontier in competitive effectiveness (Bendapudi & Leone 2003; Chan et al. 2010).

In line with the notion that a co-producing customer can be considered a partial employee of the organization (Bowers & Martin 2007; Halbesleben & Buckley 2004; Xie et al. 2008), Groth (2005) and Meuter et al. (2005) underscore the importance of applying employee management theories to better understand and encourage co-production. So far, research directed at understanding how to encourage a customer to co-produce in general, as well as the use of employee management theories in the context of co-production in particular, has remained relatively scarce. In light of this research gap, this chapter extends existing research on co-production by introducing customers' Psychological Capital (PsyCap) as a way to encourage customers to co-produce. PsyCap, which comes from the employee management literature and was originally developed by Luthans and Youssef (2004), is a state-like higher-order motivational construct that involves the following positive psychological capacities: self-efficacy, resilience, hope, and optimism. In terms of understanding customers' adoption of co-production initiatives, the value of the PsyCap construct lies in the fact that it is measureable, developable, and able to predict a variety of attitudinal, behavioral, and performance outcomes (Avey et al. 2010; Luthans et al. 2007b). If customers' PsyCap is indeed associated with co-production

adoption, its state-like nature makes it an actionable starting point for the development of strategies to encourage the adoption of co-production initiatives.

In three studies, the role of customers' PsyCap in co-production is examined. Study 1 investigates the relationship between a customer's PsyCap and intention to co-produce. Study 2 examines the role of PsyCap in a larger conceptual model to increase our understanding of the various factors that influence a customer's intention to co-produce. Finally, Study 3 focuses on gaining insight into several factors that lead to an improvement in the level of customers' PsyCap in a co-production setting, which is in line with the malleable, state-like nature of PsyCap.

The contribution of this chapter to the existing literature is fourfold. First, this research represents - based on a thorough investigation of the literature - the first attempt to extend PsyCap to the customer domain. Although PsyCap has been extensively studied in the employee management literature (cf. meta-analysis of Avey et al. 2011), to date, it has not been examined in a co-production setting, where the customer can be considered a partial employee of the organization.

Second, it confirms the significant role of customers' PsyCap, in addition to and separate from extrinsic and intrinsic motivation, in encouraging customers to co-produce. This offers an explanation for why attractive co-production possibilities are underutilized even though customers are intrinsically and/or extrinsically motivated to use them. Being motivated by the benefits of co-production is not a sufficient condition for customer participation; rather, customers need to possess a sufficient level of PsyCap to co-produce.

Third, drawing upon PsyCap's state-like nature, this study provides empirical support regarding the impact of easy-implementable and generally applicable strategies to enhance customers' level of PsyCap. Especially given today's technological possibilities, economically feasible and effective interventions can be developed in order to enhance customers' level of PsyCap which ultimately results in higher co-production intentions.

Fourth, the inclusion of easy-detectable customer characteristics (i.e., gender and experience) in different parts of the chapter underscores their importance as segmentation variables in understanding co-production.

This chapter is organized as follows. First, the concept of Psychological Capital is described. Second, an overview of the three studies is provided. Next, Studies 1, 2 and 3 are discussed sequentially, including their theoretical rationale, hypotheses, methods, and results. Finally, an integrated discussion of the studies' findings as well as their implications and limitations are presented.

3.2 Theoretical background

3.2.1 Background and definition of Psychological Capital

At the end of the 20th century, psychology has been criticized as primarily dedicated to mental illness or the negative side of psychology rather than mental wellness or the positive side of psychology. In light of this criticism, 'positive psychology' was born which is predominantly concerned with using psychological theory, research and intervention to understand positive human functioning (Seligman 1998; Luthans 2002a; 2002b).

From this new wave of research, positive organizational behavior (POB) originated, which refers to "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement" (Luthans 2002a, p. 59). Thus, for a human resource strength to be included in POB, it has to be (1) theory-based, (2) positively oriented, (3) measurable, (4) developable, and (5) related to performance (Luthans 2002b; Luthans et al. 2007b).

Based on the foundations of POB, Psychological Capital or simply PsyCap was presented (Luthans & Youssef 2004). PsyCap is based on the idea that individuals who perceive a situation in a positive way are more likely to flourish (Harms & Luthans 2012). PsyCap involves "one's positive appraisal of circumstances and probability for success based on motivated effort and

perseverance" (Luthans et al. 2007a, p. 550) and can be considered to be an expression of positive psychological well-being (Chen & Lim 2012).

Since PsyCap can be understood as an abstract underlying concept, Luthans and his colleagues have presented PsyCap as a second-order construct and defined the construct in terms of its capacities or manifestations (Luthans et al. 2007b):

> An individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success. (p. 3)

PsyCap has been demonstrated conceptually (Luthans et al. 2007b) and empirically (Luthans et al. 2007a) to be a second-order construct comprised of the shared variance between the four positive psychological capacities (Avey, Luthans, & Jensen 2009; Avey et al. 2011). Based on the work of Judge, Erez, Bono, and Thoresen (2003), Psychological Capital can be considered to be a broad latent concept that is the common source of the four (and perhaps other) state-like capacities. It is the underlying common theme that causes these individual facets to be correlated. This does not imply that the individual facets are completely redundant. There may be parts of each that are unique and important. However, there is considerable redundancy and the latent concept of PsyCap explains this redundancy.

PsyCap exists at a deeper level than its indicators and, in fact, causally influences the different indicators or dimensions. Thus, the individual facets are manifestations or indicators of this deeper underlying construct. Luthans et al. (2007b) indicate that the positive psychological capacities of self-efficacy, hope, optimism, and resilience have been determined to best meet the POB inclusion criteria, but they also note that these four capacities are not meant to represent an exhaustive list. In their book '*Psychological*

Capital: Developing the Human Competitive Edge', they suggest other positively oriented human strengths that can be manifestations of PsyCap and that may have potential for inclusion in the PsyCap theory in the future.

To summarize, PsyCap should be considered as a deeper underlying construct that represents an individual's positive appraisal of the situation and the four individual capacities are manifestations of this underlying core construct.

3.2.2 Manifestations of Psychological Capital

PsyCap manifests itself in four positive psychological capabilities, i.e., self-efficacy, hope, optimism, and resilience. To further appreciate the four different positive psychological capacities, they are defined and reviewed below.

Self-efficacy

Self-efficacy refers to one's conviction (or confidence) in his or her own abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context (Bandura 1997). According to the literature (Bandura 1997; Luthans & Youssef 2004; Luthans et al. 2007b), self-efficacy can be developed through mastery experiences (i.e., experiencing success in accomplishing the tasks in which self-efficacy is to be built), vicarious learning (i.e., observing the successes and failures of relevant others accomplishing the task), positive feedback (i.e., positive task-related feedback expressed by significant others), and physiological or psychological arousal (i.e., the belief that one is physically and psychologically healthy to accomplish the task).

Hope

Luthans and Youssef (2004) have defined hope as a positive mental state that is based on an interactively derived sense of successful agency (willpower or goal-directed energy) and pathways (waypower or planning to meet goals). Or, as formulated by Luthans et al. (2007b), hope involves the willpower to pursue a goal and the ability to identify, clarify, and pursue multiple goals and sub-goals as well as alternative pathways (waypower) to reach those goals. In order to develop hope, the two elements of hope (willpower and waypower) need to be enriched.

Based on the work of Luthans and colleagues (Luthans & Youssef 2004; Luthans et al. 2007b) willpower can be developed by goal-setting (i.e., setting clearly communicated, specific, realistic, measurable and challenging goals), stepping (i.e., breaking down a complex and even overwhelming goal into smaller, manageable sub-goals), participative initiatives (i.e., getting involved and taking control in the decision making) and showing confidence in the employee.

To enhance waypower, approaches that enhance the preparedness of the employee can be used, i.e., preparing the employee for multiple possibilities and exploring alternative courses of action. This can be done by contingency planning, what-if and scenario analysis, or mental rehearsal. Even if all these guidelines are applied, there is a possibility that total goal blockages are encountered. The manager and the employee should realize when and how to re-goal to prevent them from harboring false hope (Luthans & Youssef 2004; Luthans et al. 2007b).

Optimism

Following Seligman (1998) and Carver and Scheier (2002), Avey et al. (2011) have defined optimism as a positive future expectation as well as an explanatory style attributing negative events to external, temporary, and situation specific causes, and positive events to internal, stable efforts, or causes (Avey et al. 2011). The following three approaches have been offered for building optimism (Luthans et al. 2007b; Schneider 2001): leniency for

the past (i.e., reframing and accepting past failures and setbacks), appreciation for the present (i.e., being thankful and satisfied about the positive sides of one's life, also about the things one cannot control), opportunity seeking for the future (i.e., welcoming and embracing the uncertainties of the future as opportunities for growth and success).

Resilience

Finally, resilience is the capacity to rebound or bounce back from adversity, uncertainty, conflict, and failure or even positive but seemingly overwhelming changes such as increased responsibility (Luthans et al. 2007b). Three types of strategies contribute to the development of resilience (Luthans & Youssef 2004; Luthans et al. 2007b; Masten 2001): risk-focused strategies (i.e., reduction and management of the risks that can enlarge the chances of undesired outcomes), asset-focused strategies (i.e., development and increase of the level of assets and resources that can enlarge the chances of positive outcomes, despite the presence of risks), process-focused strategies (i.e., mobilization of effective systems and processes in order to identify, select, develop, employ, and maintain the proper mix of assets in managing pertinent risk factors).

3.2.3 PsyCap in a co-production context

In this chapter, the potential effects of customers' PsyCap in a co-production setting are examined. The value of PsyCap for the customer co-production domain is based on three important characteristics of PsyCap. First, PsyCap is measurable: there is a valid measurement instrument for PsyCap, i.e., the so-called 'PsyCap Questionnaire' or PSQ, which consists of 24 items (Luthans et al. 2007a; 2007b). A valid measurement instrument makes systematic analysis and prediction possible (Luthans et al. 2007b). Second, a very important characteristic of PsyCap is its malleable, state-like nature. The PsyCap literature has explicitly focused on the development of PsyCap and has already mentioned practical guidelines for increasing employees' level of PsyCap. Most of these guidelines can be translated to a co-production setting and, as such, allow the design of truly actionable marketing strategies to stimulate customers' intention to co-produce. Third, PsyCap is firmly rooted

in the employee management and positive organizational behavior literature and has been demonstrated to be related to various employee attitudinal, behavioral, and performance outcomes (Avey et al. 2010; Luthans et al. 2007a; 2008b). However, to date, this positive core construct has not been tested in a co-production setting, where the customer can be considered a partial employee of the organization. This chapter aims to fill this gap by presenting PsyCap as a promising higher-order core construct that organizations can invest in to manage the customer as a partial employee of the organization.

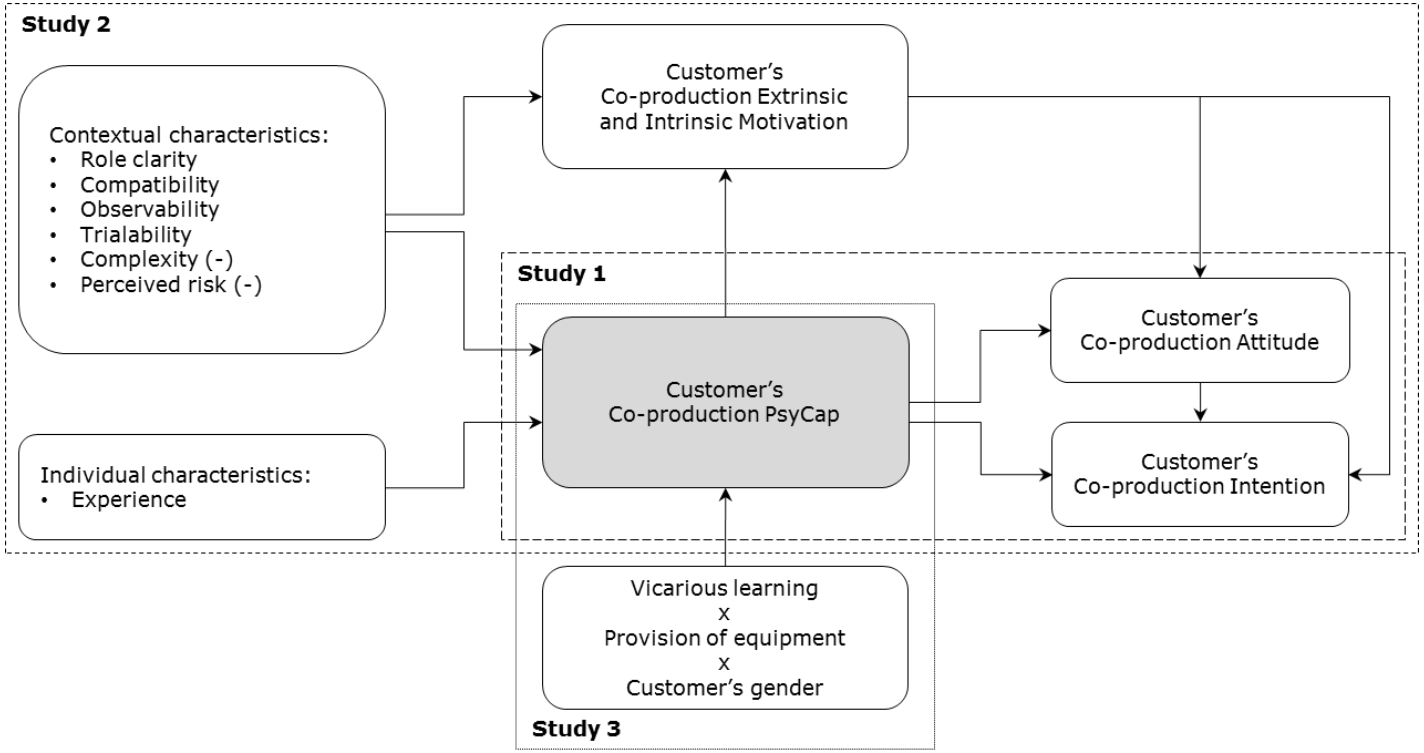
3.3 Overview of studies

This chapter reports the results of three empirical studies on the role of PsyCap in a co-production context. In Study 1 the effect of PsyCap on attitude toward co-production and intention to co-produce was investigated. In Study 2, PsyCap was incorporated in a larger conceptual model based on Social Cognitive Theory. In Study 3, a scenario-based experimental design was used to examine the state-like, developable nature of PsyCap and to gain insight into several factors that lead to an improvement in the level of customers' PsyCap in a co-production setting. Before describing the design and results of the three subsequent studies, the methodological considerations that apply to all three studies are discussed. An overview of the three studies is provided in Figure 5.

3.3.1 Scenario-based research

The following considerations led to the decision to use scenarios for all three studies. The use of scenarios reduces biases which are often related with retrospective self-reports, as a result of memory lapse and rationalization tendencies (Dong, Evans, & Zou 2008; Smith, Bolton, & Wagner 1999). Furthermore, a scenario "makes it easier to operationalize the manipulations, provides control over otherwise unmanageable variables, and facilitates the compression of time by summarizing events that might otherwise unfold over days or weeks" (Dong et al. 2008, p. 129). The scenarios used in this chapter are presented in Appendix D.

Figure 5 Overview of studies



3.3.2 Measurement instrument

Given the large amount of scales used in the three studies, all information on the employed measurement instruments as well as their psychometric properties are included in Table 17. Wherever possible, measurement instruments that have been scientifically validated in previous work were used. All items were evaluated on 9-point scales.

The key construct in this chapter, PsyCap, was measured using the scale developed by Luthans et al. (2007a). Each of the four PsyCap-capacities was represented by six items. For the entire scale, the reader is referred to Table 17.

3.3.3 Analytical approach

The hypotheses were tested using a Partial Least Squares approach to Structural Equations Modeling (PLS-SEM). More specifically, the SmartPLS software package was used. The reasons to opt for PLS-SEM are as follows. First of all, PLS can handle both formative and reflective constructs (Hair et al. 2011). Second, the objective of this chapter is to extent the PsyCap model to the co-production context. Hair et al. (2011) suggest using PLS when the aim of the study is an extension of an existing structural theory, in this case PsyCap theory (Hair et al. 2011). Third, PLS-SEM has less stringent sample size and distributional requirements than covariance-based SEM (Hair et al. 2011).

The statistical significance of the parameter estimates was evaluated by using bootstrapping procedures based on 5000 samples and percentile confidence intervals (Hair et al. 2011; Preacher & Hayes 2008). Appendix B provides more information about the PLS-SEM approach.

Table 17 Questionnaire

	Outer loadings		
Psychological Capital (adapted from Luthans et al. 2007a)	**Study 1**	**Study 2**	**Study 3**
Second-order psychometric properties			
Second-order index of construct	.90	.98	.97
Second-order AVE	.61	.88	.82
First-order constructs			
Self-efficacy			
I feel confident doing this myself.	.91	.97	.97
I have confidence in my abilities to do this myself.	.93	.98	.97
I think I can master this.	.94	.97	.95
I think I can do this myself.	.95	.98	.97
I feel that I have the right capabilities to do this myself.	.93	.98	.96
I am able to do this myself.	.90	.98	.95
Second-order loadings	.90	.96	.94
Construct-level psychometric properties			
Study 1: $\lambda_1 = 5.15$; $\lambda_2 = .33$; $\alpha = .97$; AVE = .86			
Study 2: $\lambda_1 = 5.74$; $\lambda_2 = .09$; $\alpha = .99$; AVE = .96			
Study 3: $\lambda_1 = 5.57$; $\lambda_2 = .14$; $\alpha = .98$; AVE = .93			
Resilience			
I do not give up when something goes wrong.	.76	.91	.90
I can handle setbacks calmly.	.76	.92	.88
When I have a setback, I have no trouble recovering from it.	.87	.95	.94
I am not easily stressed with this task.	.72	.87	.84
I can get through difficulties because I've experienced difficulty before.	.89	.93	.90
I will manage one way or another.	.65	.88	.82
Second-order loadings	.75	.91	.90
Construct-level psychometric properties			
Study 1: $\lambda_1 = 3.70$; $\lambda_2 = .88$; $\alpha = .87$; AVE = .61			
Study 2: $\lambda_1 = 4.98$; $\lambda_2 = .35$; $\alpha = .96$; AVE = .83			
Study 3: $\lambda_1 = 4.67$; $\lambda_2 = .55$; $\alpha = .94$; AVE = .78			

Table 17 Questionnaire (continued)

Willpower	**Study 1**	**Study 2**	**Study 3**
I see myself as being someone who can accomplish this successfully.	.90	.96	.96
I begin this task with a lot of courage.	.79	.96	.94
I think I can accomplish this task successfully.	.94	.98	.98
Second-order loadings	.92	.96	.95
Construct-level psychometric properties			
Study 1: $\lambda_1 = 2.32$; $\lambda_2 = .52$; $\alpha = .85$; AVE = .77			
Study 2: $\lambda_1 = 2.80$; $\lambda_2 = .12$; $\alpha = .97$; AVE = .93			
Study 3: $\lambda_1 = 2.76$; $\lambda_2 = .17$; $\alpha = .96$; AVE = .92			
Waypower			
If I should find myself in a jam, I could think of many ways to get out of it.	.91	.96	.96
There are lots of ways around any problem that I will face.	.79	.96	.94
I can think of many ways to accomplish this.	.87	.92	.91
Second-order loadings	.66	.93	.85
Construct-level psychometric properties			
Study 1: $\lambda_1 = 2.22$; $\lambda_2 = .48$; $\alpha = .82$; AVE = .74			
Study 2: $\lambda_1 = 2.68$; $\lambda_2 = .23$; $\alpha = .94$; AVE = .89			
Study 3: $\lambda_1 = 2.63$; $\lambda_2 = .24$; $\alpha = .93$; AVE = .88			
Positive expectation			
I expect the best, although I have never done these things before.	.79	.93	.93
I look at this task in a positive way.	.95	.97	.96
I am optimistic.	.93	.96	.95
Second-order loadings			
Construct-level psychometric properties			
Study 1: $\lambda_1 = 2.40$; $\lambda_2 = .50$; $\alpha = .87$; AVE = .80			
Study 2: $\lambda_1 = 2.75$; $\lambda_2 = .19$; $\alpha = .95$; AVE = .92			
Study 3: $\lambda_1 = 2.70$; $\lambda_2 = .21$; $\alpha = .94$; AVE = .90			

Table 17 Questionnaire (continued)

Explanatory Style	**Study 1**	**Study 2**	**Study 3**
I count on it that this will go without problems.	.78	.90	.92
I expect that things work out the way I want them to.	.81	.95	.92
I approach this job as if "every cloud has a silver lining" , with the idea that if I encounter a problem it will only be temporary.	.70	.92	.83
Second-order loadings	.58	.92	.86
Construct-level psychometric properties			
Study 1: $\lambda_1 = 1.76$; $\lambda_2 = .75$; α = .64; AVE = .59			
Study 2: $\lambda_1 = 2.57$; $\lambda_2 = .29$; α = .92; AVE = .86			
Study 3: $\lambda_1 = 2.38$; $\lambda_2 = .44$; α = .87; AVE = .79			
Attitude toward co-production (adapted from Dabholkar 1994; Dabholkar & Bagozzi 2002)			
In the situation described, how would you describe your feelings toward this approach?			
good-bad	.87	.94	
pleasant-unpleasant	.84	.94	
harmful-beneficial	.87	.93	
favorable-unfavorable	.88	.94	
Construct-level psychometric properties			
Study 1: $\lambda_1 = 2.99$; $\lambda_2 = .50$; α = .89; AVE = .75			
Study 2: $\lambda_1 = 3.51$; $\lambda_2 = .22$; α = .95; AVE = .88			
Intention to co-produce (adapted from Dabholkar 1994; Dabholkar & Bagozzi 2002)			
In the situation described, would you intend to choose this approach?			
likely-unlikely	.94	.97	
possible-impossible	.94	.97	
Construct-level psychometric properties			
Study 1: $\lambda_1 = 1.75$; $\lambda_2 = .25$; α = .86; AVE = .88			
Study 2: $\lambda_1 = 1.89$; $\lambda_2 = .11$; α = .94; AVE = .95			
Experience (created for the setting at hand)			
I have installed laminate flooring/roller blinds before.		.62	.57
I have done similar jobs before.		.81	.94
I have experience with DIY.		1.00	.96

Table 17 Questionnaire (continued)

Task Characteristics (adapted from Meuter et al. 2005; Moore & Benbasat 1991)	**Study 1**	**Study 2**	**Study 3**
Role clarity			
The steps in the process of this approach are clear.		.95	
I believe that the instructions I have to follow are clear.		.98	
It is clear to me what I have to do if I choose this approach.		.96	
Construct-level psychometric properties			
Study 2: $\lambda_1 = 2.78$; $\lambda_2 = .16$; $\alpha = .96$; AVE = .93			
Compatibility			
This approach is compatible with my lifestyle.		.96	
This approach is compatible with my needs.		.93	
This approach fits well with the way I like to get things done.		.96	
Construct-level psychometric properties			
Study 2: $\lambda_1 = 2.70$; $\lambda_2 = .20$; $\alpha = .94$; AVE = .90			
Complexity			
I believe that the tasks that are required for this approach are complicated.		.86	
It is difficult to install the laminate flooring myself.		.92	
I believe that this approach is complex.		.93	
Construct-level psychometric properties			
Study 2: $\lambda_1 = 2.45$; $\lambda_2 = .37$; $\alpha = .89$; AVE = .82			
Observability			
The outcomes of this approach are apparent to me.		.84	
I believe I could communicate the advantages and disadvantages of this approach to others.		.89	
I would have no difficulty telling others about the results of using this approach.		.82	
Construct-level psychometric properties			
Study 2: $\lambda_1 = 2.17$; $\lambda_2 = .52$; $\alpha = .81$; AVE = .72			

Table 17 Questionnaire (continued)

Trialability	**Study 1**	**Study 2**	**Study 3**
I can try to install the laminate flooring myself and if it is not successful I can ask someone to do it.		.82	
I can first try if I can install the laminate flooring myself and then decide if I continue the installation myself.		.94	
I can first experiment with installing the laminate flooring myself before I choose to install it in the bedroom myself.		.89	
Construct-level psychometric properties			
Study 2: $\lambda_1 = 2.36$; $\lambda_2 = .49$; $\alpha = .86$; AVE = .78			
Perceived risks			
This approach involves a risk of physical injuries.		.56	
This approach involves a financial risk.		.77	
This approach involves the risk that the laminate flooring is not as good as it should be.		.92	
Choosing this approach can hurt my image.		.56	
Outcome expectations (created for the setting at hand)			
A reason for choosing this approach is that…			
I could save money.		.75	
I could install the laminate flooring whenever I want.		.88	
I have control over the quality.		.76	
I could show others that I have done it myself.		.50	
The bedroom is quicker provided with the laminate flooring.		.75	
I could adapt the laminate flooring according to my wishes.		.73	

Table 17 Questionnaire (continued)

Intrinsic interest (created for the setting at hand)	**Study 1**	**Study 2**	**Study 3**
A reason for choosing this approach is that…			
I would find this approach enjoyable.		.99	
this approach would provide me with personal feelings of worthwhile accomplishment.		.83	
this approach would provide me with feelings of increased confidence in my capabilities.		.74	
this approach would provide me with feelings of self-expression.		.77	

3.3.4 Modeling PsyCap

Because Luthans and colleagues (e.g., Avey et al. 2011; Luthans et al. 2007a) have stated that PsyCap is a higher-order core construct that underlies the four capacities and represents the communality among these four capacities, PsyCap was operationalized as a second-order factor whereby each of the four first-order constructs (i.e., self-efficacy, hope, optimism, and resilience) acted as an indicator of the second-order core construct (i.e., PsyCap). To model this in the SmartPLS software package, the repeated indicators approach was applied. This implies that the higher-order construct (i.e., PsyCap) was set up through the repeated use of the indicators of the lower-order constructs (i.e., self-efficacy, hope, optimism, and resilience) (Wilson 2010). Appendix B gives more information about PLS-SEM and Appendix E presents the PLS path models used in this chapter.

3.3.5 Measurement model evaluation

In evaluating the psychometric properties of the scales used in this study, it is crucial to distinguish between reflective and formative measurement models.

For reflective measurement models the key psychometric properties include unidimensionality, internal consistency reliability, item validity, within-method convergent validity, and discriminant validity, respectively.

Unidimensionality was assessed following the procedure suggested by Karlis et al. (2003). The test proposed by Jöreskog (1971) was used to evaluate the internal consistency of the multiple-item constructs. Item validity was established by inspecting the magnitude and significance of the item loadings. Finally, within-method convergent and discriminant validity were assessed by Fornell and Larcker's (1981) average variance extracted (AVE) estimate (convergent validity) as compared to shared variance between the value construct and all other constructs in the model (discriminant validity).

The psychometric properties of PsyCap as a second-order reflective construct were assessed based on the recommendations of MacKenzie et al. (2011). The reliability of the first-order dimensions as indicators of the second-order construct (PsyCap) was assessed by calculating Fornell and Larcker's (1981) index of construct reliability for the second-order construct. Furthermore, to test the validity of each first-order construct, it is necessary to test whether the first-order construct is significantly related to the second-order construct. Finally, average variance extracted (AVE) was calculated by averaging the squared multiple correlations for the first-order indicators. If the AVE of PsyCap is greater than the cut-off value of .50, it can be concluded that the majority of the variance in the first-order subdimensions is shared with the second-order latent construct (MacKenzie et al. 2011).

With regard to the formative scales, appropriate psychometric properties encompass item validity and discriminant validity. Concerning item validity, statistical significance is sufficient to conclude whether a formative indicator is valid or not (Diamantopoulos & Winklhofer 2001). Evidence for discriminant validity was obtained by evaluating whether an absolute value of 1 falls within two standard errors of the latent variable correlations (MacKenzie et al. 2005).

3.3.6 Structural model evaluation

Following Ohtani (2000), structural model performance was assessed by constructing R squared bootstrap percentile confidence intervals for each endogenous[4] construct.

3.4 Study 1: The effect of PsyCap on co-production attitude and intention

The objective of Study 1 is to test whether PsyCap affects attitude toward co-production and intention to co-produce.

3.4.1 PsyCap and co-production

This study proposes that customers' PsyCap level positively contributes to customers' intention to co-produce, because PsyCap represents a construct that connects capacities that drive the motivation to achieve specific tasks and goals (Luthans et al. 2007a). Regarding co-production, these tasks and goals are the activities in the production process (such as design, transport, assemblage) performed entirely or partially by the customer (Grönroos & Ravald 2011; Payne, Storbacka, & Frow 2008; Xie et al. 2008). Furthermore, the positive psychological capacities of PsyCap can also be conceptualized as "resources from which one can draw" (Avey et al. 2010, p. 18; Xie et al. 2008). If one considers customers as partial employees who use and integrate resources during co-production, this conceptualization of PsyCap is an important theoretical explanation for the relationship between PsyCap and co-production.

Although intention to co-produce is the key dependent variable, this study also incorporates attitude toward co-production as an outcome variable. This is consistent with both the PsyCap (cf. meta-analysis of Avey, Reichard, Luthans and Mhatre 2011) and the co-production literature (e.g., Dabholkar & Bagozzi 2002; Xie et al. 2008). As noted by Avey, et al. (2011):

[4] An endogenous construct is a latent variable that appears at least once as a dependent variable in a structural relationship. An exogenous construct, on the other hand, never appears as a dependent variable in the structural model.

> A primary explanatory mechanism for the effect of PsyCap on employee attitudes is that those higher in PsyCap expect good things to happen at work (optimism), believe they create their own success (efficacy and hope), and are more impervious to setbacks (resilience) when compared with those lower in PsyCap. (p. 132)

In a similar vein, this study proposes that the Psychological Capital of the customer has a positive relationship with his/her attitude toward co-production. Following the rationale underlying the hypothesized relationship between PsyCap, customers' attitude toward co-production and intention to engage in the production process, the following two hypotheses are formulated:

Hypothesis 1.1: Psychological Capital is positively related to intention to co-produce.

Hypothesis 1.2: Psychological Capital is positively related to attitude toward co-production.

Furthermore, a customer's attitude toward co-production is expected to have a positive effect on his/her intention to co-produce (Dabholkar & Bagozzi 2002; Xie et al. 2008). Therefore, the following hypothesis is formulated:

Hypothesis 1.3: Attitude toward value co-production is positively related to intention to co-produce.

3.4.2 Method

To test the proposed relationships, a scenario which described composing and building a bookshelf oneself was used (see Appendix D). The participants were 176 undergraduate students taking an introductory marketing class at a Belgian university. The students volunteered to participate in the study, but participation was stimulated by allotting incentives (i.e., cinema tickets) among the participants. Of the 176 questionnaires collected, 6 questionnaires had to be removed from the sample due to incompletion. Thus, a total of 170 questionnaires were obtained (60 women, 110 men; mean age M = 19.80, SD = .86).

First, respondents were invited to carefully read the scenario and to rate the realism using four 9-point Likert scales, since the value of a scenario-based approach is dependent on the ability of the respondent to project him/herself into the situation described (Dabholkar 1994). The items used were 'the situation described was realistic' (*M* = 7.10, *SD* = 1.81), 'I had no difficulty imagining myself in the described situation' (*M* = 7.09, *SD* = 1.92), 'the scenario does not describe a realistic situation' (*M* = 2.63 *SD* = 1.77), and 'the scenario describes a situation I could encounter when wanting to buy a bookshelf' (*M* = 6.01 *SD* = 1.91). The scenario was considered highly realistic, since all items scored significantly different than the midpoint (i.e., 5 on a scale from 1 'totally not agree' to 9 'totally agree'). Next, respondents were asked to complete a questionnaire about the scenario at hand.

As mentioned in Paragraph 3.3.2, the key construct in this chapter, PsyCap, was measured using the scale developed by Luthans et al. (2007a). To measure attitude toward co-production and intention to co-produce, existing scales were used and adapted to the context (Dabholkar 1994; Dabholkar & Bagozzi 2002). Both attitude and intention have a reflective measurement model. The items of the questionnaire can be found in Table 17.

3.4.3 Results

All scales possessed favorable psychometric properties (see Table 17), with the exception of two PsyCap dimensions. An analysis of PsyCap's measurement model revealed that the constructs hope and optimism were not unidimensional. Instead of a single underlying dimension, the results pointed toward two underlying dimensions for both constructs. The PLS path model and an extensive report of the PLS-SEM results can be found in Appendix E.

Inspection of the items and the definitions of hope and optimism offered an explanation for this two-dimensional structure. In line with the definition of hope, the distinction between willpower and waypower was reflected by the data. Likewise, for optimism the two dimensions are in line with the two specific elements in the construct's definition, namely positive expectation and explanatory style. As a result, this chapter continues with a

conceptualization of PsyCap consisting of six rather than four dimensions. Figure 6 graphically illustrates the relationship between the original PsyCap measurement model and the PsyCap measurement model as evidenced by the data. In addition, a correlation matrix appears in Table 18.

Inspection of the R^2 values (R^2 attitude = .16 with CI_{99} = [.08;.23]; R^2 intention = .54 with CI_{99} = [.48;.60]) showed that the conceptual model was supported by the data. The individual coefficients indicated that PsyCap was a significant predictor of attitude (H1.2 supported; β = .39; CI_{99} = [.21;.57]) but did not have a direct link with intention to co-produce (H1.1 not supported; β = .08; CI_{90} = [-.01;.17]). However, PsyCap did influence intention indirectly through attitude, since the relationship between attitude and intention was significant (H1.3 supported; β = .70; CI_{99} = [.60;.80]).

Finally, common method bias was assessed which can be defined as "variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al. 2003, p. 879). If common method bias is present, it influences the magnitude of the elements of the inter-construct correlation matrix. Following the correlation-based marker technique, which builds on the notion of controlling for common method bias by partialling out shared variance in zero-order correlations associated with a so-called marker variable that serves as a proxy for common method bias, we selected the construct that has the lowest correlation with other constructs as a marker variable (Lindell & Whitney 2001; Bagozzi 2011). Analytically, the approach leads to two data matrices. One with the original zero-order correlations and one with the correlations with the method bias filtered out. The presence of significant common method bias is reflected by a statistically significant difference between the original zero-order and partial correlation coefficient. In this study, we used two items (i.e., 'Sometimes I feel depressed" and 'There are times when things look pretty hopeless to me') as indicators of our marker variable. No significant differences were found between the original zero-order correlation coefficients and the partial correlation coefficients, indicating that common method bias did not pose a risk to the interpretation of the data.

Figure 6 Relationship between the original and the proposed PsyCap measurement model

Figure 6a Original PsyCap measurement model

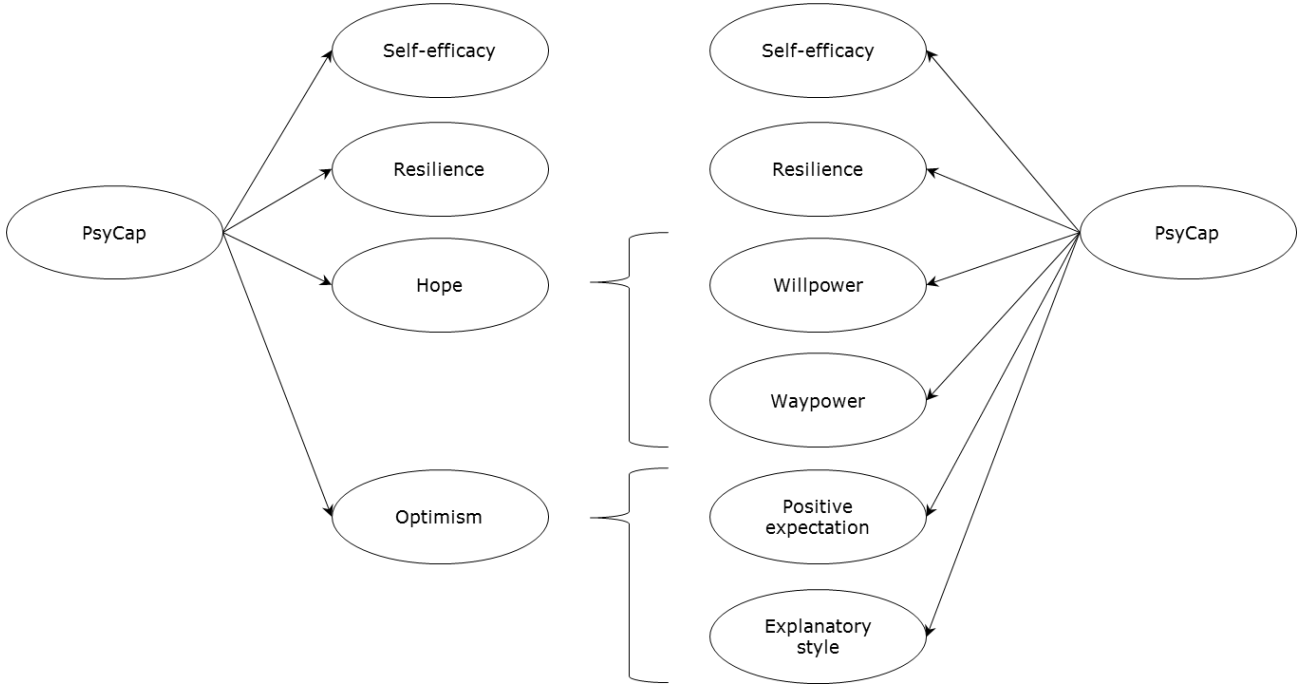


Figure 6b Proposed measurement model

Table 18 Summary of latent variable correlations for Study 1 and 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Attitude	–	.73	.39	.28	.35	.24	.34	.29	.38									
2. Intention	.80	–	.36	.24	.30	.21	.34	.25	.34									
3. PsyCap	.72	.81	–	.58	.83	.75	.90	.66	.92									
4. Explanatory style	.70	.77	.92	–	.45	.50	.37	.43	.43									
5. Positive expectation	.70	.76	.95	.90	–	.55	.70	.43	.77									
6. Resilience	.60	.67	.91	.81	.85	–	.51	.51	.54									
7. Self-efficacy	.71	.82	.96	.85	.89	.80	–	.47	.88									
8. Waypower	.66	.74	.93	.80	.84	.82	.89	–	.57									
9. Willpower	.73	.82	.96	.87	.90	.80	.97	.90	–									
10. Outcome expect.	.55	.61	.65	.63	.59	.53	.65	.58	.67	–								
11. Intrinsic interest	.64	.70	.77	.74	.74	.68	.76	.68	.77	.64	–							
12. Experience	.51	.61	.73	.67	.65	.64	.73	.71	.71	.46	.60	–						
13. Compatibility	.71	.82	.78	.74	.70	.64	.79	.73	.81	.66	.73	.63	–					
14. Complexity	-.52	-.62	-.71	-.67	-.66	-.60	-.73	-.64	-.70	-.51	-.62	-.57	-.59	–				
15. Observability	.42	.51	.65	.62	.61	.59	.62	.62	.63	.50	.50	.51	.55	-.48	–			
16. Perceived risk	-.51	-.55	-.63	-.63	-.59	-.54	-.62	-.56	-.62	-.49	-.58	-.52	-.54	.62	-.50	–		
17. Role clarity	.43	.46	.59	.54	.58	.53	.58	.53	.58	.53	.49	.38	.54	-.55	.52	-.42	–	
18. Trialability	.21	.24	.18	.15	.17	.12	.20	.16	.20	.16	.15	-.01	.16	-.03	.15	.06	.05	–

Note. Correlations for Study 1 are presented above the diagonal and correlations for Study 2 are presented below the diagonal.

3.4.4 Summary

Study 1 is - based on a thorough investigation of the literature - the first empirical investigation of PsyCap in a co-production setting. The results of Study 1 show that the Psychological Capital of the customer is directly related to his/her attitude toward co-production and indirectly related to his/her intention to co-produce. The relationship between PsyCap and intention to co-produce is fully mediated by attitude toward co-production (Iacobucci, Saldanha, & Deng 2007). These results validate that a higher level of PsyCap can lead to a positive attitude toward the co-production activity and eventually to a greater intention to co-produce.

Furthermore, it is interesting to note that the results show that PsyCap consists of six instead of four capacities. Based on the factor analysis, the items of the PsyCap-questionnaire, and the definition of the constructs, hope as well as optimism can be separated into two dimensions. The dimensions of hope are called 'willpower' and 'waypower', and the dimensions of optimism 'positive expectation' and 'explanatory style'. Each of these six PsyCap-capacities is positively linked to the overall PsyCap construct. Because of the theoretical foundation of the separation in six instead of four components, this can be an important finding for the PsyCap literature as well.

From a theoretical perspective, the results of this study indicate that the PsyCap literature can be extended to a customer setting. Building on this finding, the next study aims to further understand the role of PsyCap in a co-production context.

3.5 Study 2: PsyCap in a SCT-based conceptual model

The aim of this second study is to empirically assess the role of customers' PsyCap in a larger nomological web to get a grasp at 'the big picture'. Furthermore, Study 2 offers an opportunity to replicate the hypothesized relationships of Study 1. The work of Meuter et al. (2005) guides the design of Study 2.

3.5.1 PsyCap and Social Cognitive Theory

Meuter et al.'s (2005) framework, and thus the current study, is rooted in Social Cognitive Theory[5] (SCT). SCT explicitly includes personal and situational factors to explain individual behavior (Bandura 1997; Looney, Akbulut, & Poston 2008). SCT is especially suitable to the co-production context, since customers' participative behavior has been shown to be influenced by situational factors and individual differences (Dong et al. 2008; Meuter et al. 2005).

The conceptual model was developed by adapting Meuter's framework to a co-production context and adding PsyCap as an additional motivational variable. As a result, three motivational factors (PsyCap, outcome expectations and intrinsic interest), six environmental factors (which I refer to as task characteristics), one individual difference variable (i.e., experience), and two outcomes variables (attitude toward co-production and intention to co-produce) were distinguished.

In addition to PsyCap, two other motivational factors were taken into account: outcome expectations and intrinsic interest. Outcome expectations (or extrinsic motivation) refer to the fact that SCT recognizes that people regulate their behavior on the basis of the anticipated effects of their behavior (Dijkstra et al. 1999). In a co-production context, these anticipated effects may include price reductions, time savings, more control, or gaining status and social esteem (Etgar 2008; Chan et al. 2010; Lusch, Vargo & O'Brien 2007; Meuter et al. 2005, Xie et al. 2008). Intrinsic interest (or intrinsic motivation) relates to the self-satisfaction and enjoyment derived from personal challenge, goal accomplishment, and personal triumphs (Bandura 1997). In a co-production setting, customer participation can be a source of enjoyment (Bowers & Martin 2007; Etgar 2008, Lusch et al. 2007), a way to construct and maintain self-image (Xie et al. 2008), a way of self-expression (Xie et al. 2008), and a source of personal challenge (Etgar 2008). This leads to the following hypotheses:

[5] We opted for SCT instead of other attitude theories (Theory of Trying, Theory of Planned Behavior, Theory of Reasoned action) because SCT explicitly includes situational factors.

Hypothesis 2.1: Attitude toward co-production is positively influenced by the customer's (a) PsyCap level, (b) intrinsic interest, and (c) outcome expectations.

Hypothesis 2.2: Intention toward co-production is positively influenced by the customer's (a) PsyCap level, (b) intrinsic interest, (c) outcome expectations, and (d) attitude toward co-production.

Although defined as separate motivational constructs, the literature has indicated that PsyCap is likely to have a positive impact on both intrinsic and extrinsic motivation. In case of self-determined behavior, people display intrinsic motivation in activities which they believe they can perform successfully (Bandura 1997; Bandura & Schunk 1981; Compeau, Higgins, & Huff 1999; Dellande, Gilly, & Graham 2004). Likewise, feeling capable to perform a task is related to having more positive expectations regarding the outcomes of the task (Bandura 1997; Compeau et al. 1999). This latter relation has also been supported in a co-production context in the work of Lin and Huang (2008). The interrelationships among the motivational constructs are captured by the following hypothesis.

Hypothesis 2.3: The customer's PsyCap level has a positive impact on (a) intrinsic interest and (b) outcome expectations.

In line with the underlying premises of SCT, the co-production literature has provided evidence that customers' motivation to co-produce varies as a function of contextual and individual factors. Key contextual factors, which are defined in Table 19, include role clarity, perceived risk, compatibility, complexity, trialability, and observability (Meuter et al. 2005; Etgar 2008). According to Deci and colleagues (Gagné & Deci 2005; Ryan & Deci 2000), these factors can enhance or undermine motivation by supporting or thwarting people's psychological needs.

Table 19 Characteristics of value co-production tasks

Task Characteristic	Description in a co-production setting	Author(s)
Role clarity	Role clarity is defined as the extent to which the co-production tasks are clear to the customer. Participation in production activities can be hampered if the potential customer does not understand what to do.	Halbesleben and Buckley (2004); Lengnick-Hall (1996)
Perceived risk	Value co-production can reduce risks by enabling direct control over the production process. At the same time, co-production can create its own risks, such as physical, financial, psychological, social and time-related risks.	Etgar (2008)
Compatibility	Compatibility is defined as the degree to which the customer perceives the co-production activity as being consistent with his existing values, needs, and past experiences.	Moore and Benbasat (1991); Rogers (1995)
Complexity	Complexity is the degree to which the co-production activity is perceived as difficult.	Moore and Benbasat (1991); Rogers (1995)
Trialability	Trialability is the degree to which the co-production activity may be experimented with before agreeing to participate.	Moore and Benbasat (1991); Rogers (1995)
Observability	Observability is the degree to which the results of the co-production activity are visible to others.	Moore and Benbasat (1991); Rogers (1995)

An important individual difference variable in understanding customer motivation to co-produce is experience. When a customer has successfully accomplished similar co-production tasks in the past, his/her skills may be improved (Etgar 2008), and more importantly he/she has more confidence in his/her own skills (Dong et al. 2008; Meuter et al. 2005). Overall, this leads to the following hypotheses.

Hypothesis 2.4: Positive (negative) task characteristics has a positive (negative) effect on (a) PsyCap; (b) intrinsic interest; and (c) outcome expectations.

Hypothesis 2.5: Previous experience has a positive effect on PsyCap.

3.5.2 Method

The scenario described the installation of laminate flooring. More specifically, it described a situation in which the customer has a choice between the self-installation of laminate flooring and the installation by the firm (see Appendix D). Data were collected in cooperation with an online research bureau, which resulted in a final sample size of 251 respondents (122 women, 129 men; mean age M = 46.10, SD = 16.01).

First, the respondents were invited to carefully read the scenario and to rate the realism using four nine-point Likert scales. The same items as in Study 1 were used: 'the situation described was realistic' (M = 7.48, SD = 1.49), 'I had no difficulty imagining myself in the described situation' (M = 7.76, SD = 1.40), 'the scenario does not describe a realistic situation' (M = 2.61, SD = 2.06), and 'the scenario describes a situation I could encounter when wanting to buy laminate flooring' (M = 7.16, SD = 1.73). The scenario was considered highly realistic, since all items scored significantly different than the midpoint (i.e., 5 on a scale from 1 'totally not agree' to 9 'totally agree').

Next, the respondents were asked to complete a questionnaire about the scenario at hand. To assess PsyCap, attitude toward co-production and intention to co-produce, we used the same measures as in Study 1 (see also Table 17). Furthermore, we used the six instead of four components of PsyCap that we discovered in Study 1. To measure role clarity, compatibility,

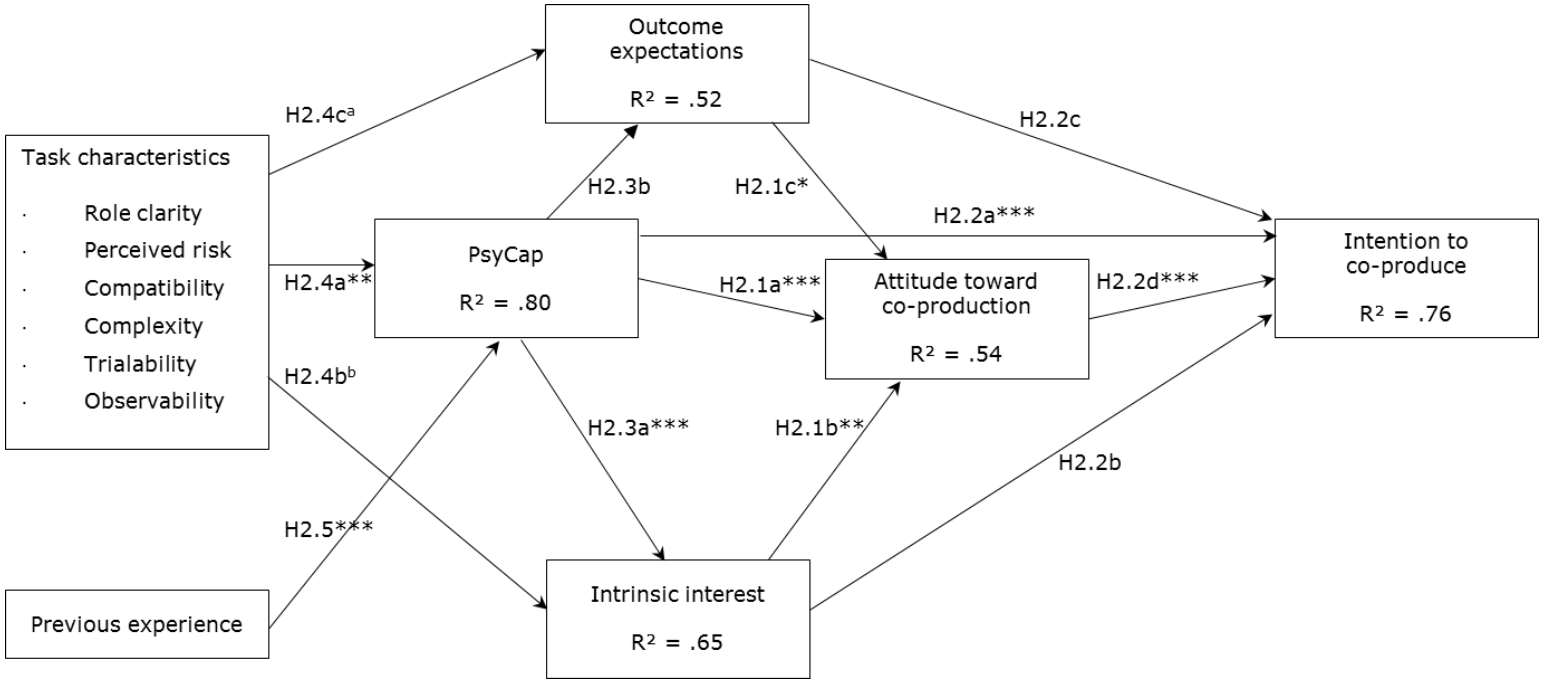
complexity, trialability, and observability, existing reflective scales (based on Meuter et al. 2005; Moore & Benbasat 1991) were used and adapted to the setting at hand by means of the co-production literature. To measure experience, perceived risk, outcome expectations and intrinsic interest, the co-production literature was used to generate items. Because of the nature of these constructs, they have formative measurement scales. Table 17 presents a list of the items used in this study. This table also reports the relevant psychometric properties. In addition, a correlation matrix appears in Table 18.

3.5.3 Results

The conceptual model and results are presented in Figure 7 and Table 20 respectively. The PLS path model used in this study and an extensive report of the PLS-SEM results can be found in Appendix E.

Starting with an evaluation of the overall model performance, the conceptual model was very well supported by the data as all R^2-values (see Figure 7) were significantly larger than zero.

Figure 7 Conceptual model Study 2: Incorporating PsyCap in Social Cognitive Theory



[a] Hypothesis partially supported: compatibility. perceived risk and role clarity have a significant effect on outcome expectations.
[b] Hypothesis partially supported: compatibility and perceived risk have a significant effect on intrinsic interest.
Notes. Significance based on percentile bootstrap confidence intervals: *significant at .10 level; **significant at .05 level; ***significant at .01 level

Table 20 Results of Study 2

Hypothesized relationship				Path Coefficient	
H2.1a	PsyCap	→	Attitude	.53	***
H2.1b	Intrinsic interest	→	Attitude	.16	**
H2.1c	Outcome expectations	→	Attitude	.11	*
H2.2a	PsyCap	→	Intention	.41	***
H2.2b	Intrinsic interest	→	Intention	.06	ns
H2.2c	Outcome expectations	→	Intention	.07	ns
H2.2d	Attitude	→	Intention	.43	***
H2.3a	PsyCap	→	Intrinsic interest	.44	***
H2.3b	PsyCap	→	Outcome expectations	.15	ns
H2.4a	Role clarity	→	PsyCap	.11	**
H2.4a	Compatibility	→	PsyCap	.29	***
H2.4a	Trialability	→	PsyCap	.11	***
H2.4a	Observability	→	PsyCap	.13	***
H2.4a	Complexity	→	PsyCap	-.20	**
H2.4a	Perceived risk	→	PsyCap	-.10	**
H2.4b	Role clarity	→	Intrinsic interest	.01	ns
H2.4b	Compatibility	→	Intrinsic interest	.29	***
H2.4b	Trialability	→	Intrinsic interest	.04	ns
H2.4b	Observability	→	Intrinsic interest	-.05	ns
H2.4b	Complexity	→	Intrinsic interest	-.07	ns
H2.4b	Perceived risk	→	Intrinsic interest	-.13	**
H2.4c	Role clarity	→	Outcome expectations	.18	**
H2.4c	Compatibility	→	Outcome expectations	.35	***
H2.4c	Trialability	→	Outcome expectations	.07	ns
H2.4c	Observability	→	Outcome expectations	.04	ns
H2.4c	Complexity	→	Outcome expectations	-.01	ns
H2.4c	Perceived risk	→	Outcome expectations	-.12	*
H2.5	Previous experience	→	PsyCap	.28	***

Notes. Significance based on percentile bootstrap confidence intervals: * significant at .10 level; ** significant at .05 level; *** significant at .01 level, ns indicates non-significance

When looking at the path coefficients, it can be concluded that PsyCap was a significant predictor of attitude (H2.1a; β = .53; CI_{99} = [.27;.74]) and attitude had a positive effect on intention to co-produce (H2.2d; β = .43; CI_{99} = [.19;.68]). Furthermore, a significant positive direct effect of PsyCap on intention was found (H2.2a; β = .41; CI_{99} = [.15;.66]). Furthermore, whereas a significant positive relationship between PsyCap and intrinsic interest was found (H2.3a; β = .44; CI_{99} = [.19;.69]), PsyCap had no statistically significant effect on outcome expectations (H2.3b; β = .15; CI_{90} = [-.04;.33]).

Additionally, intrinsic interest had a positive effect on attitude (H2.1b; β = .16; CI_{95} = [.01;.32]) and the effect of outcome expectations on attitude reached marginal significance at the .10 level (H2.1c; β = .11; CI_{90} = [.00;.24]). However, this study did not find support for H2.2b and H2.2c which implies that neither outcome expectations (H2.2c; β = .07; CI_{90} = [-.01;.16]), nor intrinsic interest (H2.2b; β = .06; CI_{90} = [-.06;.19]) had a significant direct effect on intention.

With regard to the antecedents of PsyCap, a positive effect of previous experience on PsyCap was found (H2.5; β = .28; CI_{99} = [.17;.39]) as well as statistically significant relationships between all of the task characteristics and PsyCap (H2.4a): role clarity (β = .11, CI_{95} = [.01;.20]), compatibility (β = .29; CI_{99} = [.14;.42]), trialability (β = .11,;CI_{99} = [.02;.18]), and observability (β = .13; CI_{99} = [.02;.24]) were considered positive task characteristics and had a positive effect on PsyCap, whereas complexity (β = -.20; CI_{95} = [-.37;-.04]) and perceived risk (β = -.10; CI_{95} = [-.20;-.01]) were considered negative task characteristics and thus had a negative effect on PsyCap.

Hypothesis H2.4b – which deals with the effect of the task characteristics on intrinsic interest – was partially supported. The results showed a significant positive effect of compatibility (β = .29; CI_{99} = [.04;.52]) and a significant negative effect of perceived risk (β = -.13; CI_{95} = [-.25;-.02]).

Concerning the effect of these task characteristics on outcome expectations (H2.4c), the results showed a significant positive effect of compatibility (β =

.35; CI_{99} = [.11;.59]) and role clarity (β = .18; CI_{95} = [.02;.35]) as well as a negative effect of perceived risk (β = -.12; CI_{90} = [-.24;-.02]) which was significant at the .10 level.

The impact of each of the motivational constructs (i.e., PsyCap, outcome expectations, and intrinsic interest) on attitude and intention was evaluated by examining the change in R²-values. Specifically, the effect size f^2 was calculated as:

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}} \tag{3.1}$$

where $R^2_{included}$ and $R^2_{excluded}$ are the R²-values provided on the dependent variable (i.e., attitude and intention) when the predictor variable is used or omitted in the structural equation respectively (Chin 2010). Effect sizes of .02, .15, and .35 can be viewed as criteria for whether a predictor has a small, medium, or large effect at the structural level (Chin 2010; Cohen 1988). Table 21 reports the R²-values and the effect sizes for each predictor of attitude and intention.

Table 21 Effect sizes

	Attitude			Intention		
	$R^2_{included}$	$R^2_{excluded}$	f^2	$R^2_{included}$	$R^2_{excluded}$	f^2
PsyCap	.54	.44	.22	.76	.71	.21
Outcome expectations	.54	.54	.01	.76	.76	.01
Intrinsic interest	.54	.53	.02	.76	.76	.01

Based on the effects sizes, PsyCap seems to be the key explanatory factor in terms of incremental variance explained in the dependent variables.

Because all measures were collected from a single source, common method bias was assessed based on the same test employed in Study 1. We selected the construct that had the lowest correlation with other constructs as a marker variable (Lindell & Whitney 2001; Bagozzi 2011). For this study, we selected the variable 'trialability' as marker variable. Although this variable can be considered as a non-ideal marker as it was initially hypothesized to be a significant antecedent in our model, the results showed that this

variable had the smallest correlations with the other variables (see Table 18). No significant differences were found between the original zero-order correlation coefficients and the partial correlation coefficients, indicating that common method bias did not pose a risk to the interpretation of the data.

3.5.4 Summary

In Study 2, PsyCap was incorporated in Social Cognitive Theory to offer a better understanding of the factors influencing customer intention to co-produce. In line with the findings of Study 1, the results show that PsyCap is positively related to attitude toward co-production. Furthermore, PsyCap and attitude toward co-production have a positive direct effect on intention to co-produce.

The results of this study also reveal that PsyCap enhances intrinsic interest, which is in line with the expectation that people display intrinsic interest in activities which they believe they can perform successfully. However, the effect of PsyCap on outcome expectations is not significant, thus PsyCap does not affect customers' expectations regarding the outcomes of the co-production task. The findings also show that outcome expectations and intrinsic interest do not have a direct effect on intention to co-produce but indirectly affect intention via attitude toward co-production.

Additionally our results show that PsyCap is positively influenced by experience, compatibility, role clarity, trialability and observability; whereas it is negatively influenced by perceived risk and complexity. Furthermore, compatibility has a positive effect on intrinsic interest and outcome expectations, while perceived risk has a negative effect on both motivational constructs. Finally, role clarity positively affected outcome expectations.

Overall, the findings of Study 2 provide additional insight into the role of PsyCap in a co-production setting and suggest that PsyCap is not only an additional predictor of attitude toward co-production and intention to co-produce but even a key predictor of these outcome variables. This confirms the essential role of PsyCap, which is an important finding for the co-production literature.

3.6 Study 3: Managing PsyCap

The aim of the third and final study is to empirically assess possible strategies hypothesized to effectively influence the customer's level of PsyCap in a co-production setting. This research objective builds on the notion that PsyCap represents a malleable, state-like customer characteristic.

3.6.1 PsyCap as a developable construct

As outlined in the literature review of PsyCap presented earlier (see Paragraph 3.2.2), several strategies are available to influence PsyCap. Building on recent findings in the co-production literature, this final study investigates the effect of vicarious learning (i.e., showing an instruction video) and the provision of equipment (i.e., making the required tools available to the customer free of charge) as possible ways to increase the customer's level of co-production PsyCap.

Dong et al. (2008) have indicated that vicarious learning can be an important tool for influencing participative behavior, since it improves customers' understanding of their role in the value production process as well as the necessary procedures for completing the task successfully. Furthermore, vicarious learning by showing an instruction video is in line with Etgar's (2008) work on co-production. He has indicated that new types of communications such as video broadcasting and the internet can facilitate co-production, since it allows rapid and low cost interactions between the firm and the customer.

Provision of equipment as a strategy to improve PsyCap in a co-production context is consistent with Etgar (2008) who has stated that co-production requires the use of specific resources and that the presence of such resources may impact a customer's willingness to engage in co-production activities.

Building on empathizing-systemizing theory (e.g., Baron-Cohen 2003; 2005), the effects of the aforementioned strategies are hypothesized to depend on customer gender.

Vicarious learning * gender

Vicarious learning implies watching others accomplishing the task (Bandura 1997). When you watch others accomplish the task and achieve success, you believe that you can also be successful if you follow the same behavioral sequence (Luthans et al. 2007b).

According to empathizing-systemizing theory, women are more socially oriented and prefer empathic, people-populated situations (Cramphorn 2011). Because the female brain is better at empathizing with others than the male brain (Baron-Cohen 2003), it can be expected that, in case of vicarious learning, women can better empathize with the people in the video and take their perspective. Therefore, the following hypothesis is formulated.

Hypothesis 3.1: The positive effect of vicarious learning through an instruction video on PsyCap is larger for women than for men.

Provision of equipment * gender

The provision of equipment needed for accomplishing the co-production task is what Luthans et al. (2007b) have referred to as an asset-based strategy. The provision of relevant assets and resources enlarges the perceived chances of positive outcomes and has a positive impact on the PsyCap level (see also Luthans et al. 2007b).

Drawing on empathizing-systemizing theory, it is expected that the positive effect of the provision of equipment depends on gender. More specifically, compared to women, men are more system-oriented and have an innate interest in putting things together, building things and finding out how things work (Baron-Cohen 2005). Therefore, it is expected that the provision of equipment has a stronger effect on men than on women. This leads to the following hypothesis.

Hypothesis 3.2: The positive effect of the provision of equipment on PsyCap is larger for men than for women.

Because PsyCap is the core construct underlying the positive capacities and represents the communality among these capacities, Luthans and colleagues

state that a positive interdependence exists between the different capacities (Luthans et al. 2007b). An example of this positive interdependence would be that hopeful persons who possess the willpower and waypower to achieve their goals will also feel more motivated to and capable of overcoming difficulties and, hence, be more resilient (Luthans et al. 2007b). In a similar vein, it is hypothesized that the treatment conditions strengthen each other and, thus, a more powerful effect is expected when vicarious learning and the provision of equipment are both present compared to when only one of the two treatment conditions is present. Put differently, vicarious learning in combination with the provision of equipment is expected to demonstrate a stronger positive effect on PsyCap compared to vicarious learning or the provision of equipment alone. Hence, this leads to the following hypothesis:

Hypothesis 3.3: The effect of the provision of equipment on PsyCap is magnified by the presence of vicarious learning.

In line with the opposite hypothesized moderator effect of gender for the PsyCap enhancement strategies in isolation, the relationship put forward in Hypothesis 3.3 is expected to be equal for men and women.

3.6.2 Method

A 2*2*2 (vicarious learning * provision of equipment * gender) pretest-posttest control group experimental design was used to test the hypotheses. This is schematically presented in Figure 8A.

The scenario described the installation of a roller blind. More specifically, it described a situation in which the customer has a choice between the self-installation of the roller blind and the installation by an employee of the store (see Appendix D). Respondents were recruited via an announcement in a local newspaper. The announcement did not mention the setting of the study. To stimulate participation, a small incentive was provided in exchange for respondents' time and effort. Data were collected from 267 respondents (126 women, 141 men; mean age M = 30.88, SD = 14.84). Subjects were randomly assigned to the treatment and control groups.

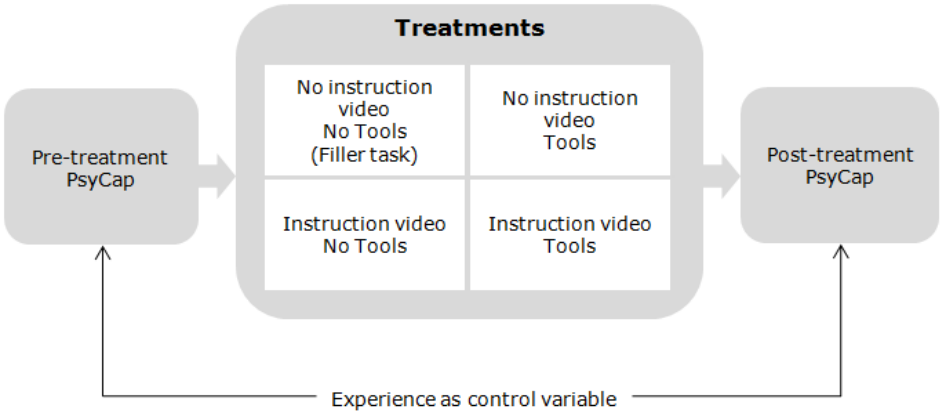
First, the respondents were invited to carefully read the scenario and to rate the realism using four 9-point Likert scales. The same items as in Study 1 and 2 were used: 'the situation described was realistic' (M = 7.74, SD = 1.52); 'I had no difficulty imagining myself in the described situation' (M = 7.76, SD = 1.61); 'the scenario does not describe a realistic situation' (M = 2.24, SD = 1.74); 'the scenario describes a situation I could encounter when wanting to buy a roller blind (M = 7.44, SD = 1.75). The scenario was considered highly realistic, since all items scored significantly different than the midpoint (i.e., 5 on a scale from 1 'totally not agree' to 9 'totally agree').

Next, the participants completed the pretest PsyCap questionnaire. Subsequently, participants in the three intervention groups received a treatment (i.e., vicarious learning, provision of equipment, or both), whereas participants in the control group performed a filler task (solving simple word puzzles and mathematical tasks). Vicarious learning was induced by presenting a video showing a person that accomplished the various steps of the installation. The provision of equipment was manipulated by including the following sentence: "If you choose to measure and install the roller blind yourself, you can borrow a tool box with all the necessary equipment free of charge. To obtain this tool box, you only have to pay a fee which you recover when you return the equipment".

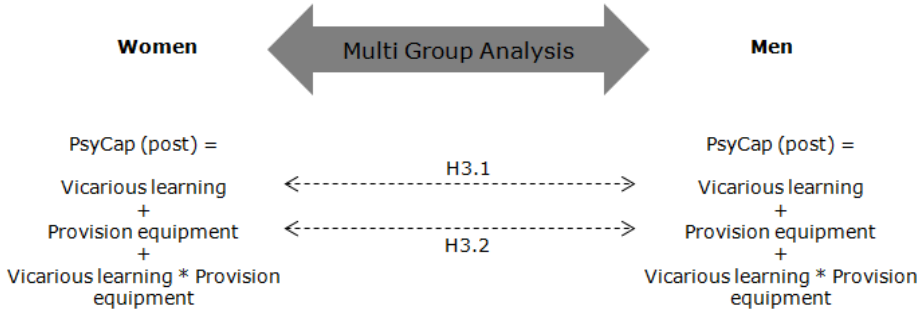
Subsequently, a posttest PsyCap questionnaire was administered to each participant, and finally, questions about age, gender and experience were asked. To measure experience, we used similar items as the ones used in Study 2.

Figure 8 Research design Study 3

A. Experimental Design



B. Multigroup analyses and hypotheses testing



C. Results

	Total sample		Men		Women		Difference women-men	
	Coeff.	Sign.	Coeff.	Sign.	Coeff.	Sign.	Coeff.	Sign.
Vicarious learning	.17	***	.12	***	.24	***	.13	***
Provision of equipment	-.03	ns	.05	ns	-.08	*	-.13	***
Vicarious learning * Provision of	.01	ns	.03	ns	.00	ns		

Notes. Coeff. = Path coefficient; Sign. = Significance based on percentile bootstrap confidence intervals: * significant at .10 level; ** significant at .05 level; *** significant at .01 level, ns indicates non-significance

As mentioned before, PLS-SEM was used to analyze the data. Since the analysis focused on the difference between the treatment and control groups, while controlling for any effects of the previous PsyCap level, pretest PsyCap was incorporated as a covariate in the model. Therefore, an ANCOVA-like analysis in PLS-SEM with a baseline measure (i.e., pretest PsyCap) as covariate was considered the preferred analytic strategy in testing pre-post differences as it reduces error variance and yields more powerful tests (Dimitrov & Rumrill 2003; Luong 2005). Based on the findings of Study 2, experience was incorporated as a control variable in the conceptual model which allows controlling for the effect of experience on both pretest and posttest PsyCap.

To incorporate factorial data resulting from the vicarious learning and provision of equipment manipulation in a PLS-SEM context, the procedure as suggested by Streukens et al. (2010) was used. Hence, the experimental manipulations (i.e., vicarious learning, provision of equipment, and the interaction between the two) were modeled as latent variables with dummy variables as their formative indicators (Streukens et al. 2010). Significant values of the path coefficients from these dummy variables to the PsyCap-construct indicated whether vicarious learning, the provision of equipment, and the interaction between these two achieved the hypothesized effect on PsyCap.

To empirically test for differences between men and women, the PLS multi-group analysis (PLS-MGA) developed by Henseler and colleagues (Henseler 2012; Henseler, Ringle, & Sinkovics 2009) was used (see Figure 8B). The working principle of this PLS-MGA was as follows: (1) the data were divided into subsamples according to the grouping variable (i.e., men and women); (2) the PLS path model was estimated for each subsample; (3) each subsample became subject to a separate bootstrap analysis (based on 5000 bootstrap samples); (4) the bootstrap estimates were used to assess the robustness of the subsample estimates (Henseler 2012). More information about PLS-MGA can be found in Appendix B.

By using this particular combination of data analytic procedures, an effective and efficient estimation of all required model parameters is possible while

avoiding multicollinearity issues that can result from the inclusion of a multitude of interaction effects. Furthermore, an additional benefit of using PLS-SEM as opposed to ANCOVA includes the ability to incorporate structural relationships between the control variable (i.e., experience) and both the pre- and post-treatment PsyCap measurements. The PLS path model used in this study and an extensive report of the PLS-SEM results can be found in Appendix E.

3.6.3 Results

The hypothesized interaction between vicarious learning and the provision of equipment was not statistically significant (β = .01, CI_{90} = [-.02;.05]), nor did it depend on the gender of the customer (men: β = .03, CI_{90} = [-.02;.08]; women: β = .00, CI_{90} = [-.05;.06]). This implies that Hypothesis 3.3 was not supported by the data.

Before conducting the PLS-MGA, measurement invariance was evaluated. This implies that the outer loadings of the measurement models should not differ significantly between groups (Eberl 2010). If lack of measurement invariance was found, this could imply that the meaning of items was not the same for male and female respondents. To assess measurement invariance, the percentile confidence intervals of the differences between the bootstrapped outer loadings of the male sample and the bootstrapped outer loadings of the female sample were calculated. For six outer loadings the results showed a significant difference (at the 5% level) between the male and the female sample. Although the number of significant differences was only a small portion of the total number of tests performed (99 in total), additional analyses were conducted to examine whether these differences affect the results of the structural model. Although in covariance-based SEM it is possible to constrain all outer loadings to be identical across groups (Jaccard & Wan 1996), this is not possible in PLS-SEM. Alternatively, to impose such equivalence of measurement models, the summated scales were used as indicators of the latent variables. The results of the analysis based on the summated scales were in line with the results of the original PLS path model, indicating that measurement invariance did not pose a

problem for the interpretation of the structural model. Consequently, we can proceed to the interpretation of the PLS-MGA results.

As illustrated by the results presented in Figure 8C, the two-way interactions between gender and respectively vicarious learning and the provision of equipment were statistically significant. Although the effect of vicarious learning on PsyCap was positive and significant for both men and women, the effect was indeed significantly larger for women than for men (difference between women and men = .13, PLS-MGA *p*-value = .01; men: β = .12, CI_{99} = [.04;.21]; women: β = .24, CI_{99} = [.14;.35]). Hence Hypothesis 3.1. was supported by the data.

The effect of provision of equipment was statistically larger for men than for women (difference between men and women = .13, PLS-MGA *p*-value = .01). An analysis of the subsamples showed that the path coefficient of provision of equipment was not significantly different from zero for the male sample (β = .05, CI_{90} = [-.01;.10]) and negative for the female sample (β = -.08, CI_{90} = [-.16;.-.01]). Since Hypothesis 3.2 was based on the expectation that there would be a positive effect of the provision of equipment on PsyCap, this hypothesis was not supported by the data.

3.6.4 Summary

The focus of Study 3 was on the state-like, manageable nature of PsyCap. By means of an experimental design, this study tested whether vicarious learning and the provision of equipment positively affect PsyCap. Furthermore, gender differences were taken into account.

The results of this third and final study show that the level of PsyCap can be influenced by relatively simple and inexpensive strategies and that the effectiveness of these strategies depends on the customer's gender. The findings indicate that the positive effect of showing an instructional video to customers is effective for both men and women, and, furthermore, that this effect is larger for women than for men. This is in line with empathizing-systemizing theory which suggests that women can better empathize with the people in the video and take their perspective. Although it was posited (see Hypothesis 3.2) that there would be a similar effect for provision of

equipment but in favor of the male sample, the results show that this effect is not significant for the male sample and even negative for the female sample. However, this could be related to the setting at hand. The toolbox that was provided included a drill, an electrical screwdriver, a folding rule, a pencil and a level. Maybe most men already own these tools? And maybe women are worried when they are confronted with electrical equipment such as a drill? Finally, the expected interaction effect between the instructional video and the provision of equipment was not supported by the data. Hence, the treatment conditions do not strengthen each other.

Overall, the results of Study 3 confirm the state-like nature of PsyCap in a co-production context. As a result, this research contributes to our theoretical understanding of the manageable factors that enhance customers' co-production intentions. Furthermore, by incorporating gender in the research design, this study identifies an important boundary condition for the effectiveness of strategies intended to increase customers' PsyCap.

3.7 General discussion

Given the theoretical and practical significance of co-production, it is essential to gain a deeper understanding of the factors fueling the intention of a customer to co-produce. Building on recent advances in the employee management literature, the central aim of this chapter was to assess the role of customers' Psychological Capital (PsyCap) in a co-production context.

3.7.1 Summary of findings

The main results of Study 1 and 2 provide support for the proposition that PsyCap is positively related to intention to co-produce. Furthermore, the findings of Study 2, in which PsyCap was incorporated in a larger conceptual framework, offer a better understanding of the factors influencing customers' co-production intention. The results of this study show that both attitude toward co-production and PsyCap have a positive direct effect on intention to co-produce, whereas outcome expectations and intrinsic interest indirectly affect intention to co-produce via attitude toward co-production. The results of Study 2 also show that PsyCap is positively related to intrinsic interest and attitude toward co-production but does not affect outcome expectations.

Moreover, Study 2 demonstrates that experience as well as various positive and negative task characteristics are significant antecedents of PsyCap.

The focus of Study 3 was on the state-like, manageable nature of PsyCap. By means of an experimental design, this study tested whether vicarious learning and the provision of equipment positively affect PsyCap. Furthermore, gender differences were taken into account. The results of this study show that vicarious learning has a positive effect on the level of PsyCap and that this effect is larger for women than for men. Providing equipment, however, does not have the anticipated effect on PsyCap: for men the provision of equipment has no significant effect and for women it even has a negative effect on PsyCap.

3.7.2 Theoretical contributions

The findings of this chapter contribute significantly to the theoretical understanding of the factors that influence co-production. The traditional motivational constructs and antecedents explored in previous studies are not disputed but are supplemented with a recently developed construct: customers' PsyCap.

The findings suggest that customers' PsyCap is not only an additional predictor of attitude toward co-production and intention to co-produce but even a key predictor of these outcome variables. More specifically, from the three motivational factors, PsyCap has the strongest effect on attitude and intention. This confirms the essential role of PsyCap, which is an important finding for the co-production literature.

Explicitly allowing for interrelationships among the different motivational constructs further underscores the value of PsyCap in understanding co-production intentions. Besides being a significant predictor of key evaluative judgments such as attitude and intention, PsyCap also indirectly influences attitude toward co-production via its positive impact on intrinsic interest.

This chapter also shows that the direct impact of task characteristics on intrinsic and extrinsic motivation is rather limited. This corresponds to a large extent to the empirical findings reported by Meuter et al. (2005). On

the other hand, the findings suggest that these task characteristics have a significant direct effect on PsyCap. Incorporating PsyCap as an additional motivational construct provides insight into a mechanism that links co-production task characteristics to customer co-production intentions.

The results of Study 3 confirm the state-like, manageable nature of PsyCap in a co-production context. As a result, this research contributes to our theoretical understanding of the manageable factors that influence customer co-production intentions. Furthermore, by incorporating gender in the experimental design, this study identifies an important boundary condition for the effectiveness of strategies intended to enhance customers' PsyCap.

3.7.3 Managerial implications

The findings of this chapter are useful to firms that are considering the introduction of co-production activities as well as those struggling with the management of existing co-production activities. Introducing the manageable PsyCap construct in a co-production context opens up a variety of possibilities to design truly actionable marketing strategies to stimulate customer co-production. For example, the results of Study 3 show that vicarious learning could be used to increase customers' level of PsyCap. Showing an instructional video that presents a person performing the co-production task successfully increases PsyCap and, as a result, positively affects attitude toward co-production and intention to co-produce. However, this study also shows that managers have to be careful when choosing the appropriate tools to develop PsyCap. According to the results of Study 3, providing equipment to the customer did not have an effect on men's PsyCap, but, more importantly, it has a negative effect on women's PsyCap.

Furthermore, the significant role of PsyCap in the conceptual model presented in Study 2 offers an explanation for why attractive co-production possibilities are underutilized even though customers are convinced of their benefits (i.e., are intrinsically and/or extrinsically motivated). The findings suggest that being motivated by the benefits of co-production is not a sufficient condition for customer participation; rather, customers need to possess sufficient Psychological Capital to co-produce. In particular, they

need to be convinced that they are sufficiently capable to fulfill the necessary tasks, have the will- and waypower to fulfill those tasks, have positive expectations about the co-production tasks, and have the strength and means to overcome possible setbacks during co-production.

In line with the positive and significant relationship between previous experience and PsyCap, it is important to get customers to initially opt for co-production initiatives. Offering customers a chance to try the co-production task free of charge could enhance their level of PsyCap and, ultimately, enhance their attitude and intention to co-produce. This is in line with the PsyCap (Bandura 1997) as well as the co-production (Etgar 2008) literature, which state that 'experience is the best teacher.'

Additionally, the task characteristics related to PsyCap can provide directions on how to communicate co-production options to potential customers. Examples include clarifying the exact role of the customer in the co-production process (role clarity) and stressing the simplicity of the stages involved in the co-production process (complexity). According to Avey et al. (2011), effective communication of co-production task characteristics is crucial in customer decision making, as it leads customers to expect good things to happen when opting for co-production (optimism), convinces them that they can create their own success (efficacy and hope), and instills the belief that they are more impervious to possible obstacles in the co-production process (resilience).

3.8 Limitations and further research

Although this chapter contributes to our understanding of PsyCap in a co-production setting, several limitations and further research suggestions deserve to be mentioned.

First, additional studies in more diverse co-production settings should be conducted to provide additional support and increase the generalizability of the findings. The studies described in this chapter mainly focus on DIY settings and applying this framework to other settings as well could enhance our understanding of the role of PsyCap in co-production.

Second, measures of actual participative behavior, rather than behavioral intentions, could enhance the soundness of this study. Unfortunately, such behavioral data are often difficult and expensive to obtain. In addition, it should be noted that, although a significant positive association between intention and behavior exists, the conversion of intentions into behavior is moderated by various factors (e.g., Seiders et al. 2005).

Third, gender was used as a moderator based on empathizing-systemizing theory. This theory states that differences exist between the male and female brain: The female brain focuses on empathy, whereas the male brain focuses on constructing systems (Baron-Cohen 2003). However, previous research has indicated that, although on average women perform better than men in empathizing and men higher than women in systemizing, both sexes show a range of variation on both dimensions (Baron-Cohen 2003; 2005; Nettle 2007). Therefore, it might be better to measure these individual differences by means of a self-report questionnaire to determine the empathizing and systemizing quotient (Nettle 2007).

Fourth, Study 3 uses vicarious learning and provision of equipment as tools to manage PsyCap. However, based on the guidelines developed in the PsyCap literature, one could think of other ways to manage PsyCap. Further research is necessary to examine these possibilities.

Fifth, the findings of Study 3 show that providing equipment had a negative effect on women's PsyCap and no effect on men's PsyCap. However, this could be related to the setting at hand. The toolbox that was provided included a drill, an electrical screwdriver, a folding rule, a pencil and a level. Maybe most men already own these tools? And maybe women are worried when they are confronted with electrical equipment such as a drill? Further research could unfold these issues and examine whether the provision of equipment really is such a bad choice.

Despite these limitations, this chapter's findings offer "a starting point for managers who embrace the view that co-production will provide the next source of competitive advantage" (Auh et al. 2007, p. 368).

Chapter 4

Communicating value from a service-dominant logic perspective: The explicitness of the customer's resource integrating role in advertising

4.1 Introduction

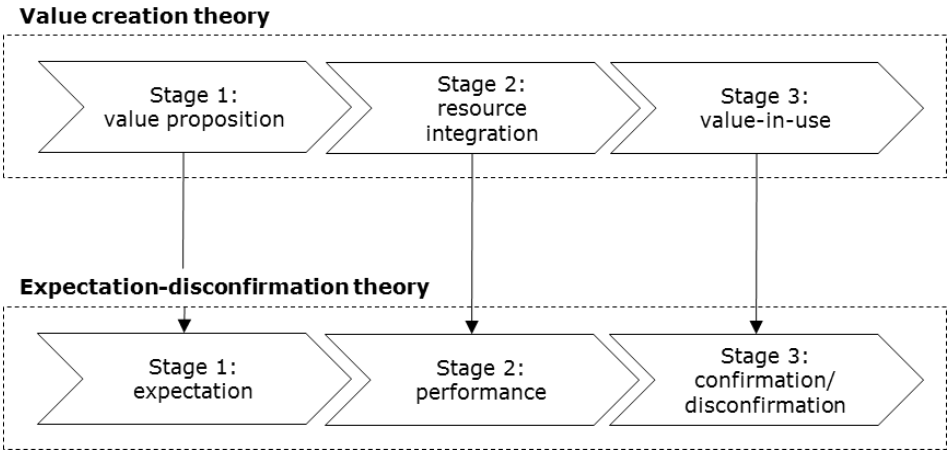
Recent advances in the academic marketing literature such as service-dominant logic (Vargo & Lusch 2004), customer-dominant logic (Heinonen et al. 2010), and service logic (Grönroos 2011b) have indicated the importance of the customer's role in creating value. More specifically, value creation takes place during usage and through the customer's integration of resources. This implies that customers use the resources provided by the firm (goods and/or services) and integrate them with other resources (goods, services, and/or information) and skills they possess to transform the potential value of these resources into real value or value-in-use (Grönroos 2008). Thus, the role of the customer is very significant since he is the one who creates value by integrating resources (Grönroos & Ravald 2011).

Since it is the customer who ultimately creates value, the firm can act as a value facilitator, which implies that the firm can facilitate the customer's value creation process by producing and delivering resources that represent potential value (or expected value-in-use) for the customer (Grönroos 2011b; Grönroos & Ravald 2011). However, first of all, the firm has to develop and communicate a value proposition which "can be thought of as an invitation to engage with the firm, for (usually mutual) benefit" (Vargo & Lusch 2012, p. 5). Value propositions are developed in order to communicate to customers regarding what they should expect (Edvardsson et al. 2012). Thus, a value proposition generally makes explicit the benefits expected to be gained and given up (Ballantyne et al. 2011). Edvardsson et al. (2012) have argued that the firm should not only communicate the expected value (in terms of expected benefits and/or costs) of a product or service but also

how this value could be created. In other words, value propositions should communicate the potential or expected value of a product or service *as well as* the role of the customer in creating real value out of this potential value. However, empirical research on the effect of explicitly communicating the customer's resource integrating role (CRIR) to the customer is still lacking.

From an expectation-disconfirmation perspective, communicating the CRIR in the value proposition can be essential to set the right expectations. Expectations play an important role in creating satisfied customers, since satisfaction is a function of expectation and (dis)confirmation (Oliver 1980; Chan 2004). More specifically, expectation-disconfirmation theory suggests that the more experiences with the offering are in line with prior expectations, the more favorable the evaluation of the offering will be. The evaluation of or satisfaction with an offering is based on a three stage process that involves expectation, performance, and confirmation/ disconfirmation (Chan 2004). As presented in Figure 9, these stages are in line with the three stages concerning value propositions and value creation mentioned by Ballantyne et al. (2011). More specifically, the value proposition creates expectations about value-in-use by communicating expected or potential value and also - as suggested in this study - the CRIR. The customer evaluates the value proposition and when the value proposition is accepted by the customer, the customer buys the product or service and *resource integration* takes place. Resource integration implies that the customer uses the resources provided by the firm (goods and/or services) and integrates them with other resources (goods, services, and/or information) and skills he possesses to transform the potential value of these resources into real value. Hence, both the firm and the customer *perform* their role in creating value-in-use: the customer as a value creator and the firm as a value facilitator. Finally, the customer evaluates whether the *value-in-use* is in line with prior expectations, which ultimately leads to (dis)satisfaction in terms of *confirmation or disconfirmation*.

Figure 9 Relation between value creation and expectation-disconfirmation theory



Hence, based on expectation-disconfirmation theory, the inclusion of the CRIR in the value proposition can have a positive effect on post-purchase evaluations, because it creates realistic expectations.

However, this chapter focuses on the pre-purchase effects of explicitly stating the CRIR in the advertised message. The relevance of this issue is underscored by the fact that different theoretical frameworks suggest opposing effects of the explicit statement of the CRIR in the advertisement on customer evaluative judgments. Explicitly communicating to the customer what he has to do can increase his expected effort, which can result in a negative effect on brand attitude and purchase intention. However, including the CRIR in the ad can also enhance the credibility of the ad and the advertiser, which can result in positive effects on attitudes and purchase intention. Based on existing advertising theories, this chapter presents a nomological web linking the inclusion of the CRIR in the advertised message with key outcomes. This provides the opportunity to test the net effect of the explicitness of the CRIR. The effects are organized around the hierarchy of effects model (HOE).

4.2 Theoretical background

The traditional HOE model describes the cognitive, affective and conative steps receivers of the ad go through while forming (or changing) brand attitudes and purchase intentions (Smith, Chen, & Yang 2008). Although there has been some criticism on HOE models (e.g., Barry & Howard 1990; Weilbacher 2001), Barry (2002) argues that all marketers communicate with customers in the hope of persuading them to do something and, in general, receivers of the information have to process (carefully or not) the information, value (positively or negatively) the information, and then behave in some way. The HOE framework is appealing, because it is simple, intuitive and logical (Barry 2002). This framework is used to organize the expected impact of including the CRIR in the ad into three broad categories: cognition, affect and conation. To shed light on each category, this chapter builds on previously developed advertising theories (i.e., proposition-probability model, attribution theory, dual mediation model).

4.2.1 Cognitive effects

Consistent with prior research (MacKenzie, Lutz & Belch 1986; MacKenzie & Lutz 1989), one can discern between ad cognitions (i.e., thoughts or perceptions related to the advertisement) and brand cognitions (i.e., thoughts or perceptions related to the advertised brand).

Ad cognitions

In this study, the first and foremost ad cognition is ad role clarity. In line with the work of Dellande et al. (2004), ad role clarity is defined as the customer's perceived clarity of information given in the ad about how the customer is expected to perform his or her job. This is a key cognitive perception, since the aim of including the CRIR in the ad is to let customers know what their role in the value creation process is. However, exposing the customer to a CRIR-including ad does not necessarily imply that the customer also perceives this CRIR.

The notion that the objective stimulus is not the same as the customer's subjective perception of the stimulus is in line with several findings in the

literature. Vakratsas and Ambler (1999) have developed a framework for studying how advertising works. This framework explicitly includes so-called 'filters' between the advertising input and the cognitive, affective, and conative responses of the HOE model. Examples of such filters are motivation and ability to process information (Vakratsas & Ambler 1999), which is in line with the elaboration likelihood model (Petty & Cacioppo 1981; Petty, Cacioppo, & Schumann 1983). Research on selective attention (e.g., Ratneshwar, Mick, & Reitiger 1990; Ratneshwar, Warlop, Mick, & Seeger 1997) has indicated that the same objective information can be processed differently by different people. Even though a complete review of the marketing literature on selective attention is beyond the scope of this study, it is worth noting that the determinants of attention can be classified as stimulus-related, situational, or individual factors (Ratneshwar et al. 1997). Hence, such factors can act as filters between the ad and the customer's perception of the ad.

Although the focus of this study is not on the customer's information process that occurs between ad exposure and the perception of ad role clarity, but on the subsequent effects of this ad role clarity, this process is taken into account by making a difference between the inclusion of the CRIR in the ad and the customer's perception of the CRIR (in terms of ad role clarity). Since the aim of the inclusion of the CRIR in the ad is to improve ad role clarity, the following hypothesis is put forward:

Hypothesis 1: Including the customer's resource integrating role in the ad positively affects ad role clarity.

Furthermore, based on the existing advertising literature, ad role clarity is expected to enhance ad creativity, ad credibility and advertiser credibility.

Ad creativity. In the academic literature, ad creativity has been defined by two major components: divergence and relevance. Some researchers posit that ad creativity is determined by divergence which refers to the degree to which an advertisement includes elements that are novel, different, or unusual (Smith et al. 2007; 2008). Divergence can be achieved in advertising by means of (1) originality or the inclusion of surprising or

unusual elements; (2) flexibility which refers to the inclusion of different ideas or switching from one perspective to another; (3) elaboration which implies the inclusion of unexpected details or the extension of basic ideas; (4) synthesis which refers to the combination of normally unrelated objects or ideas: and/or (5) artistic value which implies the inclusion of artistic verbal impressions or attractive colors and shapes (Smith et al. 2008). While most researchers have agreed that divergence is a central determinant of creativity, many researchers have argued that this is not enough, but that the ad also must be meaningful or relevant (e.g., Ang, Lee, & Leong 2007; Smith & Yang 2004). The relevance component involves the degree to which ad elements are meaningful, useful, or valuable to the customer (Smith et al. 2008). Smith and Yang (2004) have reviewed research across different domains and conclude that creativity only occurs when both divergence and relevance are high.

Ad role clarity is expected to result in an increase in perceived ad creativity, since the clarity of the customer's role can be described as divergent and relevant: it is unusual in advertisements and, additionally, it provides meaningful and valuable information to the customer.

Hypothesis 2: Ad role clarity positively affects ad creativity.

Ad credibility. Ad credibility can be defined as "the extent to which the consumer perceives claims made about the brand in the ad to be truthful and believable" (MacKenzie & Lutz 1989, p. 51). Thus, ad credibility implies the evaluation of the truth and believability of the content of the advertisement (Cotte, Coulter, & Moore 2005). Based on the proposition-probability model of Areni (2002), advertising messages consist of stated and implied propositions corresponding to (1) claims , i.e., the fundamental points being argued, (2) data, i.e., the evidence presented to support those claims, and (3) conditional rules linking the data to the claim. The acceptance of a claim can be described in terms of probability theory: the beliefs corresponding to the propositions in the claim can be represented as subjective probabilities ranging from 0 (complete rejection) to 1 (complete acceptance).This does not imply that individuals form actual probabilities, but message recipients do something *like* forming subjective probabilities in

response to messages (Areni 2002). Based on probability theory one can express the subjective probability the claim is true (i.e., p(claim)) as a function of the probability associated with the data (i.e., p(data)) and the conditional probability linking the data to the claim (i.e. p(claim | data)):

p(claim) = p(claim | data) x p(data) + p(claim | not data) x p (not data)

where p(data) + p(not data) = 1

Based on the work of Areni (2002), this study suggests that p(claim with resource integrating role) > p(claim without resource integrating role). Because the customer's role is essential to obtain the claimed benefits, it is expected that ad role clarity increases the probability the claim is true and the promised benefits will be obtained. Thus, ad role clarity is expected to enhance ad credibility.

Hypothesis 3: Ad role clarity positively affects ad credibility.

Advertiser Credibility. Based on attribution theory, consumers can attribute advertiser's claims either to the desire of the advertiser to sell or to the actual features of the brand being advertised (Settle & Golden 1974; Eisend 2007). Ad role clarity may lead the receiver of the message to conclude that the advertiser is telling the truth. This enhances the perception of advertiser credibility (Eisend 2006; 2007) which involves the perceived truthfulness or honesty of the advertiser (MacKenzie & Lutz 1989).

Hypothesis 4: Ad role clarity positively affects advertiser credibility.

Based on the existing literature, it is also hypothesized that advertiser credibility positively affects ad credibility (MacKenzie & Lutz 1989).

Hypothesis 5: Advertiser credibility positively affects ad credibility.

Brand cognitions

Regarding brand cognitions, expectancy-value theory was used because of three reasons. First, prior research has indicated that expectancy-value is a valid operationalization of brand cognitions (Rose, Miniard, & Bhatla 1990).

Second, the focus of this study is on creating value expectations based on the value proposition. Third, research regarding two-sided messages (i.e., messages that include both positive and negative information) has mentioned that expectancy-value theory offers much potential in investigating both positive and negative cognitive thoughts associated with two-sided messages (Crowley & Hoyer 1994). Since mentioning the brand's benefits as well as the CRIR (which can be perceived as negative information, since it is based on the customer's responsibility and effort) is comparable to two-sided messages, this study followed this reasoning and used expectancy-value as a means to capture brand cognitions.

To better discern between the positive and negative effects on expectancy-value, this study distinguished between expected benefits and expected effort, which is in line with the value literature (e.g., Woodruff 1997; Zeithaml 1988). In line with expectancy-value theory, expected effort and expected benefits were operationalized as a combination of evaluations (e.g., 'For me, a toothpaste that provides whiter teeth is… desirable-undesirable') and beliefs (e.g., 'How likely is it that this toothpaste provides whiter teeth? likely-unlikely'). Ad role clarity is expected to lead to an increase in expected benefits, because the perceived likelihood that the benefits will be obtained will be higher, but also an increase in expected effort, since the perceived likelihood that effort is required to get the claimed benefits is higher.

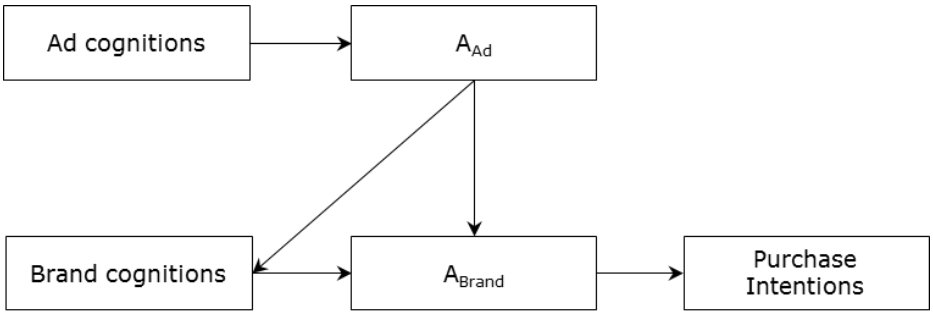
Hypothesis 6: Ad role clarity increases expected effort.

Hypothesis 7: Ad role clarity increases expected benefits.

4.2.2 Affective effects

To investigate the effects of ad and brand cognitions on attitudes, this study started from the dual mediation model (DMM) presented in Figure 10 (MacKenzie & Lutz 1989; MacKenzie et al. 1986).

Figure 10 Dual mediation model



Notes. A_{Ad} = attitude toward the ad; A_{Brand} = attitude toward the brand

The DMM, which is one of the most widely accepted models of advertising effects (Karson & Fisher 2005) and has been supported by a number of studies (e.g., MacKenzie et al. 1986; Homer 1990; Brown & Stayman 1992), posits a direct effect of attitude toward the ad (A_{Ad}) on attitude toward the brand (A_{Brand}) as well as an indirect effect via brand cognitions. In this way, the DMM "modified the Fishbeinian view that *only* brand beliefs affected brand attitudes" (Brown & Stayman 1992, p. 46, emphasis in original). Moreover, as Coulter and Punj (2004) have noted:

> With its inclusion of the linkage between attitude toward the ad and brand cognition, the DMM extended early elaboration likelihood theory to include the possibility that a peripheral cue (A_{Ad}) could also have an impact on the central route to persuasion by fostering message acceptance. (p. 53)

In this way, the DMM has contributed to the understanding of how the central and peripheral processes of the elaboration likelihood model can be intertwined (Homer 1990).

Based on the DMM, ad credibility and ad creativity (which are ad cognitions) are expected to have a positive effect on attitude toward the ad. Furthermore, Smith and colleagues (Smith et al. 2007; 2008) have shown that creative ads are significantly more effective than noncreative ads with respect to attitude toward the ad. Thus,

Hypothesis 8: Ad creativity positively affects attitude toward the ad.

With regard to ad credibility, previous research has indicated that when messages are perceived as more credible, the attitude toward the ad is more favorable (Cotte et al. 2005; Kavanoor, Grewal, & Blodgett 1997; MacKenzie & Lutz 1989). Hence, the following hypothesis is put forward:

Hypothesis 9: Ad credibility positively affects attitude toward the ad.

In line with the DMM literature (e.g. MacKenzie & Lutz 1989; Brown & Stayman 1992), a direct effect of attitude toward the ad on attitude toward the brand is expected.

Hypothesis 10: Attitude toward the ad positively affects attitude toward the brand.

However, as already mentioned, the DMM (e.g. MacKenzie & Lutz 1989; Brown & Stayman 1992) not only posits a direct effect of attitude toward the ad on attitude toward the brand but also an indirect effect via brand cognitions. Hence, the following hypotheses are formulated:

Hypothesis 11: Attitude toward the ad increases expected effort.

Hypothesis 12: Attitude toward the ad increases expected benefits.

Furthermore, a positive effect of expected benefits and a negative effect of expected effort on attitude toward the brand are hypothesized. These hypotheses are fueled by the value literature which states that value is a trade-off between benefits and sacrifices (Zeithaml 1988). Benefits are the positive side of the trade-off and costs (such as effort) constitute the negative side of the trade-off.

Hypothesis 13: Expected effort negatively affects attitude toward the brand.

Hypothesis 14:Expected benefits positively affects attitude toward the brand.

4.2.3 Conative effects

The final stage in the HOE model is the conation or intention stage (Smith et al. 2008). In line with the general advertising literature (e.g., Eisend 2007; Olson, Toy & Dover 1982; Sicilia, Ruiz, & Reynolds 2006) and the DMM (e.g. MacKenzie & Lutz 1989, Brown & Stayman 1992), this study hypothesizes that attitude toward the brand is positively related to purchase intention. Thus, the following hypothesis is formulated.

Hypothesis 15: Attitude toward the brand positively affects purchase intention.

The conceptual model and the hypotheses are presented in Figure 11.

4.3 Methodology, procedure, and analysis

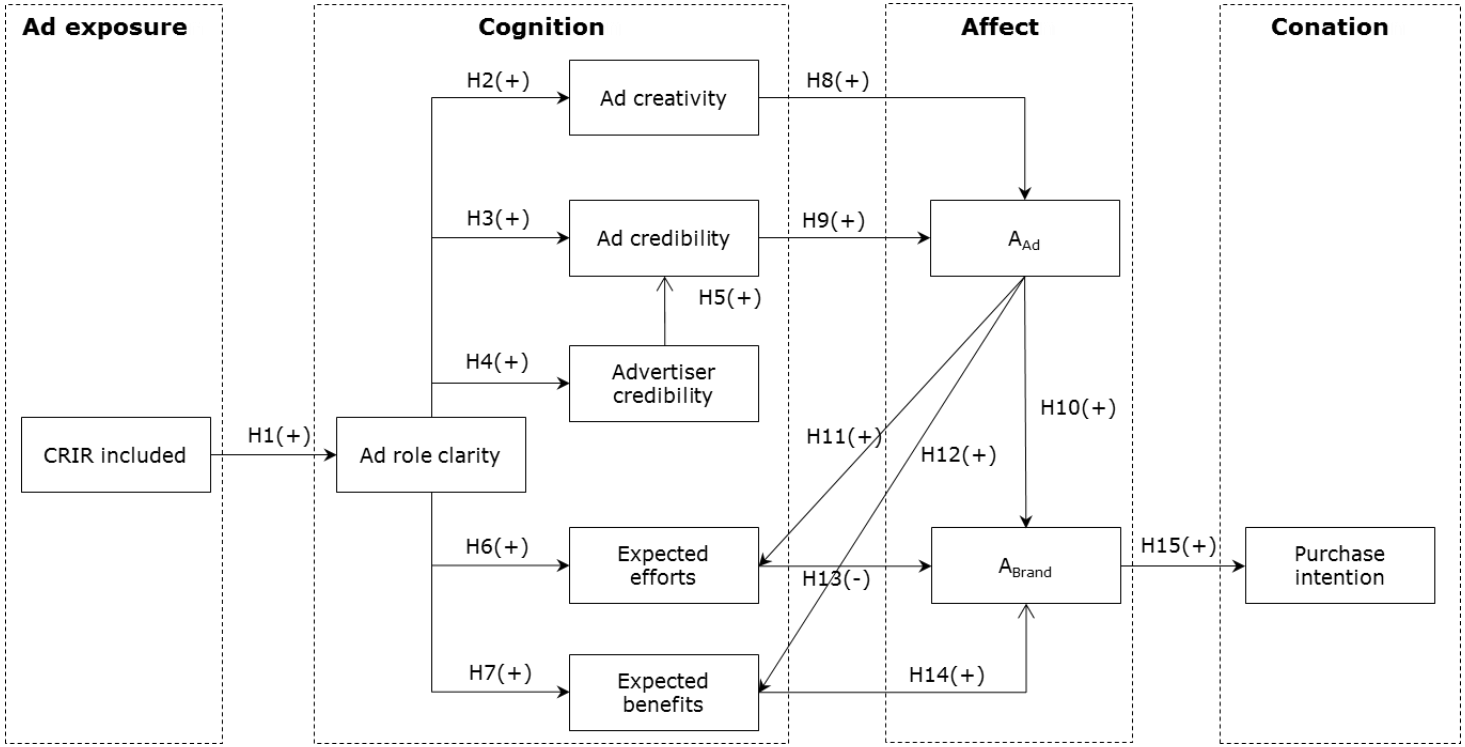
To test the conceptual model empirically, two studies were conducted. The replication across two settings provides a strong(er) test of the model and hypotheses.

4.3.1 Settings

Although value creation always requires resource integration from the customer, the role of the customer varies between settings. For example, chewing a chewing gum does not require a lot of resources from the customer, whereas driving a car requires a lot from the customer. This chapter focuses on offerings for which the resource integrating role of the customer can be clearly stated and for which this role is essential to obtain the benefits promised in an advertisement.

From a resource integration perspective, different types of resources, i.e., goods versus services, operate in different ways. Goods provided by the firm activate a self-service process in the customer sphere. When the customer purchases a good, it has potential value for the customer and he has to transform this potential value into real value. In this way, value is created through interactions between the customer and the good (Grönroos 2011b). However, in case of service activities, resource integration takes place in direct interaction with the firm itself.

Figure 11 Conceptual model



Notes: A_{Ad} = attitude toward the ad; A_{Brand} = attitude toward the brand; The signs between brackets indicate the hypothesized sign of the relationship

Based on the aforementioned argumentation, the model was tested in a product setting and a service setting. Study 1 examines a printed magazine advertisement for a unknown brand of toothpaste. Toothpaste was chosen because toothpaste ads often promise results (such as whiter teeth) without mentioning that the customer has to brush his teeth twice a day with the toothpaste to get result. If he does not integrate his other resources (time, toothbrush, brushing skills) in an appropriate way, the benefits promised in the value proposition (i.e., the advertised message) cannot be obtained. Study 2 tries to replicate the findings of Study 1 in a services-context and examines a printed magazine advertisement for a unknown fitness program. Similar to the toothpaste setting, a customer has to integrate his resources in terms of time and effort to get the promised results. However, in case of a fitness program, value is created through the interaction between the customer and the provider (fitness center) itself.

4.3.2 Procedure

Respondents first read an instruction page stating that the purpose of the study was to pretest an advertisement of a new brand of toothpaste (Study 1) or a new fitness program (Study 2). To exclude the effects of previous experiences with existing brands, an unknown brand was used for both studies. After looking at their own assigned advertisement (CRIR or no CRIR in the ad), respondents were asked to answer the given questions to provide their feedback on the advertisement. All variables were measured by means of 9-point scales. All items and their psychometric properties are presented in Table 22. Furthermore, Appendix F presents the PLS path model that was used for both studies as well as an extended report of the PLS-SEM results.

Table 22 Questionnaire

Variable	Outer loadings Study 1	Outer loadings Study 2
Ad role clarity		
The ad makes it clear what I have to do to obtain the benefits of the product.	.92	.91
The ad makes it clear what is expected from me if I want to obtain the results mentioned in the ad.	.94	.94
The ad does not make it clear what I have to do to obtain the results mentioned in the ad. (R)	.80	.81
The ad does not make it clear what is expected from me If I want to obtain the benefits of the product. (R)	.80	.82
Construct-level psychometric properties		
Study 1: $\lambda_1 = 3.07$; $\lambda_2 = .67$; $\alpha = .90$; AVE = .74		
Study 2: $\lambda_1 = 3.12$; $\lambda_2 = .56$; $\alpha = .91$; AVE = .76		
Ad credibility		
believable/unbelievable	.93	.95
untrustworthy/trustworthy	.95	.93
unrealistic/realistic	.93	.96
unconvincing/convincing	.88	.89
Construct-level psychometric properties		
Study 1: $\lambda_1 = 3.41$; $\lambda_2 = .30$; $\alpha = .94$; AVE = .85		
Study 2: $\lambda_1 = 3.47$; $\lambda_2 = .29$; $\alpha = .95$; AVE = .87		
Advertiser credibility		
not credible/credible	.95	.93
dishonest/honest	.97	.94
insincere/sincere	.97	.97
Construct-level psychometric properties		
Study 1: $\lambda_1 = 2.79$; $\lambda_2 = .13$; $\alpha = .96$; AVE = .93		
Study 2: $\lambda_1 = 2.70$; $\lambda_2 = .23$; $\alpha = .94$; AVE = .90		
Attitude toward the ad		
What is your overall evaluation of the advertisement?		
bad/good	.80	.85
unpleasant/pleasant	.92	.87
unfavorable/favorable	.93	.93
negative/positive	.89	.93
Construct-level psychometric properties		
Study 1: $\lambda_1 = 3.14$; $\lambda_2 = .53$; $\alpha = .91$; AVE = .78		
Study 2: $\lambda_1 = 3.22$; $\lambda_2 = .39$; $\alpha = .92$; AVE = .80		

Table 22 Questionnaire (continued)

Variable	Outer loadings Study 1	Outer loadings Study 2
Attitude toward the brand		
What is your overall evaluation of the advertised brand?		
bad/good	.91	.93
unpleasant/pleasant	.94	.96
unfavorable/favorable	.95	.97
negative/positive	.94	.97
Construct-level psychometric properties		
Study 1: $\lambda_1 = 3.50$; $\lambda_2 = .25$; $\alpha = .95$; AVE = .87		
Study 2: $\lambda_1 = 3.68$; $\lambda_2 = .18$; $\alpha = .97$; AVE = .92		
Purchase Intention		
What is the probability that you will purchase the advertised brand in the future?		
Unlikely/likely	.94	.95
Impossible/Possible	.96	.96
Construct-level psychometric properties		
Study 1: $\lambda_1 = 1.81$; $\lambda_2 = .19$; $\alpha = .89$; AVE = .90		
Study 2: $\lambda_1 = 1.83$; $\lambda_2 = .17$; $\alpha = .91$; AVE = .92		
Expected benefits = $\sum b_i * e_i$		
Study 1 Evaluations (e_i)	**Study 2 Evaluations (e_i)**	
For me, a toothpaste that …	For me, a fitness program that…	
… results in whiter teeth is… undesirable–desirable	… results in a better condition is… undesirable–desirable	
… results in healthier gums is… undesirable–desirable	… results in loss of fat is… undesirable–desirable	
… results in protection against cavities is… undesirable–desirable.	… results in a tighter figure is… undesirable–desirable	
… results in protection against teeth sensitivity is… undesirable–desirable	… results in an increase in physical strength is… undesirable–desirable.	
… results in a fresher breath is… undesirable–desirable	… results in a visible reduction in waistline is… undesirable–desirable.	
… fights dental plaque is… undesirable–desirable.		

Table 22 Questionnaire (continued)

Study 1 Beliefs (b_i)	**Study 2 Beliefs (b_i)**
How likely is it that this toothpaste …	How likely is it that this fitness program …
… results in whiter teeth? likely-unlikely	… results in a better condition? likely-unlikely
… results in healthier gums? likely-unlikely	… results in loss of fat? likely-unlikely
… results in protection against cavities? likely-unlikely	… … results in a tighter figure? likely-unlikely
… results in protection against teeth sensitivity? likely-unlikely	… results in an increase in physical strength? likely-unlikely
… results in a fresher breath? likely-unlikely	… results in a visible reduction in waistline? likely-unlikely
… fights dental plaque? likely-unlikely	
Expected effort = $\Sigma b_i * e_i$	
Study 1 Evaluations (e_i)	**Study 2 Evaluations (e_i)**
For me, a toothpaste that expects effort from me to get results is… undesirable–desirable	For me, a fitness program that expects effort from me to get results is… undesirable–desirable
How likely is it that this toothpaste expects effort from me to get results? likely-unlikely	How likely is it that this fitness program expects effort of me to get results? likely-unlikely

Ad role clarity. Ad role clarity was measured by adapting the scale of Dellande et al. (2004). More specifically, ad role clarity was assessed by means of the respondents agreement (1 = strongly disagree; 9 = strongly agree) with the following four statements: 'The ad makes it clear what I have to do to obtain the benefits of the product'; 'The ad makes it clear what is expected from me if I want to obtain the results mentioned in the ad'; 'The ad does not make it clear what I have to do to obtain the results mentioned in the ad'; 'The ad does not make it clear what is expected from me if I want to obtain the benefits of the product'.

Attitudes. Attitude toward the ad and attitude toward the brand were measured by using four semantic differential scales: bad/good, unpleasant/pleasant, unfavorable/favorable, negative/positive (Bergkvist & Rossiter 2007; MacKenzie & Lutz 1989; Smith et al. 2007).

Ad and advertiser credibility. Ad credibility was assessed by asking respondents to indicate how believable/unbelievable; untrustworthy /trustworthy, unrealistic/realistic, and unconvincing/convincing they felt the ad was (Cotte et al. 2005; MacKenzie & Lutz 1989). In a similar way, advertiser credibility was assessed by asking respondents to indicate how untrustworthy/trustworthy, dishonest/honest, and not credible/credible they thought the advertiser was (Eisend 2007; MacKenzie & Lutz 1989).

Ad creativity. According to Smith and colleagues (Smith & Yang 2004; Smith et al. 2007; 2008; Yang & Smith 2009), ad creativity is a combination of divergence and relevance and, hence, ad creativity only occurs when both components are high. This study follows the DxR (i.e., divergence * relevance) conceptualization of ad creativity and operationalizes ad creativity in the same way as Smith et al. (2008, p. 50) who "use the DxR interaction term to represent ad creativity in the SEM". To measure relevance and divergence, the scale suggested by Smith et al. (2007; 2008) was used. More specifically, to measure divergence, respondents were asked to indicate their agreement with the following statements: 'The ad was different'; 'The ad was uncommon'; 'The ad was unusual'; and relevance was measured using the following statements: 'The ad was relevant to me'; 'The ad was useful to me'. The single index of ad creativity used in the analyses was obtained by multiplication of the sum of the responses of the three divergence items with the sum of the responses of the two relevance items, which is in line with the recommendation of Goodhue, Lewis, and Thompson (2007).

Expected benefits and effort. Expected benefits and expected effort were operationalized in accordance with the expectancy value theory so a Fishbein multiattribute model was used (Rose et al. 1990). Expected benefits were assessed by the sum of the multiplications of respondents' evaluations (e_i) of the benefits used in the ad and beliefs (b_i) about the advertised brand.

$$\text{Expected benefits} = \sum e_i \; b_i$$

with e_i = respondents' evaluations of the benefits used in the ad

b_i = beliefs about the advertised brand with regard to benefits

The same procedure was followed for expected effort.

$$\text{Expected effort} = \sum e_j \, b_j$$

with e_j = respondents' evaluations of the effort used in the ad

b_j = beliefs about the advertised brand with regard to effort

Some example items for toothpaste are: 'For me, a toothpaste that results in whiter teeth is… desirable-undesirable' (evaluation) and 'How likely is it that this toothpaste results in whiter teeth? likely-unlikely' (belief). Some example items for the fitness program are: 'For me, a fitness program that results in a better condition is… desirable-undesirable' (evaluation) and 'How likely is it that this fitness program results in a better condition? likely-unlikely' (belief).

Purchase intention. Finally, intention to purchase the advertised toothpaste in the future was captured by two scales: unlikely/likely and possible/impossible.

The items used in Study 1 (toothpaste) and Study 2 (fitness program) can be found in Table 22. All variables used in this chapter have a reflective measurement model.

4.3.3 Parameter estimation

The hypotheses were tested using a Partial Least Squares approach to Structural Equations Modeling (PLS-SEM). The statistical significance of the parameter estimates was evaluated by using bootstrapping procedures based on 5000 samples (Preacher & Hayes 2008). PLS-SEM has less stringent sample size and distributional requirements than covariance-based SEM (Hair et al. 2011). Furthermore, PLS-SEM was used because of the complexity of the conceptual model and because of the rather exploratory

nature of this research (Hair et al. 2011). Appendix B provides more information about the PLS-SEM approach.

To incorporate the experimental design (CRIR versus no CRIR in the ad) in a PLS-SEM context, the procedure as suggested by Streukens et al. (2010) was employed. Hence, the experimental manipulation (CRIR versus no CRIR in the ad) was modeled as a latent variable with a dummy variable as its formative indicator (Streukens et al. 2010). The significance of the path coefficient from this dummy variable to ad role clarity indicates whether the inclusion of the CRIR in the ad has an effect on ad role clarity.

4.4 Study 1

4.4.1 Stimuli

The study was based on one manipulated factor with two levels: no CRIR in the ad versus CRIR in the ad. Both ads contained the following benefits: whiter teeth, healthier gums, fights dental plaque, fights dental cavities, fights teeth sensitivity, fresher breath. These benefits were based on an investigation of different ad messages used in toothpaste advertising. However, the ad with the CRIR mentioned that the customer has to brush his teeth twice a day to get the promised results (see Figure 12).

A pretest was conducted to test whether the ads significantly differed with regard to ad role clarity. The participants were 109 undergraduate students taking an introductory marketing class at a Belgian university. It was found that the ad with the CRIR (M = 5.89; SD = 1.90) was regarded as being more role clear than the ad without CRIR (M = 3.65; SD = 1.76; $p < .001$).

Figure 12 Ad with or without CRIR used in Study 1

4.4.2 Participants

Data were collected in cooperation with an online research bureau. Respondents were randomly assigned to the CRIR or no CRIR condition and were disqualified if they did not use toothpaste, which resulted in a final sample size of 207 respondents (121 women, 86 men; mean age M = 37.27, SD = 12.53).

4.4.3 Results

Before interpreting the structural model, the measurement model was evaluated. All scales used in this study possessed favorable psychometric properties (see Table 22). A correlation matrix is presented in Table 23 and an extensive report of the PLS-SEM results can be found in Appendix F.

Table 23 Summary of latent variable correlations

	1	2	3	4	5	6	7	8	9	10	
1. Ad creativity		.47	.10	.46	.35	.38	.11	.32	.17	.44	Study 1
2. Ad credibility	.41		.24	.66	.66	.58	.02	.43	.18	.48	
3. Ad role	.27	.35		.23	.35	.30	.29	.46	.40	.22	
4. Adv.	.37	.75	.28		.62	.66	.08	.43	.20	.40	
5. Aad	.36	.76	.28	.66		.59	.06	.45	.26	.38	
6. Abrand	.46	.69	.45	.65	.66		.05	.49	.30	.44	
7. CRIR	.00	.04	.11	-	.07	.06		.03	.15	.12	
8. Exp. benefits	.23	.49	.35	.43	.41	.55	.04		.50	.41	
9. Exp. effort	.11	.26	.15	.30	.26	.36	-	.67		.30	
10. PI	.51	.46	.26	.38	.36	.48	.04	.45	.28		
					Study 2						

Notes: Adv. credibility = Advertiser credibility; Aad = Attitude toward the ad; Abrand = Attitude toward the brand; Exp. benefits = Expected benefits; Exp. effort = Expected effort; PI = Purchase intention

Starting with an evaluation of the overall model performance, the structural model was supported by the data as all R^2-values were statistically significant except for ad creativity (see Table F.3 in Appendix F). An overview of the path coefficients can be found in Table 24.

Table 24 Results of Study 1

Hypothesized relationship				**Path Coefficient**	
H1	CRIR	→	Ad role clarity	.29	***
H2	Ad role clarity	→	Ad creativity	.10	ns
H3	Ad role clarity	→	Ad credibility	.09	ns
H4	Ad role clarity	→	Advertiser credibility	.23	***
H5	Advertiser credibility	→	Ad credibility	.64	***
H6	Ad role clarity	→	Expected effort	.35	***
H7	Ad role clarity	→	Expected benefits	.34	***
H8	Ad creativity	→	Attitude toward the ad	.05	ns
H9	Ad credibility	→	Attitude toward the ad	.63	***
H10	Attitude toward the ad	→	Attitude toward the brand	.46	***
H11	Attitude toward the ad	→	Expected effort	.14	*
H12	Attitude toward the ad	→	Expected benefits	.34	***
H13	Expected effort	→	Attitude toward the brand	.05	ns
H14	Expected benefits	→	Attitude toward the brand	.26	***
H15	Attitude toward the brand	→	Purchase Intention	.44	***

Notes. Significance based on percentile bootstrap confidence intervals: * significant at .10 level; ** significant at .05 level; *** significant at .01 level, ns indicates non-significance

When looking at the path coefficients, a significant positive effect of the inclusion of the CRIR in the ad on ad role clarity was found (H1 supported; β = .29; CI_{99} = [.12;.45]). Ad role clarity had a significant positive effect on advertiser credibility (H4 supported; β = .23; CI_{99} = [.04;.45]) but did not have a significant direct effect on ad credibility (H3 not supported; β = .09; CI_{90} = [-.03;.22]). However, since advertiser credibility enhanced ad credibility (H5 supported; β = .64; CI_{99} = [.48;.77]), ad role clarity influenced ad credibility via advertiser credibility. The effect of ad role clarity on ad creativity was not significant (H2 not supported; β = .10; CI_{90} = [-.02;.24]). With regard to brand cognitions, ad role clarity increased both expected effort (H6 supported; β = .35; CI_{99} = [.18;.52]) and expected benefits (H7 supported; β = .34; CI_{99} = [.17;.50]).

Regarding the affective effects, ad creativity did not have a significant effect on attitude toward the ad (H8 not supported; β = .05; CI_{90} = [.-.05;.16]). However, ad credibility had a significant positive effect on attitude toward the ad (H9 supported; β = .63; CI_{99} = [.42;.80]), which on its turn positively influenced attitude toward the brand (H10 supported; β = .46; CI_{99} = [.32;.60]). In addition, attitude toward the ad increased expected effort (H11 supported on .10 level; β = .14; CI_{90} = [.01;.25]) and expected benefits (H12 supported; β = .34; CI_{99} = [.17;.49]). Expected benefits enhanced attitude toward the brand (H14 supported; β = .26; CI_{99} = [.07;.43]), but expected effort did not have a significant effect on attitude toward the brand (H13 not supported; β = .05; CI_{90} = [-.06;.15]).

Finally, a significant effect of attitude toward the brand on purchase intention was found (H15 supported; β = .44; CI_{99} = [.27;.60]).

To investigate the effect of the inclusion of the CRIR on all outcome variables, the total effects and their significance were examined. These can be found in Table 25.

Table 25 Total effects of CRIR Study 1

Total effect of CRIR		
→ Ad creativity	.03	ns
→ Ad credibility	.07	***
→ Ad role clarity	.29	***
→ Advertiser credibility	.07	***
→ Attitude toward the ad	.05	***
→ Attitude toward the brand	.06	***
→ Expected benefits	.11	***
→ Expected effort	.11	***
→ Purchase Intention	.02	***

Notes. Significance based on percentile bootstrap confidence intervals:
* significant at .10 level; ** significant at .05 level; *** significant at .01 level,
ns indicates non-significance

Furthermore, common method bias was assessed. Common method bias or common method variance can be defined as "variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al. 2003, p. 879). If common method bias is present, it influences the magnitude of the elements of the inter-construct correlation matrix. Following the correlation-based marker technique, which builds on the notion of controlling for common method bias by partialling out shared variance in zero-order correlations associated with a so-called marker variable that serves as a proxy for common method bias, we selected the construct that has the lowest correlation with other constructs as a marker variable (Lindell & Whitney 2001; Bagozzi 2011). Analytically, the approach leads to two data matrices. One with the original zero-order correlations and one with the correlations with the method bias filtered out. The presence of significant common method bias is reflected by a statistically significant difference between the original zero-order and partial correlation coefficient. For this study, divergence was used as the marker variable. The reason to opt for divergence is because (1) divergence is not included explicitly in the model, but only in a multiplication with relevance in order to calculate the value of ad creativity; (2) ad creativity has no or weak effects in the conceptual model; and (3) the correlations between divergence and the

other constructs in the model is rather low. The results indicated that common method bias did not pose a risk to the interpretation of the data.

4.4.4 Summary

The results of Study 1 show that the explicit inclusion of the CRIR in the ad enhances ad role clarity, which is defined as the customer's perceived clarity of information given in the ad about how the customer is expected to perform his or her job. This first relationship in the conceptual model is a very important one, since the aim of including the CRIR in the ad is to let customers know what their role in the value creation process is.

The results show that the effect of ad role clarity on ad creativity is not significant, thus ad role clarity is not perceived as divergent and relevant. However, ad role clarity does enhance advertiser credibility, which on its turn enhances ad credibility. Thus, when the receiver of the ad perceives the ad as being more role clear, he perceives the advertiser as more truthful and honest and, subsequently, finds the ad more truthful and believable. Subsequently, ad credibility leads to an enhancement in attitude toward the ad.

Furthermore, ad role clarity increases expected effort and expected benefits. Thus, when the customer perceives the ad as clearly stating what his role is in order to obtain results, he expects that he has to do more effort but also expects the benefits to be more likely to obtain. Attitude toward the ad also influences expected effort and expected benefits which is in line with the dual mediation model, that states that a peripheral cue (i.e., attitude toward the ad) could also have an impact on the central route to persuasion (i.e., expected benefits and effort).

Attitude toward the ad has a positive effect on attitude toward the brand. Moreover, expected benefits enhance attitude toward the brand, whereas the effect of expected effort on attitude toward the brand is not significant. Finally, attitude toward the brand enhances purchase intention.

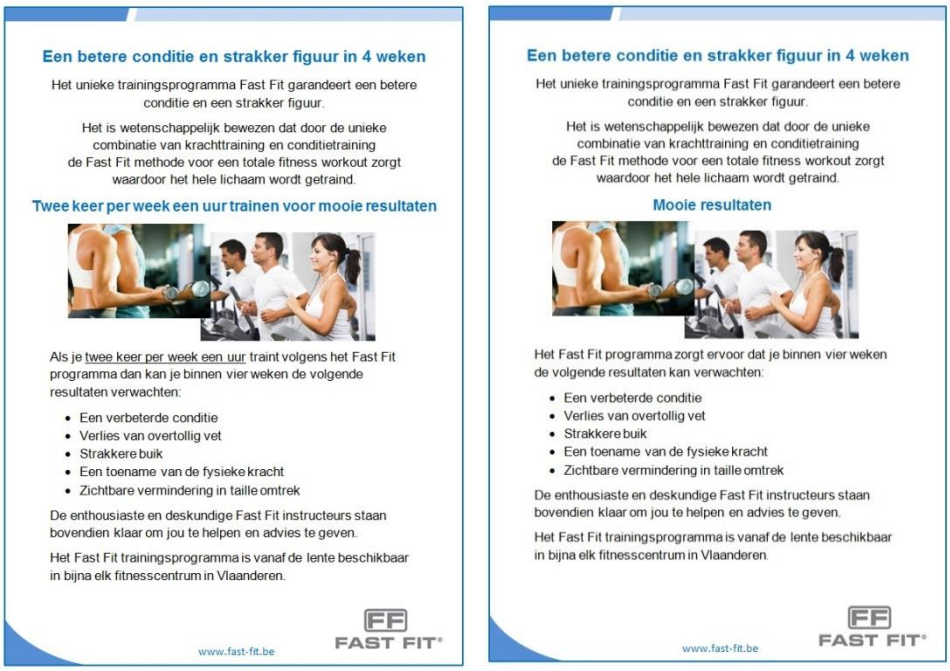
4.5 Study 2

Replicating Study 1 with a different setting provides an additional test of the conceptual model. This study examines a printed magazine advertisement for an unknown fitness program.

4.5.1 Stimuli

The study was based on one manipulated factor with two levels: no CRIR in the ad versus CRIR in the ad. Both the CRIR ad and the non-CRIR ad contained the following benefits: better condition, loss of fat, tighter figure, increase in physical strength, and visible reduction in waistline. These benefits were based on an investigation of different ad messages used in advertisements for fitness programs. However, the ad with the CRIR mentioned that the customer has to exercise for one hour twice a week to get the promised results (see Figure 13).

Figure 13 Ad with or without CRIR used in Study 2



A pretest was conducted to test whether the ads significantly differed with regard to ad role clarity. Based on a sample of 69 respondents, it was found that the ad with the CRIR (M = 5.76; SD = 2.08) was regarded as being more role clear than the ad without CRIR (M = 3.94; SD = 2.03; $p < .001$).

4.5.2 Participants

Data were collected in cooperation with an online research bureau. Respondents were randomly assigned to the CRIR or no CRIR condition, which resulted in a final sample size of 228 respondents (110 women, 118 men; mean age *M* = 38.75, *SD* = 6.05).

4.5.3 Results

Before interpreting the structural model, the measurement model was evaluated. All scales used in this study possessed favorable psychometric properties (see Table 22). A correlation matrix appears in Table 23 and an extensive report of the PLS-SEM results can be found in Appendix F.

Starting with an evaluation of the overall model performance, the structural model was supported by the data as all R^2-values were statistically significant except for ad role clarity (see Table F.3 in Appendix F). An overview of the path coefficients can be found Table 26.

Inspection of the path coefficients revealed that the positive effect of the inclusion of the CRIR in the ad on ad role clarity was not significant (H1 not supported; $\beta = .11$; $CI_{90} = [.00;.22]$). In a post hoc analysis (see Paragraph 4.5.4), this result will be further examined.

In contrast to the results of Study 1, ad role clarity had a significant positive effect on ad creativity (H2 supported; $\beta = .27$; $CI_{99} = [.12;.42]$). Ad role clarity had a positive effect on ad credibility (H3 supported; $\beta = .15$; $CI_{99} = [.03;.28]$) and advertiser credibility (H4 supported; $\beta = .28$; $CI_{99} = [.12;.45]$). Advertiser credibility positively affected ad credibility (H5 supported; $\beta = .70$; $CI_{99} = [.58;.80]$).

Table 26 Results of Study 2

Hypothesized relationship				Path Coefficient	
H1	CRIR	→	Ad role clarity	.11	ns
H2	Ad role clarity	→	Ad creativity	.27	***
H3	Ad role clarity	→	Ad credibility	.15	***
H4	Ad role clarity	→	Advertiser credibility	.28	***
H5	Advertiser credibility	→	Ad credibility	.70	***
H6	Ad role clarity	→	Expected effort	.09	ns
H7	Ad role clarity	→	Expected benefits	.26	***
H8	Ad creativity	→	Attitude toward the ad	.06	ns
H9	Ad credibility	→	Attitude toward the ad	.74	***
H10	Attitude toward the ad	→	Attitude toward the brand	.53	***
H11	Attitude toward the ad	→	Expected effort	.23	***
H12	Attitude toward the ad	→	Expected benefits	.33	***
H13	Expected effort	→	Attitude toward the brand	.00	ns
H14	Expected benefits	→	Attitude toward the brand	.33	***
H15	Attitude toward the brand	→	Purchase Intention	.48	***

Notes. Significance based on percentile bootstrap confidence intervals: * significant at .10 level; ** significant at .05 level; *** significant at .01 level, ns indicates non-significance

With regard to brand cognitions, ad role clarity increased expected benefits (H7 supported; $\beta = .26$; $CI_{99} = [.10;.41]$) but not expected effort (H6 not supported; $\beta = .09$; $CI_{90} = [-.03;.21]$).

When examining the affective effects, the results showed that ad creativity did not have a significant effect on attitude toward the ad (H8 not supported; $\beta = .06$; $CI_{90} = [.-.02;.14]$). However, ad credibility had a significant positive effect on attitude toward the ad (H9 supported; $\beta = .74$; $CI_{99} = [.67;.80]$), which on its turn positively influenced attitude toward the brand (H10 supported; $\beta = .53$; $CI_{99} = [.39;.66]$). Additionally, attitude toward the ad increased expected effort (H11 supported; $\beta = .23$; $CI_{99} = [.07;.39]$) and expected benefits (H12 supported; $\beta = .33$; $CI_{99} = [.19;.48]$). Expected benefits positively affected attitude toward the brand (H14 supported; $\beta = .33$; $CI_{99} = [.16;.51]$), but expected effort did not have a significant effect on attitude toward the brand (H13 not supported; $\beta = .00$; $CI_{90} = [-.10;.09]$).

Finally, attitude toward the brand enhanced purchase intention (H15 supported; $\beta = .48$; $CI_{99} = [.33;.60]$).

To investigate the effect of the inclusion of the CRIR on all outcome variables, the total effects and their significance were examined. These can be found in Table 27.

Table 27 Total effects of CRIR Study 2

Total effect of CRIR	Total sample	Female sample	Male sample
→ Ad creativity	.03 ns	.05 *	.00 ns
→ Ad credibility	.04 ns	.09 **	.00 ns
→ Ad role clarity	.11 ns	.24 **	-.01 ns
→ Advertiser credibility	.03 ns	.06 **	.00 ns
→ Attitude toward the ad	.03 ns	.07 **	.00 ns
→ Attitude toward the brand	.03 ns	.07 **	.00 ns
→ Expected benefits	.04 ns	.09 **	.00 ns
→ Expected effort	.02 ns	.01 ns	.00 ns
→ Purchase Intention	.01 ns	.03 *	.00 ns

Notes. Significance based on percentile bootstrap confidence intervals: * significant at .10 level; ** significant at .05 level; *** significant at .01 level, ns indicates non-significance

Furthermore, common method bias was assessed following the correlation-based marker technique. Similar to Study 1, we used divergence as the marker variable. The results indicated that common method bias did not pose a risk to the interpretation of the data.

4.5.4 Post-hoc analysis

In this post-hoc analysis, the effect of including the CRIR in the ad on ad role clarity is further investigated, because the underlying hypothesis (H1) was not supported in Study 2.

The findings of Chapter 3 already indicated that gender acts as a potential moderator when studying the effect of stimuli on response variables. Furthermore, there is a significant body of evidence supporting the view that gender indeed plays a critical role in influencing perceptions and behaviors in

a wide variety of domains (e.g., Venkatesh & Morris 2000; Cramphorn 2011).

Hence, this post-hoc analysis assesses the moderating effect of gender in the relationship between the inclusion of the CRIR in the ad and perceived ad role clarity. To assess this gender-effect, the PLS multi-group analysis (PLS-MGA) developed by Henseler and colleagues (Henseler 2012; Henseler, Ringle, & Sinkovics 2009) was used. The working principle of this PLS-MGA was as follows: (1) the data were divided into subsamples according to the grouping variable (i.e., men and women); (2) the PLS path model was estimated for each subsample; (3) each subsample became subject to a separate bootstrap analysis (based on 5000 bootstrap samples); (4) the bootstrap estimates were used to assess the robustness of the subsample estimates (Henseler 2012). More information about PLS-MGA can be found in Appendix B.

Before conducting the PLS-MGA, measurement invariance was evaluated. This implies that the outer loadings of the measurement models must not differ significantly between groups (Eberl 2010). If lack of measurement invariance is found, this could imply that the meaning of items is not the same for male and female respondents. To assess measurement invariance, the percentile confidence intervals of the differences between the bootstrapped outer loadings of the male sample and the bootstrapped outer loadings of the female sample were calculated for each item. At the 5% level, no significant differences were found between the male and female sample. Consequently, we can proceed to the interpretation of the results of the PLS-MGA.

The results of this PLS-MGA indicate that the positive effect of the inclusion of the CRIR in the ad on ad role clarity was significant for the female sample (β = .24; CI_{95} = [.05;.41]) but not for the male sample (β = -.01; CI_{90} = [-.16;.15]).

To examine this moderating effect into more detail, the same analysis was done for Study 1. However, the results of the PLS-MGA for Study 1 show that the path coefficient for both men and women were significant. Although

the path coefficient for women (β = .33; CI_{99} = [.10;.54]) was larger than the path coefficient for men (β = .23; CI_{95} = [.02;.41]), the difference between the path coefficients was not significant (PLS-MGA *p*-value = .23).

As mentioned in Paragraph 4.2.1, so-called 'filters' exist between the advertising input and the cognitive, affective and conative responses of the HOE model. These filters can be stimuli-related, situational or individual (Ratneshwar et al. 1997). Although these filters were not the focus of this study, they are taken into account here, because of the gender-effect found for Study 2.

Bem (1981) has argued that women and men process information based on different cognitive structures which, in turn, determine and direct their perceptions. Based on the results of the PLS-MGA of Study 1 and 2, however, it can be concluded that the moderating effect of gender depends on the setting. This implies that the 'filter' that exists between the objective stimulus (the ad) and the perception of ad role clarity is a combination of the customer's gender and the advertised offering. Although not tested empirically, several reasons can account for the effect found in this post-hoc analysis.

First, it is possible that the fitness program was perceived as not relevant (enough) to men. Previous research on gender differences and exercise behavior (e.g., Jonason 2007; Mealey 1997) has indicated that women prefer exercises that are intended to lose weight with emphasis on their lower body, while men prefer exercises that are aimed at gaining muscle mass and enhance their upper body. Since the ad used in Study 2 is mainly focused on losing weight and getting a better figure and tighter waist, it is possible that men believe that the ad is not relevant to them. Existing research on consumers' information processing (e.g., Petty & Cacioppo 1981; Petty et al. 1983; Vakratsas & Ambler 1999; Wan, & Ricker 2013; Weilbacher 2003) has clearly indicated that people process information less carefully when they believe that the information is not personally relevant. A person who is not interested in following a fitness program aimed at losing weight, getting a better figure and tighter waist, will not expend the effort required to think about the product-relevant arguments in the ad. Hence, it

is possible that men processed the ad less carefully and, as a result, did not perceive the CRIR, which explains the nonsignificant relationship with perceived ad role clarity.

Second, it could be that men desired more detailed information about the specific exercises they have to perform in the fitness program. As already mentioned in Chapter 3, men are more system-oriented than women (based on the empathizing-systemizing theory developed by Baron-Cohen 2003; 2005) and, hence, they want to know how things work. Since it is common knowledge how to brush your teeth, detailed information is not required in Study 1. However, with regard to fitness programs, a variety of exercises can be done to enhance your figure, strength and/or condition. This lack of detailed information could explain why men did not perceive that the customer's role is clearly stated in the ad.

Based on the significant results of the pretest of Study 2 (see Paragraph 4.5.1), it seems that the first reason is the most likely. The pretest was conducted with a sample of respondents who were aware of 'the scientific nature' of the ad and the questionnaire. Hence, they knew that the ad was used for scientific research. However, the respondents of the 'real' study were obtained via a marketing research bureau. These respondents did not know about 'the scientific nature' of the study and thought it was a marketing research requested by FastFit. Hence, it can be expected that the respondents of the pretest sample paid close attention to the ad because of the scientific character of the study, whereas the respondents of the main study only paid attention when they thought the ad was relevant to them. Although this conclusion needs empirical justification before real statements can be made, the idea that the fitness program was perceived as not relevant (enough) to the male sample seems to be the most plausible explanation.

4.5.5 Summary

The findings of Study 2 show that the explicit inclusion of the CRIR in the ad has no significant effect on ad role clarity. As stated before, this first relationship in the conceptual model is a very important one, since the aim

of including the CRIR in the ad is to let customers know what their role in the value creation process is. A post-hoc analysis was conducted to further examine this result. This post-hoc analysis assessed the moderating effect of gender in the relationship between the inclusion of the CRIR in the ad and perceived ad role clarity. To clarify the nature of this gender effect, a multi-group analysis (i.e., male vs. female sample) was performed for Study 1 and 2. Based on the results of the post-hoc analysis, it can be concluded that the moderating effect of gender depends on the setting. This implies that the 'filter' that exists between the objective stimulus (the ad) and the perception of ad role clarity is a combination of the customer's gender and the advertised offering. More specifically, the gender effect was present for the fitness program but not for the toothpaste. Although several possible explanations where provided in the post-hoc analysis, additional research is necessary to investigate these findings into more detail.

Furthermore, the results show that ad role clarity enhances ad creativity, ad credibility and advertiser credibility, and that advertiser credibility positively affects ad credibility. Ad credibility has a positive effect on attitude toward the ad, whereas the effect of ad creativity on attitude toward the ad was not significant.

Ad role clarity increases expected benefits but not expected effort. Attitude toward the ad influences expected effort and expected benefits which is in line with the peripheral route of the dual mediation model. Attitude toward the ad has a positive effect on attitude toward the brand. Moreover, expected benefits enhances attitude toward the brand, whereas the effect of expected effort on attitude toward the brand is not significant. Finally, attitude toward the brand enhances purchase intention.

4.6 Discussion

Overall, this chapter examines Edvardsson et al.'s (2012) statement that value propositions should communicate the potential value of a product or service *as well as* the role of the customer as a resource integrator. This chapter focused on the pre-purchase effects of explicitly stating the CRIR in the advertised message and, based on existing advertising theories,

presented a nomological web linking the inclusion of the CRIR in the advertised message with key outcomes. In this way the net effect of the explicitness of the CRIR could be assessed. The relevance of testing the net effect is underscored by the fact that different theoretical frameworks suggest opposing effects of the explicit statement of the CRIR in the advertisement on customer evaluative judgments. This chapter provides support for a positive net effect of including the CRIR in the ad.

A very important boundary condition with regard to the inclusion of the CRIR in the advertised message is the effect of so-called 'filters' on the relationship between the advertised CRIR and the perception of ad role clarity. Although the focus of this research was not on the process between the objective stimulus (i.e., the ad with the CRIR) and the perception of the CRIR, the results of Study 2 indicate that this is a very important step. If the customer does not perceive the CRIR, it can not influence pre- or post-purchase evaluations and perceptions. Thus, it is crucial that the customer perceives the CRIR. Therefore, additional research is necessary with regard to the possible 'filters' that enhance or hamper the perception of ad role clarity.

The results of this chapter provide empirical evidence suggesting that including the customer's resource integrating role (CRIR) in the value proposition is effective when enhancing ad role clarity. Ad role clarity enhances advertiser credibility and ad credibility. This ultimately leads to better attitudes toward the ad and the brand, and subsequently an increase in purchase intentions.

Furthermore, the results show a significant effect of ad role clarity on expected benefits. The increase in expected benefits leads to an enhanced attitude toward the brand and ultimately to an increase in purchase intention. In line with the dual mediation model, the results indicate a significant direct effect of attitude toward the ad on attitude toward the brand but also an indirect effect via expected benefits. The rationale behind this indirect effect is that "consumers' affective reactions to ads influence their propensity to accept message content" (Homer 1990, p. 90).

Although ad role clarity can also increase expected effort (Study 1), this does not result in a 'penalty' with regard to brand attitude.

4.7 Limitations and further research

Several limitations and further research suggestions deserve to be mentioned.

First, measures of actual purchase behavior, rather than purchase intentions, could enhance the soundness of this study. Unfortunately, such behavioral data are often difficult and expensive to obtain. In addition, it should be noted that, although a significant positive association between intention and behavior exists, the conversion of intentions into behavior is moderated by various factors (e.g., Seiders et al. 2005).

Second, although this chapter mentioned a possible positive effect on post-purchase evaluations based on the expectation-disconfirmation paradigm, a fruitful area of further research is to investigate this post-purchase effect empirically.

Third, the process between the objective stimulus (ad exposure) and the perception of ad role clarity needs further investigation. Although the post-hoc analysis conducted for Study 2 revealed possible explanations for the gender-effect that occurred for this study, additional research is needed to empirically test these findings. Furthermore, additional boundary conditions (beyond gender) should be examined.

Fourth, additional studies for other products and services should be conducted to provide additional support and increase the generalizability of this chapter's findings.

Fifth, to investigate the effect of ad role clarity on expected effort, the estimated effort should be taken into account. Estimated effort involves the customer's estimate of the objective effort required to get result (e.g., in hours or times a week). This estimated effort can be used as some kind of reference point when evaluating expected effort. This can particularly affect the expected effort in the non-CRIR condition, because there is no other

reference point to evaluate effort. For example, in the fitness study, when the CRIR is not included in the ad, some respondents could estimate that they should train each day to get result whereas other respondents think that they should train once a week. This is a major concern when investigating the effect of the CRIR on expected effort and it should be taken into account in further research. This could also be the reason why the relationship between ad role clarity and expected effort was not significant for Study 2.

Sixth, although the introduction of this chapter mentioned possible opposing effects of the inclusion of the CRIR in the ad, further research is needed to examine these effects in more detail. More specifically, empirical research is necessary to answer the following questions. When does the CRIR in the ad has a positive effect and when does it have a negative effect on attitude and intention? How far can the firm go with regard to the customer's role? Is there some level of effort that negatively affects attitudes and intention? Or maybe some role expectations are not realistic or credible anymore? For example, a fruitful avenue for further research is to investigate the effect of the CRIR on expected effort in more detail. Although the dominant assumption is that effort evokes negative evaluations and that people prefer easy rather than effortful choices (e.g., Dhar 1997; Iyengar & Lepper 2000), previous studies have indicated that effort can also have a positive effect on product or service evaluations (e.g., Labroo & Kim 2009; Kim & Labroo 2011). For instance, Labroo and Kim (2009) propose an instrumentality heuristic, which they define as the naive belief that effort signals instrumentality, as a reason for the possible positive effect of effort. This implies that people trying to reach an important goal (e.g., losing weight) usually invest effort in the means that are perceived as useful for reaching their goals (e.g., fitness program). "That is, during goal pursuit, they perceive effort as a signal of usefulness of a target means in fulfilling their goal" (Labroo & Kim, 2009, p. 128). Although the existence of a positive and negative effect of effort has been investigated previously in various marketing-related situations such as product choice (Kim & Labroo 2011), message processing (Briñol, Petty, & Tormula 2006; Labroo & Kim 2009), charity donation (Kim & Labroo 2011), and customer loyalty programs

(Kivetz & Simonson 2003), it has not yet been investigated with regard to the customer's resource integrating role. Overall, to investigate the positive and negative effect of the inclusion of the CRIR in the ad in further detail, experimental research is necessary to make sound conclusions regarding such specific effects as well as possible boundary conditions.

Seventh, we did not take the customer's experience with the service or product category into account. It could be expected that for customers with different levels of previous experience, the clarity of the customer's role may have a different impact. Hence, another interesting avenue for further research would be to compare the effect of the CRIR between experienced and inexperienced customers.

Despite these limitations, this study contributes to the research gap mentioned by Ballantyne et al. (2011) and Kowalkowski (2011) who state that surprisingly little published research exists on value propositions. Furthermore, the existing literature on value propositions is largely conceptual in nature. Since this study is the first to examine the potential effects of explicitly stating the CRIR in the ad, a variety of (other) research opportunities exist.

Chapter 5

Conclusion

In this doctoral dissertation, I accepted 'the challenge of value research' mentioned by Gallarza et al. (2011) by trying to provide a more comprehensive understanding of customer value. This final chapter provides an integrated overview of this dissertation's findings and addresses its managerial implications. Finally, some opportunities for further research are provided.

5.1 Conclusion of findings

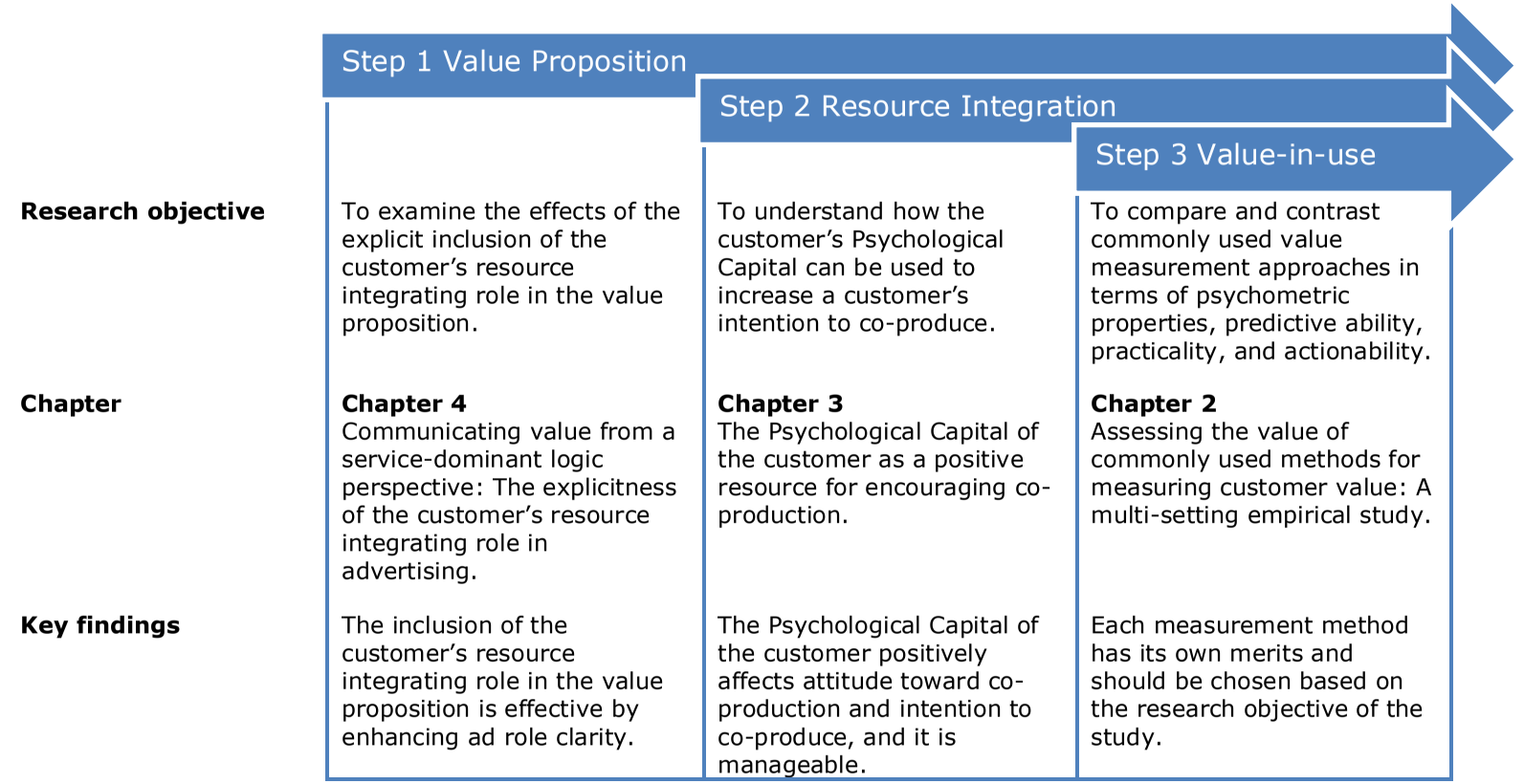
In Chapter 1, the available literature on customer value and value creation was reviewed. Furthermore, the service-dominant logic literature was examined and a service-dominant logic perspective on the value concept was described. This resulted in a summary of the customer value concept in the following eight fundamental characteristics:

Customer value….

1. involves a trade-off between perceived benefits and costs.
2. is perceived by the customer.
3. is personal.
4. is situation-specific.
5. implies an interaction between a subject (i.e., the customer) and an object (e.g., a product, a service, a store).
6. is always created by the customer.
7. is facilitated by the firm.
8. can only be co-created with the firm in case of high-quality direct interactions between the customer and the firm (or its employees).

In Chapter 1, the framework presented in Figure 14 was proposed. This framework integrates the different research objectives guiding this dissertation.

Figure 14 Integrated framework



In order to address the research objectives mentioned in this framework, several empirical studies were conducted. Although these studies explored value and value creation from different angles and were based on different theoretical backgrounds, the framework presented above provides the foundation of this dissertation. To summarize and integrate this dissertation's findings, I start from the fundamental ingredients underlying this framework and also consider the customer's and firm's role in the value creation process. In this way, I hope to provide a better understanding of the value creation process as well.

Before the customer's value creation process begins, the firm can start with the production of *potential* value for the customer. Developing, designing, manufacturing and delivering resources (products and/or services) are processes that are required to make it possible for a customer to create value. Thus, a firm facilitates the customer's value creation by producing potential value for the customer (Grönroos 2011b). Furthermore, the firm has to communicate this potential value to his prospective customers by means of a *value proposition*. A value proposition can be described as an invitation of the firm directed to the customer to buy the firm's offerings. In **Chapter 4** of this dissertation, a new perspective on communicating this value proposition was examined. Instead of only communicating the potential value in terms of expected benefits and/or costs, the value proposition should also communicate *how* this value could be created. In other words, value propositions should communicate the potential value of a product or service *as well as* the role of the customer in creating real value out of the potential value offered by the firm. Chapter 4 focused on its pre-purchase effect, more specifically, the effect of explicitly stating the customer's resource integrating role in the advertised message. Based on existing advertising theories, a nomological web linking the inclusion of the CRIR in the advertised message with key outcomes was presented. In this way the net effect of the explicitness of the CRIR could be assed. The relevance of testing the net effect is underscored by the fact that different theoretical frameworks suggest opposing effects of the explicit statement of the CRIR in the advertisement on customer evaluative judgments. Overall, the findings provide support for a positive net effect of including the CRIR in

the ad. More specifically, the main findings of two empirical studies (i.e., conceptual model tested for toothpaste and for a fitness program) indicate that including the customer's resource integrating role in the ad is effective by enhancing ad role clarity, which on its turn enhances advertiser credibility, ad credibility and expected benefits. This ultimately leads to better attitudes toward the ad and the brand, and subsequently an increase in purchase intentions. Although ad role clarity can also increase expected effort, this does not result in a 'penalty' with regard to brand attitude. An important boundary condition with regard to the inclusion of the CRIR in the advertised message is the effect of so-called 'filters' on the relationship between the advertised CRIR and the perception of ad role clarity. The customer has to perceive the role as indicated in the ad, before it can influence perceptions, attitudes, and intentions. In a post-hoc analysis of Study 2 (about the fitness program), gender was found as a moderator in the relationship between the CRIR-including advertised message and the perception of role clarity. This can be explained by existing theories on consumers' information processing (e.g., Petty & Cacioppo 1981) and existing studies on gender differences (e.g., Baron-Cohen 2003; 2005). However, additional research is needed with regard to possible other boundary conditions. Overall, Chapter 4 provides empirical support for the proposition of Edvardsson et al. (2012) who state that value propositions should communicate the potential value of a product or service *as well as* the role of the customer as a resource integrator.

Once the value proposition is communicated and the product or service is made available in the market, it is up to potential customers to decide whether to accept or reject the value proposition (Vargo, Maglio, & Akaka 2008). When the customer decides to accept the value proposition and, as a result, purchases the good or service, the customer's role as a value creator and resource integrator starts. This implies that, from the customer's point of view, all resources (goods, services, and/or information) acquired from a supplier are used by the customer in a sort of self-service process, where he integrates these resources with other resources which are available to him by applying the skills he possesses, in order to create value for himself (Grönroos 2011b). In **Chapter 3**, co-production was investigated, which can

be considered a special case of resource integration. Co-production implies that the customer engages himself with the supplier's production process and becomes a participant in this process (Grönroos & Voima 2013). In case of co-production, the customer's resource integrating role enlarges and his responsibility increases (Bendapudi & Leone 2003; Troye & Supphellen 2012). For example, when the customer buys a bookshelf and decides to assemble it himself, he has to use more resources (in terms of time and effort) and more skills (in terms of assembling) than when the firm assembles the bookshelf (Grönroos & Voima 2013). Previous research (e.g., Auh et al. 2007; Bendapudi & Leone 2003; Bowers & Martin 2007; Halbesleben & Buckley 2004) has indicated that co-production can result in benefits for the customer as well as the firm. However, these benefits can only be obtained if the customer chooses co-production. Therefore, encouraging customers to co-produce is considered the next frontier in competitive effectiveness (Bendapudi & Leone 2003; Chan et al. 2010). Hence, the objective of Chapter 3 is to provide a more comprehensive understanding of co-production by introducing the customer's Psychological Capital as a way to increase a customer's intention to co-produce. Three empirical studies were conducted to investigate the role of customers' Psychological Capital in a co-production setting. Study 1 investigated the relationship between a customer's PsyCap and intention to co-produce. Study 2 examined the role of PsyCap in a larger conceptual model based on Social Cognitive Theory to increase our understanding of the various factors that influence a customer's intention to co-produce. Finally, Study 3 focused on enhancing the level of PsyCap, which is in line with the malleable, state-like nature of PsyCap. The findings of Study 1 and 2 suggest that the customer's Psychological Capital is a predictor of attitude toward co-production and intention to co-produce. Hence, this research contributes significantly to the theoretical understanding of the factors that influence co-production intention. The traditional motivational constructs and antecedents explored in previous studies were not disputed but were supplemented with a recently developed construct, being the Psychological Capital of the customer. The findings of Study 2 suggest that the customer's Psychological Capital is not only an additional predictor of attitude toward co-production

and intention to co-produce but even a key predictor of these outcome variables. More specifically, from the three motivational factors, Psychological Capital had the strongest effect on attitude and intention. This confirms the essential role of Psychological Capital, which is an important finding for the co-production literature. The results of Study 3, furthermore, confirm the state-like, manageable nature of Psychological Capital in a co-production context. By means of an experimental design, this study tested whether vicarious learning and the provision of equipment positively affect PsyCap. Furthermore, gender differences were taken into account. The results of this study show that vicarious learning has a positive effect on the level of PsyCap and that this effect is larger for women than for men. Providing equipment, however, had not the anticipated effect on PsyCap: for men the provision of equipment had no significant effect and for women it even had a negative effect on PsyCap.

During and after the customer's value creation and resource integration, the customer perceives and evaluates the value of goods, services and other resources integrated into his own value creation process (Ballantyne et al. 2011). Despite the importance of customer value, considerable divergence of opinion exists on how to adequately conceptualize and measure this construct. Several authors have emphasized the need for further understanding of how value should be measured (e.g., Lapierre 2000; Liu, Leach, & Bernhardt 2005; Sweeney & Soutar 2001; Ulaga & Chacour 2001). Although a great number of value measurement methods have been offered in the literature, no empirical work exists that considers the relative performance of the most popular methods. This is a critical gap in the literature, as empirical evidence concerning how to optimally conceptualize and measure customer value represents a necessary condition for realizing the full potential of customer value management. In response to this gap in the literature, **Chapter 2** describes a theoretical and applied comparison of methods for measuring customer value. More specifically, four commonly used methods for measuring customer value (i.e., the methods proposed by Dodds et al. 1991; Gale 1994; Holbrook 1999; Woodruff & Gardial 1996) were compared. This comparison occurred with regard to two quantitative (psychometric properties and predictive ability) and two subjective topics

(practicality and actionability), and, furthermore, was conducted across four different settings. The findings demonstrate that each method has its own benefits and costs and should be used based on its suitability for a particular application. The results show that all methods possess favorable *psychometric properties* with the exception of think offerings, wherein the method of Dodds et al. (1991) displayed poor psychometric properties and, hence, was inadequate to measure the perceived customer value construct. In terms of optimal *predictive ability,* the results show that multi-dimensional consequence-based methods, such as the Woodruff and Gardial (1996) and Holbrook (1999) methods, are the best choice. It should be noted, however, that although both approaches perform well in a general sense, which of these two methods is best depends on the research setting. For feel products, these two methods performed equally well in predicting all three outcome variables. For think products, this is not the case. Regarding low-involvement think offerings, the method of Holbrook (1999) is the safest choice, whereas, for high-involvement offerings, the opposite holds. Given that the main advantage of the Dodds et al. (1991) approach is its small (i.e., five) set of items that can be readily adapted to different research settings, it may be an optimal approach to use when *questionnaire length* is an important criterion. The Dodds et al. (1991) approach can also be used when customer value is part of an extensive nomological network. However, if the research focus is on obtaining *actionable results* or uncovering strategic initiatives to improve customer value, the approach of Dodds et al. (1991) is not desirable. The choice between the methods of Gale (1994), Woodruff and Gardial (1996), and Holbrook (1999) may be guided by the difference between attributes and consequences. Gale's (1994) method assesses value at the attribute-level, whereas Woodruff and Gardial's (1996) and Holbrook's (1999) method include the consequence-level. In the subsequent choice between the methods of Woodruff and Gardial (1996) and Holbrook (1999), an advantage of Holbrook's (1999) method is its classification framework that could be very helpful in structuring the different value types in an understandable and intuitively appealing way. Furthermore, existing scales are available for some of Holbrook's value types, thereby limiting the time and effort needed to design a suitable

measurement instrument. To provide some guidelines for choosing between the measurement methods, a prescriptive flowchart was developed (see Figure 4 in Chapter 2) that summarizes the study's findings and provides direction for choosing the optimal value measurement method.

5.2 Managerial implications

Based on the findings of this dissertation, several important managerial implications can be suggested.

First, because the resource integrating role of the customer is crucial for the creation of value, the firm can and, if applicable, should communicate the customer's resource integrating role in the advertised message. This can be useful for both post-purchase and pre-purchase evaluations. From an expectation-disconfirmation perspective, it can be used to set the right expectations which is important for post-purchase evaluations. If customers know what is expected of them in order to obtain the benefits of the product or service, they should take part of the responsibility when the benefits are not obtained. For example, suppose Oral B communicates in an advertisement that the customer has to brush his teeth twice a day with its toothpaste Oral B 3D-White to get whiter teeth in two weeks' time. If the customer notices that these results are not obtained after two weeks, he has to think about whether it is because of the toothpaste or whether he has not brushed his teeth twice a day. However, communicating the role of the customer in the advertised message can also affect pre-purchase evaluations. Based on the findings of this dissertation, it can be concluded that explicitly stating the customer's resource integrating role (CRIR) in the value proposition is effective by enhancing ad role clarity which on its turn enhances advertiser credibility, ad credibility, and also expected benefits. This ultimately leads to better attitudes toward the ad and the brand, and subsequently an increase in purchase intentions. Although ad role clarity can also increase expected effort, the studies reported in this dissertation indicate that this does not result in a 'penalty' with regard to brand attitude. It is interesting to note that a very important boundary condition with regard to the inclusion of the CRIR in the advertised message is the effect of so-called 'filters' on the relationship between the advertised CRIR and the

perception of ad role clarity. Although the focus of this research was not on the process between the objective stimulus (i.e., the ad with the CRIR) and the perception of the CRIR, the findings of Chapter 4 indicate that this is a very important step. If the customer does not perceive the CRIR, it can not influence pre- or post-purchase evaluations and perceptions. Thus, it is crucial that the customer perceives the CRIR and the organization has to take this boundary condition into account when developing its advertisement.

Second, in case of co-production, the customer's resource integrating role is elaborated. Co-production implies that the customer engages himself with the supplier's production process and becomes a participant in this process. An example of co-production is assembling an IKEA bookshelf oneself: the customer has to use his own skills and resources (e.g., time, effort) to assemble the furniture. The findings of this dissertation show that the customers' Psychological Capital (PsyCap) is a key predictor of customers' attitude toward co-production and intention to co-produce. Furthermore, PsyCap is a state-like construct, which implies that it is open to development. This is a very important characteristic, since it indicates that organizations can encourage co-production by influencing customers' PsyCap. These findings are useful to firms that are considering the introduction of value co-producing activities as well as those that are struggling with the management of existing value co-producing activities. Introducing PsyCap as a potential construct for encouraging co-production opens up possibilities to design truly actionable marketing strategies to stimulate customers' intentions to co-produce. Especially given today's technological possibilities, economically feasible and effective interventions are possible to enhance the customers' PsyCap level and thus ultimately promote customer co-production. For example, the results of the final study of Chapter 4 show that vicarious learning could be used to increase a customer's level of PsyCap. Showing a video with instructions of how to perform the task successfully increases customer's PsyCap and, as a result, positively affects their attitudes and intentions with regard to co-producing. However, the findings also shows that the firm has to be careful when choosing the appropriate tools to develop PsyCap. According to this study's

results, providing equipment to the customer has no effect on men's PsyCap, but, more importantly, it has a negative effect on women's PsyCap. The findings furthermore confirm that 'experience is the best teacher'. In line with the positive and significant relationship between experience and PsyCap, it is important to get customers to initially opt for co-production initiatives. Offering customers a chance to try the co-production task free of charge could enhance their level of PsyCap and, ultimately, enhance their attitude and intention to co-produce. Additionally, the task characteristics related to PsyCap can provide directions on how to communicate co-production to potential customers. Examples include clarifying the exact role of the customer in the co-production process (role clarity) and stressing the simplicity of the stages involved in the co-production process (complexity). According to Avey et al. (2011), effective communication of co-production task characteristics is crucial in customer decision making, as it leads customers to expect good things to happen when opting for co-production (optimism), convinces them that they can create their own success (efficacy and hope), and instills the belief that they are more impervious to possible obstacles in the co-production process (resilience).

Third, the findings of this dissertation provide useful guidelines with regard to the measurement of the customer's perceived value of products. In Chapter 2, a prescriptive flowchart (see Figure 4) was developed to provide some rules of thumb with respect to choosing an appropriate measurement method. This flowchart can be used by companies wanting to assess the value of their products. Each of the measurement methods under study has its own benefits and costs. Furthermore, the appropriate method depends on the research context and objective. The method of Dodds et al. (1991) is a very practical approach. It consists of only five items and it does not need much adaptation to the particular context. However, this method is an overall measurement method and the main disadvantage of this approach is that it does not provide actionable results. Put differently, this method provides an answer to the question 'What is the level of value of our products?', but it can not give an adequate answer to the question 'What kind of value is created?' or 'What are the strengths and weaknesses of our product?'. To find an answer to those latter questions, other approaches are

better suitable. The method of Gale (1994) is a good choice when the organization knows the product attributes that are important to the customer and when the organization is looking for the strengths and weaknesses of its products. Furthermore, Gale (1994) provides a lot of actionable tools to companies that want to use this technique. In his book *'Managing customer value. Creating quality and service that customers can see'* (Gale 1994) and on his website (www.galeconsulting.com), several useful tools are provided that help managers to derive practical conclusions from the customer value analysis. As it can be expected that firms may know the attributes associated with its own products, Gale's (1994) approach seems to be a good choice for measuring customer value in practice. However, if the company wants to look beyond the mere attributes of its products and it intends to come up with creative and innovative solutions for customer needs, it is better to focus on the consequences (Macdonald et al. 2011; Woodruff 1997) and therefore, the methods of Woodruff and Gardial (1996) and Holbrook (1999) should be used. The advantages of Holbrook's approach when compared to Woodruff and Gardial's (1996) approach is that (a) it uses a typology which implies that the organization can start from a structured framework and (b) for most of the value types existing measures are available. Overall, each of the aforementioned measurement methods has its own merits and the choice between these methods should be made in light of the research objective.

5.3 Opportunities for future research

In addition to the directions for further research provided at the end of each chapter, this final paragraph indicates some general opportunities with regard to value research.

5.3.1 Value co-creation

Chapter 1 mentioned that the firm is a value facilitator but can become a value co-creator when direct interactions between the firm and the customer take place. As mentioned by Grönroos and Ravald (2011, p. 10):

> The customers create value for themselves. However, during interactions with customers, the supplier gets opportunities to

> influence the process of value creation, in the best case enhancing the level of value the customers create out of a service activity or a good. Thus, although the customer is the value creator, the supplier becomes a co-creator of value with customers.

It should be noted that the mere existence of interactions is not enough for value co-creation. The firm's actions during these direct interactions with the customer can lead to value creation as well as value destruction. The quality of the interactions is thus fundamental for value co-creation (Grönroos 2011b).

In this dissertation, I only considered the firm's role as a value facilitator. However, recent research (i.e., Grönroos 2011b; Grönroos & Ravald 2011) has emphasized the importance of value co-creation for contemporary marketing literature as well as practice. Hence, future research should consider the value co-creating opportunities of the firm as well as the consequences of this value co-creation for the customer, the firm, and the firm's employees.

Furthermore, this value co-creation can have an effect on how value could and should be measured. Chapter 2 examined and compared several methods for measuring customer value. However, when value is co-created, there could be other value types that come into play during direct interactions with the firm. One of the opportunities for further research is the difference, and maybe also the interaction, between value-in-use and co-created value. Are value-in-use and co-created value complementary or substitutable concepts? Or do they strengthen each other? Are there other value types that come into play when value is co-created?

In line with the research described in Chapter 3 (about the customer's Psychological Capital in a co-production setting), future research can also take direct interactions, which provide opportunities for value co-creation, into account. For example, a firm that sells laminate flooring and wants to increase the level of PsyCap of its customers can organize lessons about installing laminate flooring oneself. When doing so, the firm can interact directly with its customers which creates opportunities for value co-creation.

As such, the firm can kill two birds with one stone: it can increase the level of PsyCap and co-create value.

5.3.2 An organizational perspective to facilitating customer value

Besides further research with regard to value co-creation, as mentioned in the previous section, further research with regard to the firm's role as a value facilitator is necessary. As such, a promising avenue for further research involves exploring the relationship between organizational strategic elements and perceived customer value.

Examples of more specific research questions could include:

- In line with the value-based theory of the firm proposed by Slater (1997), a firm's focus on customer value in combination with the firm's possession and/or use of appropriate resources and capabilities underlie a firm's competitive advantage. Therefore, it is vital to gain more insight into the specific resources and capabilities that are critical to facilitate the creation of superior customer value.
- As mentioned in Chapter 3, firms can also offer opportunities for co-production and, as such, invite the customer to participate in the production process as a co-producer (Grönroos & Voima 2013). Building upon the notion that the customer in a co-production context becomes a partial employee of the organization, an important topic is the motivation of the customer to become a co-producer. In line with common human resource management methods that rely on reward-systems to motivate and manage the employees of an organization, it needs to be studied what optimal reward-systems entail for the customer as a partial employee. For instance, what does the customer expect in return for his effort? In this light, the value a customer creates and perceives by acting as a co-producer is worth more study. Although several studies have mentioned a variety of benefits and costs associated with co-production (see for example Etgar 2008), the existing literature is largely conceptual in nature.

- The participation of the customer in case of both value co-creation and co-production changes the role of the customer. However, this also changes the role of the employee. Matters even become more complex as evidenced by the work of Chan et al. (2010) illustrating that customer participation can have both positive and negative effects on the employee. Customers' increased involvement in the organizational processes may shift more power from employees to customers and thereby increase employee workload, role conflict and job stress. As such, the strategic management practice of encouraging customer participation can be considered as a double-edged sword (Chan et al. 2010). This raises the need for exploring the design of management strategies that take into account the possible conflicting interests and needs of multiple stakeholders.

5.3.3 The financial consequences of providing customer value

As illustrated by the American Marketing Association's definition of marketing (AMA 2007) as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large", marketing revolves around the exchange of (potential) value. This dissertation studies value from the customer's perspective. From a business perspective, it is equally important to view customer value also from a financial angle (Rust et al. 2004).

As mentioned in Chapter 1, the customer's perceived value of a product or service is a trade-off between its perceived benefits and costs. Thus, the firm can improve the customer's perception of value by increasing the customer's benefits or decreasing his costs associated with the product or service at hand. From the firm's perspective, an increase in benefits for the customer (for example by improving the quality of the product) results in increasing costs for the firm. In a similar vein, a decrease in costs for the customer (for example by lowering the selling price) results in decreasing revenues for the firm. As such, a *win-loss* situation is created: if the customer's value increases, the firm's value decreases and vice versa. However, as mentioned by Rust et al. (2004, p. 109), firms have too often viewed "marketing

expenditures as short-term costs rather than long-term investments". In the long run, the improvement in the customer's perception of value leads to an improvement in customer attraction and retention, which subsequently results in an increase in customer lifetime value and customer equity (Rust et al. 2004). Hence, the firm has to make a trade-off between the benefits (in terms of revenues) and sacrifices (in terms of costs) when evaluating the return on marketing investment (Rust et al. 2004; Köhler, Rohm, de Ruyter & Wetzels 2011). This implies that the win-loss situation in reality can become a *win-win* situation in the long run if the benefits outweigh the costs.

With the so-called 'co-creation paradigm', Ramaswamy and colleagues (Ramaswamy 2009; Ramaswamy & Gouillart 2010) go one step further and mention possibilities for *win more – win more* situations. As mentioned in Chapter 1, value co-creation is made possible through direct interactions. The co-creation paradigm involves creating such interactions for value co-creation which Ramaswamy and Gouillart (2010) describe as 'becoming a co-creative enterprise'. By value co-creation new sources of mutual value are generated or as Ramaswamy (2009) puts it: the co-creative enterprise can expand the value creation pie in a win more – win more fashion. Although Ramaswamy and Gouillart (2009) give many examples of co-creative enterprises in their book entitled *'The Power of Co-creation'* and describe the impact of such value co-creation on the financial performance of such firms, empirical research concerning this topic is lacking. Since introducing and managing such value co-creation opportunities can also be considered as a marketing investment, a fruitful avenue for further research is to empirically assess whether such value co-creation indeed leads to a win more – win more situation.

5.3.4 Business-to-business markets

One of the foundational premises (FP9) of S-D logic mentioned in Chapter 1 states that 'all social and economic actors are resource integrators'. With this premise Vargo and Lusch (2004; 2008b; 2011) have indicated that all parties engaged in economic exchange (firms, individual customers, households, …) are similar resource-integrating entities that have the common purpose of value creation. This has been referred to as 'it's all B2B',

which implies that all business relationships are essentially business-to-business. Furthermore, recent research has indicated that all contributions of B2B marketing can be applied to B2C markets and vice versa (Kowalowski 2011; Vargo & Lusch 2011).

Although I agree with the observation of Vargo and Lusch (2011) that the numerous studies of B2B marketing may provide some very important insights and theoretical contributions to B2C marketing and vice versa, I argue that some fundamental differences exist between B2C and B2B that in practice cannot be ignored. The idea behind 'it's all B2B' can be true at a very high level of abstraction, but when applying this in practice, the researcher or practitioner faces some crucial differences between these two sub-disciplines. There are without a doubt numerous other examples of differences between B2B and B2C than the ones I will describe in this section, however, the purpose here is not to be exhaustive but rather to briefly note some key differences related to the topics described in this dissertation. Based on these fundamental differences, I propose some opportunities for further research.

In contrast to B2C markets, the value of a product or service in B2B markets is mainly determined by its effect on the economic result of the customer firm (Grönroos 2011a). Therefore, value for business customers is for the most part expressed in monetary terms. More specifically, it depends on the effect it has on the customer firm's revenues and costs (Grönroos 2011a). With regard to this dissertation, this implies that other measurement methods are more applicable in B2B markets than the ones used in the comparison described in Chapter 2.

Another interesting area for further research is to empirically study value propositions in B2B markets. Despite the widespread use of the term 'value proposition' and its importance for value creation, in general, and for service-dominant logic, in particular, there is surprisingly little empirical research on this topic (Ballantyne et al. 2011; Kowalkowski 2011). In B2B markets, negotiations and direct interactions are much more important than in B2C markets. In the B2C market, a lot of offerings are self-service offerings. This implies that the customer purchases the product without any

direct interaction with the supplier and independently creates value for himself. In a B2B market, a multitude of more or less interactive contacts between the supplier and the buyer take place (Grönroos 2011a). This results in more opportunities for value co-creation, which was already discussed in Paragraph 5.3.1. This also implies that value propositions in B2B markets are generally not communicated in advertised messages but are negotiated or co-created during direct interactions between the supplier and the customer (Ballantyne et al. 2011). As such, the findings mentioned in Chapter 4 of this dissertation cannot be extended to B2B contexts.

Finally, a fundamental difference exists between firms and individual customers with respect to the different evaluators in so-called 'buying centers' (Kowalowski 2011). In a firm, the person who decides which product or service to buy is often not the same as the one who will use it, which can also differ from the one who will evaluate it. As such, the three stages mentioned in the overall framework (i.e., value proposition, resource integration, value-in-use) could be evaluated by three different people or groups within the firm. Furthermore, the corporate policies and strategies also regulate what is purchased and how this purchasing should be conducted. An in-depth investigation of the three stage process used in this dissertation (see Figure 1) in a B2B context with the different evaluators and buying centers in mind could be an interesting avenue for further research.

5.3.5 An investigation of value beyond value-in-use

The focus of this dissertation was mainly on value-in-use which implies that "value is not created and delivered by the supplier but emerges during usage in the customer's process of value creation." (Grönroos & Ravald 2011, p. 8). As a consequence, value as value-in-use is created during usage (Grönroos & Voima 2013). However, recent advances in the marketing domain present new approaches to describe value.

Heinonen et al. (2010) presented customer-dominant logic, because they argue that the service-dominant logic of marketing is too provider-oriented which leads to an incomplete understanding, not of what the product or service does for the customer but of what the customer does with the

product or service. From the customer-dominant logic perspective, the product or service provided by the firm and used by the customer becomes embedded in the customer's life and activities which together with the firm's activities creates value. Instead of focusing on involving the customer in the firm's process, customer-dominant logic focusses on involving the firm in the customer's life (Heinonen et al. 2010).

According to Heinonen et al. (2010), the term 'use' in value-in-use results in a too narrowly defined approach of value. Value is not only related to usage but can be experienced before, during and after usage. For example, when thinking about a holiday trip, value can emerge before the trip when daydreaming about it; value can be created during the trip when having a pleasant time; and also after the trip when remembering it or when talking about it. This also implies that value can be created by mental activities and not only by behavioral activities (which is implied by the word 'use'). For example, imagining future or potential experiences can also be valuable for the customer, without him actually using the product or service.

The idea of customer-dominant logic is consistent with the 'new generation of the experience economy' mentioned by Boswijk et al. (2007, p. 12) in which the personal experience instead of the product or service forms the focal point:

> Not every person is a consumer of economic goods at any given moment. The person is first and foremost a unique being with unique longings, needs and motives. By arranging their life's affairs, individuals are doing what they have to do, experiencing nature in their direct environment and interpersonal relationships, and in doing so they further create and shape their own existence and future.

In line with customer-dominant logic, Helkkula et al. (2012, p. 61) presented 'value in the experience' which they define as "the value that is directly or indirectly experienced by service customers within their phenomenological lifeworld context". Helkkula et al. (2012) furthermore describe the following theoretical propositions that denote 'value in the experience' or VALEX:

1. Value in the experience is individually intrasubjective and socially intersubjective.
2. Value in the experience can be both lived and imaginary.
3. Value in the experience is constructed based on previous, current, and imaginary future experiences and is temporal in nature.
4. Value in the experience emerges from individually determined social contexts.

These propositions indicate that value in the experience goes beyond the interaction between the customer and the firm or its products and focusses on the customer's lifeworld context. According to Helkkula et al. (2012), the value in the experience perspective complements more traditional value approaches. They state that empirical studies that characterize value in experience are necessary to facilitate a deeper understanding of "how current and prospective customers make sense of their event-specific value in the experience in their own lifeworld" (p. 70). However, these authors also acknowledge that 'pure' experience will never be fully accessible to the researcher since it can never be objectively recorded.

Based on the aforementioned opportunities for further research, it is obvious that the value literature is still developing and further research is needed to investigate the different aspects and perspectives of value. Hence, researchers are still facing the challenge of value research mentioned in the introductory chapter.

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Appendices

Appendix A Central concepts of this dissertation

Concept	Definition/explanation
Value creation and resource integration	Customers use the resources provided by the firm (i.e., goods, services, information) and integrate them with other resources (e.g., goods, services, information) and skills they possess to transform the potential value of these resources into real value or value-in-use. Thus, the customer is the value creator. He is the one who creates value by integrating resources.
Value facilitation	The firm acts as a value facilitator and facilitates the customer's value creation process by producing and delivering resources (goods, services and/or information) that represent potential value (or expected value-in-use) for the customer.
Value co-creation	When direct interactions between the firm and the customer occur, opportunities for value co-creation exist. Interactions are situations where the participants are involved in each other's activities or processes. During these interactions, the supplying firm gets opportunities to influence the value creation process which in the best case enhances the level of value the customer creates out of a service activity or a good. In this case, the customer is the value creator and the firm becomes a value co-creator.
Production	Production is the process of making the resources (i.e., products and services) customers integrate in their consumption or usage processes. Value creation is the process of creating value-in-use out of such resources. Hence, value is not produced; resources out of which value can be created are produced.
Co-production	Co-production implies that the customer engages himself with the supplier's production process and becomes a participant in this process. As such, the customer becomes a co-producer. Hence, the firm is in charge of the production process but the customer can participate in the production process as a co-producer.

Appendix B PLS-SEM approach

The analyses of the conceptual models in this dissertation were carried out with Partial Least Squares Structural Equation Modeling (PLS-SEM), more specifically, with the SmartPLS 2.0 M3 software package (Ringle, Wende & Will 2005). The PLS algorithm was performed with the following settings:

- Path Weighting Scheme
- Data metric: Mean . Var 1 (standardization)
- Maximum iterations: 300
- Abort criterion: 1.0E-5
- Initial weights: 1.0

Bootstrapping

Since PLS-SEM does not presume that the data are normally distributed, PLS-SEM applies nonparametric resampling methods like bootstrapping. Bootstrapping involves repeated random sampling with replacement from the original sample to create a bootstrap sample. Since a detailed description of bootstrapping is beyond the scope of this appendix, the reader is referred to Efron and Tibshirani (1993) for a comprehensive discussion of bootstrapping.

In line with the recommendation of Preacher and Hayes (2008), 5000 bootstrap samples were drawn each having the same number of cases as the original sample. Based on this bootstrapping procedure, the estimated coefficients in PLS-SEM are tested for their statistical significance by using percentile confidence intervals.

Causal relationships

Although PLS-SEM is used for causal-predictive analysis, caution is required when referring to causality. According to Malhotra and Briks (2006, p. 259):

Marketing effects are caused by multiple variables and the relationship between cause and effect tends to be probabilistic. Moreover, we can never prove causality (i.e., demonstrate it conclusively); we can only infer a cause-and-effect relationship.

Before one can assume causality, three conditions must be satisfied (Malhotra & Briks 2006, p. 260-261):

1. *Concomitant variation* which is the extent to which a cause, X, and an effect, Y, occur together or vary together in the way predicted by the hypothesis under consideration. As concomitant variation implies that there is an association between the variables, it makes the hypothesis of causality more tenable, but it does not prove it.

2. The *time order of occurrence* implies that the causing event must occur either before or simultaneously with the effect; it cannot occur afterwards. By definition, an effect can not be produced by an event that occurs after the effect has taken place.

3. The *elimination of other possible causal factors* implies that the variable under study should be the only possible causal explanation. In an after-the-fact examination of a situation, we can never confidently rule out all other factors. In contrast, with experimental designs it is possible to control some of the other causal factors. It is also possible to balance the effects of uncontrolled variables so that only random variations resulting from these uncontrolled variables will be measured.

These conditions are necessary but not sufficient to demonstrate causality. With respect to this dissertation, it should be noted that we controlled for additional variables were possible, built on the literature with respect to time order of occurrence, and used experimental designs when possible. However, since most of the data used in this dissertation are cross-sectional data, no real time order can be guaranteed. Hence, the findings of this dissertation should be interpreted in light of this limitation.

Evaluation

The evaluation of the results of PLS-SEM follows a two-step process that involves separate evaluations of the measurement models and the structural model. The stepwise approach is based on the logic that if you are not confident that the measures adequately represent the constructs of interest, you can not use them in the structural model (Hair et al. 2011).

Measurement model

To evaluate the measurement models, it is essential to distinguish between reflective and formative measurement models (Henseler, Ringle, & Sinkovics 2009). Table B.1 gives an overview of the criteria needed to evaluate both types of measurement model.

Table B.1 Criteria for evaluating measurement models

Reflectief	**Formatief**
Unidimensionality (in SPSS)	
Reliability • Cronbach's alpha > .70 • Composite reliability > .70	
Validity • Item validity: the magnitude and significance of the item loadings • Within-method convergent validity: AVE > .50 • Discriminant validity: AVE > [cor (construct-other-construct)]²	Validity • Item validity: the significance of the item loadings • Discriminant validity CI: Latent variable correlation +/- 2se IF |1| lies in the CI → no discriminant validity

Reflective constructs used in this dissertation are evaluated with regard to their unidimensionality, reliability, item validity, within-method convergent validity, and discriminant validity.

Unidimensionality refers to the existence of a single trait or dimension underlying a set of items. The procedure suggested by Sahmer, Hanafi, and Qannari (2006) is used to assess the unidimensionality of each reflective construct. According to this two stage procedure, a set of items is

unidimensional if: (1) the first eigenvalue of the correlation matrix of items exceeds one, and (2) the second eigenvalue is smaller than one. Thus, this implies testing the following hypotheses:

(1) $H_0 : \lambda_1 = 1$ $H_a : \lambda_1 > 1$

(2) $H_0 : \lambda_2 = 1$ $H_a : \lambda_2 < 1$

According to Karlis et al. (2003), the first hypothesis ($H_a : \lambda_1 > 1$) can be accepted if $H_a : \lambda_1 > 1 + 2\sqrt{\frac{p-1}{n-1}}$ where *p* equals the number of indicators and *n* indicates the sample size. The second hypothesis ($H_a : \lambda_2 < 1$) implies testing whether the second eigenvalue is smaller than one.

Internal consistency reliability refers to the degree to which the items intended to measure the same latent construct have similar scores. Cronbach's alpha has traditionally been used to assess the internal consistency reliability of the reflective constructs. Additionally, Fornell and Larcker (1981) provide a somewhat different index of construct reliability based on the ratio of the variance accounted for by the latent construct to the total variance in the indicators. In general, the accepted threshold for both of these indices is .70 or above (MacKenzie et al. 2011).

For reflective constructs, the validity of the individual items (i.e., item validity) can be assessed by determining whether the relationship between each item and its latent construct is large and significant. A value greater than .70 would suggest an adequate level of item validity (MacKenzie et al. 2011; Hair et al. 2011). The significance of the item loadings is evaluated by means of bootstrap confidence intervals.

Within method convergent validity refers to the extent to which the different indicators of the same construct are in agreement. A common measure to examine convergent validity is the average variance extracted (AVE), as defined by Fornell and Larcker (1981). Based on this test, a construct possesses convergent validity if the majority of the variance in the reflective indicators is accounted for by the underlying latent construct rather than by measurement error (i.e., AVE > .50).

A necessary condition for discriminant validity is that the shared variance between the latent variable and its indicators is larger than the variance shared with other variables. To test for this, the AVE is compared with the squared correlations among constructs (Chin 2010). This test is based on the principle that each construct should be more highly related to its own indicators than to other constructs (Chin 2010).

Formative constructs demand a different approach to evaluate the measurement model (Diamontopoulos & Winklhofer 2001) and should only be evaluated by means of their item and discriminant validity.

Item validity is captured by the significance of the path from the indicator to the latent construct (MacKenzie et al. 2011). This significance can be evaluated by means of the aforementioned bootstrapping procedure. Indicators that do not have a significant loading on the construct can be considered for elimination. However, "it is important to remember that sub-dimensions should not be eliminated unless all of the essential aspects of the focal construct domain are captured by the remaining sub-dimensions" (MacKenzie et al. 2011, p. 316).

The discriminant validity of the formative constructs can be evaluated by testing whether the constructs are less than perfectly correlated. This implies assessing whether an absolute value of 1 falls within two standard errors of the latent variable correlations (MacKenzie et al. 2005).

Second-order measurement models

In Chapter 3, PsyCap is *a second-order construct with reflective indicators*. Each of the four first-order constructs (i.e., self-efficacy, hope, optimism, and resilience) is an indicator of the second-order core construct (i.e., PsyCap). To model this in PLS-SEM software, I followed the repeated indicators approach which implies that the higher-order construct (i.e., PsyCap) was set up through the repeated use of the indicators of the lower-order constructs (i.e., self-efficacy, hope, optimism, and resilience) (Wilson 2010). To examine the psychometric properties of PsyCap as a second-order reflective construct, the recommendations of MacKenzieet al. (2011) were

followed. This implies examining the reliability of the first-order dimensions as indicators of the second-order construct (PsyCap) by calculating Fornell and Larcker's (1981) index of construct reliability for the second-order construct. Furthermore, to test the validity of each first-order component, it is assessed whether the first-order construct is significantly related to the second-order construct. Finally, average variance extracted (AVE) was calculated by averaging the squared multiple correlations for the first-order indicators. If the AVE of PsyCap is greater than the cut-off value of .50. it can be concluded that the majority of the variance in the first-order subdimensions is shared with the second-order latent construct (MacKenzie et al. 2011).

In Chapter 2, *second-order constructs with formative indicators* were used (i.e., measurement methods of Holbrook 1999 and Woodruff & Gardial 1996). To model a second-order construct with formative indicators in PLS-SEM, the two-stage approach is used (Henseler et al. 2007; Reinartz, Krafft, & Hoyer 2004, Ringle, Sarstedt, & Straub 2012; Wilson & Henseler 2007). This implies that in the first stage the latent variable scores were estimated without the second-order construct present but with all of the first-order constructs in the model. In the second stage, the latent variable scores of the first-order constructs were used as indicators of the second-order construct in a separate higher-order PLS model.

Structural model

Having evaluated the adequateness of the measurement models, the next step is to provide evidence supporting the conceptual model or structural model. The primary criteria for evaluating the structural model are (1) the R^2 values, and (2) the magnitude and significance of the path coefficients (Hair et al. 2011).

Because PLS-SEM is a prediction-oriented approach to SEM, its goal is to explain the endogenous latent constructs variance and, hence, the R^2 value of the key outcome variables should be high. According to Chin (1998), R^2 values of .67, .33, and .19 can, as a rule of thumb, be considered as strong, moderate, or weak, respectively. To test whether the R^2 value is significantly

different from zero, the bootstrapping procedure is used by using the following equation: $R^2 = \sum_j \widehat{\beta_j}\ x\ cor(\eta_i \xi_j)$, where β_j is the path coefficient between the endogenous (η) and exogenous construct (ξ).

The path coefficients of the structural model can be interpreted as standardized beta coefficients of ordinary least squares (OLS) regressions (Hair et al. 2011). The significance of these path coefficients can be assessed by means of the bootstrapping procedure described earlier. A path coefficient that is nonsignificant or shows a sign contrary to the hypothesized direction does not support the hypothesis, whereas a significant path coefficient showing the hypothesized sign empirically supports the proposed causal relationship.

Some additional analyses with PLS-SEM

PLS-MGA

To empirically test for differences between different subgroups (e.g., men and women), the PLS multi-group analysis (PLS-MGA) developed by Henseler and colleagues (Henseler 2012; Henseler, Ringle, & Sinkovics 2009) was used. The working principle of PLS-MGA is as follows: (1) the data is divided into subsamples according to the grouping variable (e.g., men and women); (2) the PLS path model is estimated for each subsample; (3) each subsample becomes subject to a separate bootstrap analysis (based on 5000 bootstrap samples); (4) the bootstrap estimates are used to assess the robustness of the subsample estimates (Henseler 2012). More specifically, each centered bootstrap estimate of one subsample is compared with each centered bootstrap estimate of the other subsample and the number of positive differences divided by the total number of comparisons indicates how probable it is in the population that the parameter of the first group is greater than the parameter of the other group (Henseler 2012).

This non-parametric approach does not rely on distributional assumptions in contrast to the often used t-test. As PLS itself is distribution-free, it is better to use a non-parametric PLS-based approach to multi-group analysis. Furthermore, problems can occur with the aforementioned t-test if the

assumption of normal distribution or similar sample sizes is not tenable (Henseler 2012; Henseler et al. 2009). To perform the PLS-MGA, the Excel-sheet developed by Professor dr. Henseler was used.

PLS ANCOVA

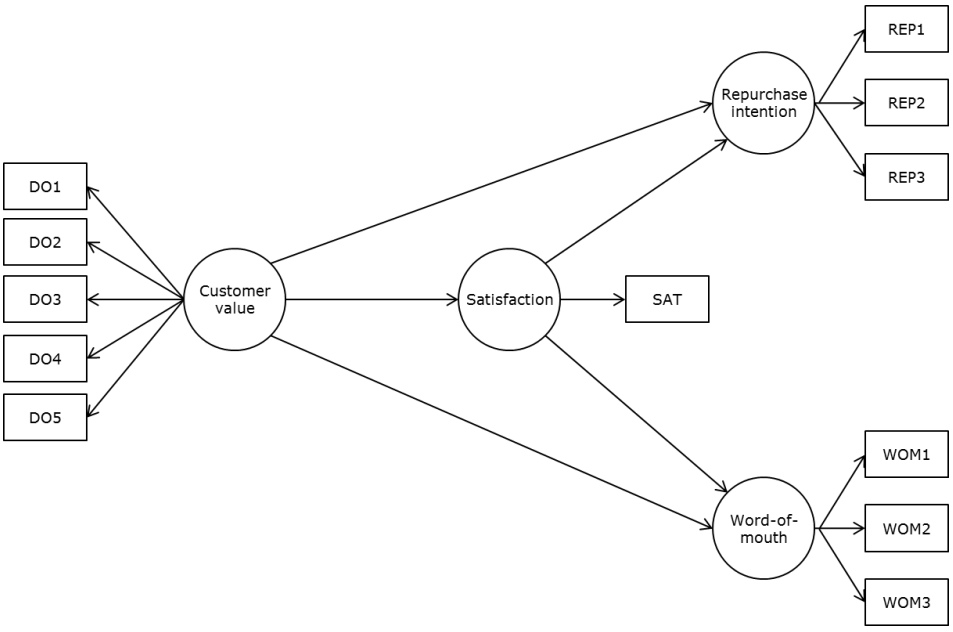
To incorporate factorial data resulting in a PLS-SEM context, the procedure as suggested by Streukens et al. (2010) was used. Based on this procedure, the experimental manipulations were modeled as latent variables with dummy variables as their formative indicators. Significant values of the path coefficients (based on the bootstrapping procedure) from these dummy variables to the endogenous construct indicate whether the main effects and the interaction effect(s) are significant. The advantage of this procedure over traditional AN(C)OVA is that it allows the researcher to take the higher-order factor structure of latent variables into account.

Appendix C Extended report PLS-SEM Chapter 2

Measurement method of Dodds, Monroe and Grewal (1991)

The PLS path model that was programmed in the SmartPLS software is presented in Figure C.1.

Figure C.1 PLS path model Dodds et al.'s method



To evaluate the measurement model, I used the criteria mentioned in Appendix B and I summarized the results in Tables C.1 and C.2.

As can be seen in Table C.1, the eigenvalues of the construct's inter-item correlation matrix revealed that the scale suggested by Dodds et al. (1991) is not unidimensional in the case of think offerings, and this applies to both low-involvement (i.e., toothpaste) and high-involvement (i.e., DVD player) products. Hence, the subsequent criteria for evaluating the measurement and structural model are not reported for the Dodds et al. (1991) approach for these settings.

Table C.1 Psychometric properties for Dodds et al.'s method

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
		TP	SD	DVD	DC		TP		SD		DVD		DC	
VAL	λ_1	2.27	2.93	2.57	2.89	DO1	.80	[.70;.88]	.81	[.76;.87]	.88	[.84;.91]	.82	[.77;.89]
	λ_2	1.14	.88	1.03	.90	DO2	.73	[.54;.84]	.82	[.69;.88]	.69	[.47;.82]	.78	[.63;.85]
	α		.81		.81	DO3	.82	[.73;.88]	.86	[.75;.91]	.89	[.82;.93]	.88	[.80;.92]
	CR		.86		.85	DO4	.42	[.17;.61]	.53	[.32;.68]	.44	[.20;.64]	.65	[.51;.75]
	AVE		.56		.55	DO5	.37	[.09;.55]	.68	[.53;.77]	.43	[.16;.61]	.51	[.30;.65]
SAT						SAT	1.00		1.00		1.00		1.00	
REP	λ_1	2.43	2.09	2.26	.39	REP1	.92	[.89;.95]	.94	[.90;.97]	.94	[.91;.96]	.90	[.86;.93]
	λ_2	.44	.78	.61	.43	REP2	.95	[.94;.97]	.96	[.94;.98]	.95	[.92;.97]	.93	[.91;.95]
	α	.88	.77	.83	.87	REP3	.82	[.74;.88]	.52	[.28;.71]	.69	[.51;.82]	.84	[.77;.89]
	CR	.93	.86	.90	.92									
	AVE	.81	.69	.75	.80									
WOM	λ_1	2.51	2.67	2.70	2.45	WOM1	.92	[.86;.96]	.93	[.89;.96]	.95	[.93;.97]	.90	[.83;.95]
	λ_2	.27	.20	.20	.36	WOM2	.92	[.88;.95]	.96	[.95;.97]	.97	[.95;.98]	.94	[.91;.96]
	α	.90	.94	.94	.89	WOM3	.91	[.85;.94]	.94	[.91;.96]	.93	[.86;.97]	.87	[.81;.92]
	CR	.94	.96	.96	.93									
	AVE	.84	.89	.90	.82									

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth ;TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Table C.2 Discriminant validity of reflective constructs for Dodds et al.'s method

Comparison squared latent variable correlations with AVE on the diagonal				
Soft drink				
	REP	SAT	VAL	WOM
REP	.69			
SAT	.36	1.00		
VAL	.19	.22	.56	
WOM	.40	.33	.19	.89
Day cream				
	REP	SAT	VAL	WOM
REP	.80			
SAT	.41	1.00		
VAL	.14	.18	.55	
WOM	.36	.25	.19	.82

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth

In Table C.3, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

Table C.3 Results structural model for Dodds et al.'s method

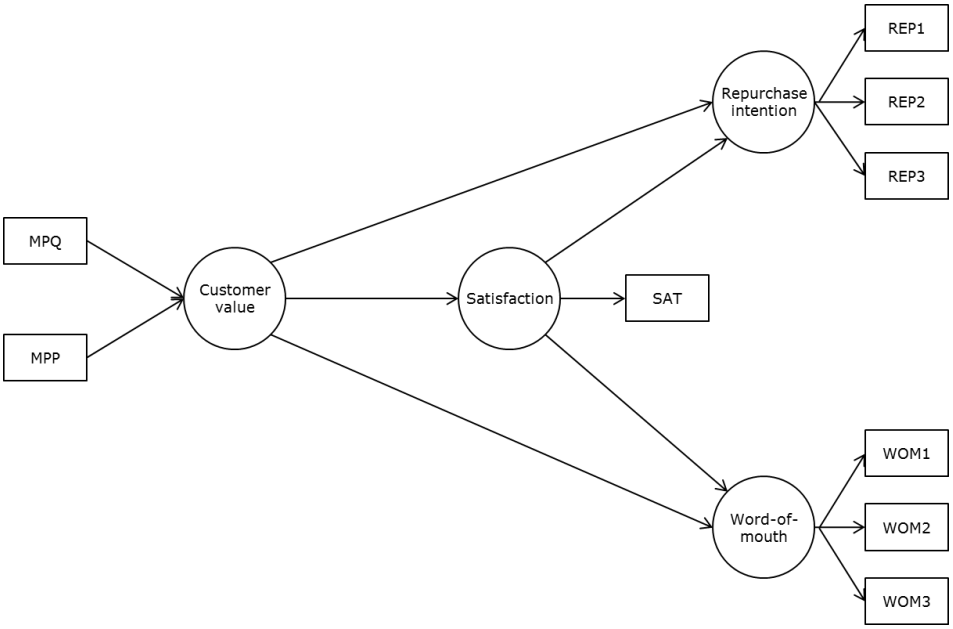
R^2 values				
		SD		DC
SAT	.22	[.18;.27]	.18	[.12;.23]
REP	.39	[.35;.44]	.43	[.37;.48]
WOM	.36	[.29;.42]	.32	[.27;.37]
Path coefficients				
		SD		DC
VAL → SAT	.48	[.39;.56]	.43	[.29;.56]
VAL → REP	.20	[.07;.33]	.13	[.01;.25]
Val → WOM	.21	[.06;.36]	.29	[.17;.42]
SAT → REP	.51	[.39;.63]	.59	[.48;.69]
Sat → WOM	.47	[.36;.58]	.38	[.21;.54]

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Measurement method of Gale (1994)

The PLS path model that was programmed in the SmartPLS software is presented in Figure C.2.

Figure C.2 PLS path model Gale's method



To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Tables C.4 to C.6.

Table C.4 Psychometric properties for Gale's method

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
		TP	SD	DVD	DC		TP		SD		DVD		DC	
VAL						MPQ	.98	[.90;1.00]	1.00	[.95;1.00]	1.00	[.96;1.00]	1.00	[.97;1.00]
						MPP	-.24	[-.48;.02]	-.23	[-.48;.02]	-.31	[-.59;-.01]	-.31	[-.56;-.07]
SAT						SAT	1.00		1.00		1.00		1.00	
REP	λ_1	2.22	2.13	2.05	2.30	REP1	.91	[.87;.94]	.94	[.90;.96]	.94	[.91;.97]	.95	[.92;.97]
	λ_2	.60	.68	.82	.58	REP2	.93	[.90;.95]	.94	[.91;.96]	.95	[.93;.97]	.95	[.94;.97]
	α	.82	.79	.75	.84	REP3	.72	[.59;.82]	.60	[.39;.76]	.49	[.26;.69]	.69	[.51;.83]
	CR	.89	.87	.86	.90									
	AVE	.74	.70	.68	.76									
WOM	λ_1	2.70	2.55	2.87	2.55	WOM1	.95	[.93;.96]	.93	[.90;.95]	.97	[.95;.98]	.91	[.88;.94]
	λ_2	.19	.30	.10	.25	WOM2	.96	[.95;.97]	.95	[.93;.96]	.99	[.98;.99]	.94	[.91;.96]
	α	.94	.91	.98	.91	WOM3	.93	[.90;.96]	.89	[.82;.93]	.98	[.97;.99]	.91	[.87;.94]
	CR	.96	.94	.99	.90									
	AVE	.90	.85	.96	.85									

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Table C.5 Discriminant validity of reflective constructs for Gale's method

Comparison squared latent variable correlations and AVE on the diagonal				
		Toothpaste		
	REP	SAT	VAL	WOM
REP	.74			
SAT	.36	1.00		
VAL	.17	.21		
WOM	.40	.29	.24	.90
		Softdrink		
	REP	SAT	VAL	WOM
REP	.70			
SAT	.25	1.00		
VAL	.16	.14		
WOM	.32	.23	.23	.85
		DVD player		
	REP	SAT	VAL	WOM
REP	.68			
SAT	.38	1.00		
VAL	.30	.19		
WOM	.45	.48	.34	.96
		Day cream		
	REP	SAT	VAL	WOM
REP	.76			
SAT	.49	1.00		
VAL	.24	.20		
WOM	.39	.31	.21	.85

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth

Table C.6 Discriminant validity of formative constructs for Gale's method

Confidence intervals				
Toothpaste				
	REP	SAT	VAL	WOM
REP				
SAT	[.49;.71]			
VAL	[.29;.54]	[.34;.58]		
WOM	[.52;.74]	[.43;.66]	[.37;.61]	
Soft drink				
	REP	SAT	VAL	WOM
REP				
SAT	[.38;.62]			
VAL	[.28;.53]	[.25;.51]		
WOM	[.45;.68]	[.36;.60]	[.36;.60]	
DVD player				
	REP	SAT	VAL	WOM
REP				
SAT	[.51;.73]			
VAL	[.43;.66]	[.31;.56]		
WOM	[.57;.77]	[.59;.79]	[.47;.70]	
Day cream				
	REP	SAT	VAL	WOM
REP				
SAT	[.60;.80]			
VAL	[.36;.61]	[.33;.57]		
WOM	[.52;.73]	[.44;.67]	[.34;.58]	

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth

In Table C.7, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

Table C.7 Results structural model for Gale's method

R^2 values								
		TP		SD		DVD		DC
SAT	.21	[.16;.26]	.14	[.10;.18]	.19	[.11;.25]	.20	[.15;.25]
REP	.38	[.33;.41]	.31	[.24;.37]	.48	[.40;.53]	.53	[.48;.57]
WOM	.37	[.32;.44]	.33	[.28;.39]	.58	[.51;.63]	.36	[.29;.43]
Path coefficients								
		TP		SD		DVD		DC
VAL → SAT	.46	[.36;.56]	.38	[.26;.49]	.43	[.26;.58]	.45	[.34;.56]
VAL → REP	.18	[.04;.33]	.26	[.12;.39]	.34	[.18;.49]	.21	[.09;.33]
VAL → WOM	.46	[.36;.56]	.35	[.21;.49]	.35	[.26;.46]	.27	[.13;.40]
SAT → REP	.52	[.37;.64]	.41	[.22;.59]	.47	[.31;.62]	.61	[.50;.70]
SAT → WOM	.40	[.27;.51]	.35	[.19;.50]	.54	[.38;.67]	.43	[.30;.56]

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Measurement method of Woodruff and Gardial (1996)

To model the method of Woodruff and Gardial (1996) in PLS-SEM, the two-stage approach for second-order models was used (see Appendix B). Figure C.3 and C.4 graphically present the PLS path models for each stage.

To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Tables C8 and C9.

Figure C.3 PLS path model first stage Woodruff and Gardial's method

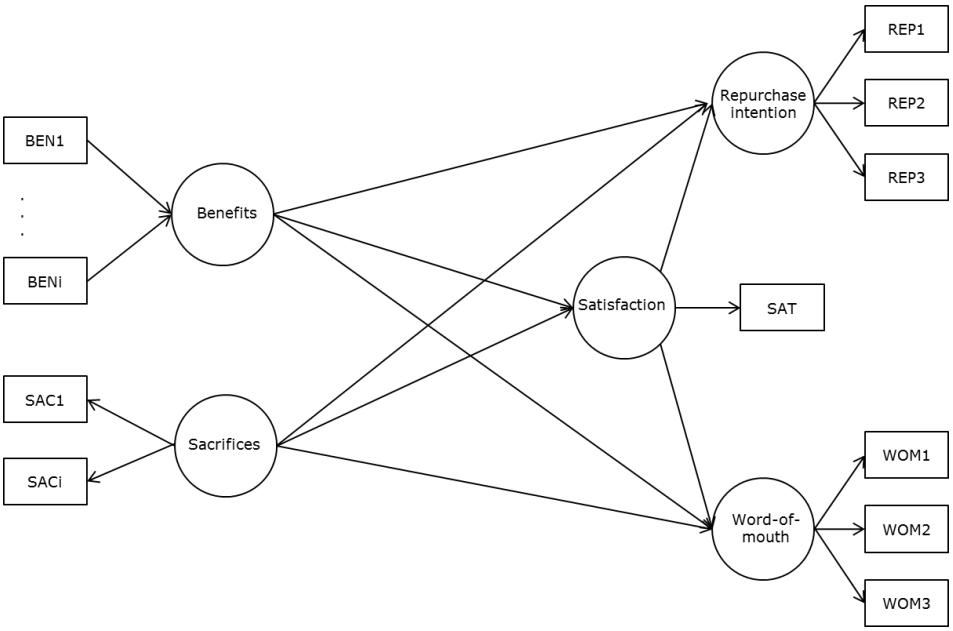


Figure C.4 PLS path model second stage Woodruff and Gardial's method

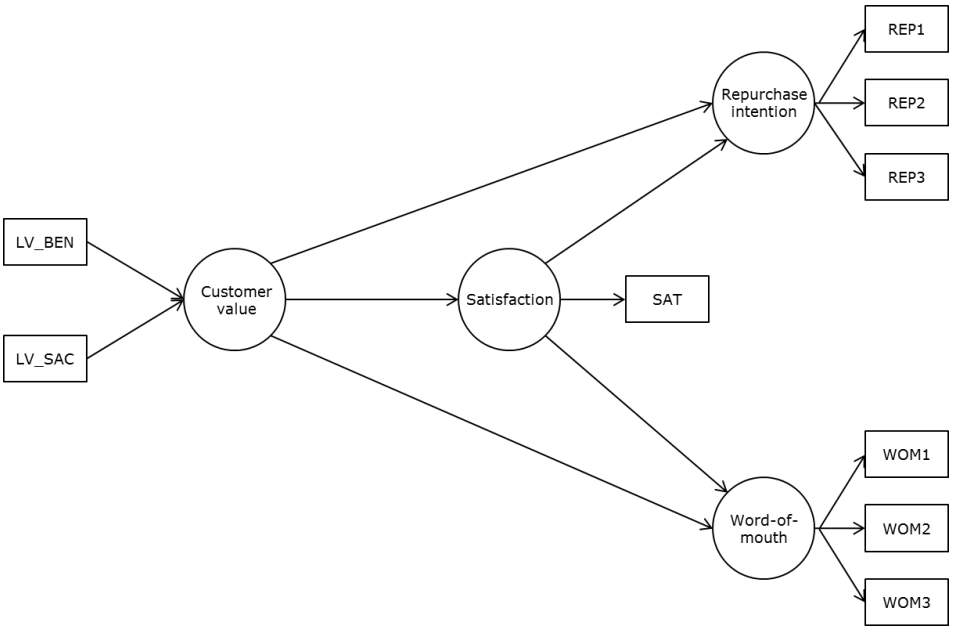


Table C.8 Psychometric properties for Woodruff and Gardial's method

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
		TP	SD	DVD	DC		TP		SD		DVD		DC	
Benefits[a]						BEN1	.56	[.34;.70]	.83	[.70;.95]	.77	[63;.86]	.77	[.65;.85]
1st stage						BEN2	.46	[.25;.60]	.65	[.47;.78]	.76	[.58;.87]	.77	[.61;.87]
						BEN3	.42	[.21;.58]	.36	[.18;.52]	.77	[.59;.88]	.65	[.49;.76]
						BEN4	.29	[.06;.47]	.64	[.45;.77]	.54	[.39;.65]	.88	[.79;.93]
						BEN5	.50	[.29;.65]	.47	[.29;.61]	.58	[.39;.72]	.92	[.81;.96]
						BEN6	.58	[.36;.71]	.31	[.14;.46]	.20	[.01;.37]	.66	[.50;.79]
						BEN7	.62	[.40;.76]	.23	[.06;.39]	.51	[.36;.62]	.72	[.58;.81]
						BEN8	.69	[.47;.80]	.73	[.58;.82]	.70	[.57;.79]	.72	[.59;.82]
						BEN9	.78	[.57;.88]	.61	[.47;.73]	.79	[.65;.87]	.77	[.66;.82]
						BEN10	.69	[.46;.80]						
						BEN11	.62	[.40;.75]						
						BEN12	.70	[.47;.82]						
						BEN13	.61	[.43;.72]						
						BEN14	.85	[.65;.91]						
Sacrifices	λ_1	1.76	1.79	1.50	1.85	SAC1	.96	[.94;.98]	.97	[.86;.99]	.97	[.79;1.00]	.96	[.95;.97]
1st stage	λ_2	.24	.21	.50	.15	SAC2	.92	[.84;.95]	.92	[.81;.98]	.70	[.03;.88]	.96	[.93;.97]
	α	.92	.88	.67	.92									
	CR	.95	.94	.83	.96									
	AVE	.88	.89	.71	.92									
VAL						LV_BEN	1.00	[.98;1.00]	1.00	[.98;1.00]	1.00	[.98;1.00]	1.00	[.98;1.00]
2d stage						LV_SAC	-.32	[-.54;-.08]	-.14	[-.31;.05]	-.29	[-.48;-.11]	-.40	[-.56;-.24]
SAT						SAT	1.00		1.00		1.00		1.00	
REP	λ_1	2.20	2.14	2.14	2.06	REP1	.89	[.86;.93]	.92	[.89;.95]	.91	[.85;.95]	.94	[.90;.96]
	λ_2	.62	.71	.69	.75	REP2	.94	[.93;.96]	.93	[.90;.95]	.94	[.91;.97]	.94	[.90;.96]
	α	.73	.79	.79	.76	REP3	.72	[.59;.81]	.66	[.47;.79]	.64	[.44;.78]	.54	[.31;.73]
	CR	.89	.88	.88	.86									
	AVE	.74	.71	.71	.68									

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.
[a] The benefits depend on the setting. For the specific items, the reader is referred to Table 8

Table C.8 Psychometric properties for Woodruff and Gardial's method (continued)

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
		TP	SD	DVD	DC		TP		SD		DVD		DC	
WOM	λ_1	2.60	2.59	3.74	2.44	WOM1	.93	[.88;.96]	.93	[.91;.95]	.94	[.91;.96]	.91	[.85;.95]
	λ_2	.22	.28	.18	.35	WOM2	.94	[.91;.96]	.95	[.94;.97]	.97	[.95;.98]	.93	[.91;.95]
	α	.92	.92	.95	.88	WOM3	.93	[.89;.95]	.90	[.85;.93]	.96	[.94;.98]	.87	[.80;.92]
	CR	.95	.95	.97	.93									
	AVE	.86	.86	.91	.81									

Notes. WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Table C.9 Discriminant validity of reflective constructs for Woodruff and Gardial's method

Comparison squared latent variable correlations and AVE on the diagonal				
Toothpaste				
	REP	SAT	VAL	WOM
REP	.73			
SAT	.27	1.00		
VAL	.33	.31		
WOM	.34	.22	.37	.86
Soft drink				
	REP	SAT	VAL	WOM
REP	.71			
SAT	.37	1.00		
VAL	.42	.55		
WOM	.30	.31	.29	.86
DVD player				
	REP	SAT	VAL	WOM
REP	.71			
SAT	.32	1.00		
VAL	.33	.53		
WOM	.47	.46	.53	.91
Day cream				
	REP	SAT	VAL	WOM
REP	.68			
SAT	.31	1.00		
VAL	.40	.38		
WOM	.47	.31	.52	.81

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth

Table C.10 Discriminant validity of formative constructs for Woodruff and Gardial's method

Confidence intervals				
Toothpaste				
	REP	SAT	VAL	WOM
REP				
SAT	[.40;.63]			
VAL	[.46;.68]	[.44;.67]		
WOM	[.47;.70]	[.34;.59]	[.50;.72]	
Soft drink				
	REP	SAT	VAL	WOM
REP				
SAT	[.50;.72]			
VAL	[.54;.75]	[.65;.84]		
WOM	[.43;.67]	[.44;.67]	[.43;.66]	
DVD player				
	REP	SAT	VAL	WOM
REP				
SAT	[.45;.68]			
VAL	[.47;.69]	[.64;.83]		
WOM	[.59;.79]	[.58;.78]	[.64;.83]	
Day cream				
	REP	SAT	VAL	WOM
REP				
SAT	[.44;.67]			
VAL	[.53;.74]	[.51;.73]		
WOM	[.58;.79]	[.44;.67]	[.63;.82]	

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth

In Table C.11, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

Table C.11 Results structural model for Woodruff and Gardial's method

R^2 values								
		TP		SD		DVD		DC
SAT	.31	[.22;.38]	.55	[.51;.60]	.54	[.48;.58]	.38	[.26;.48]
REP	.38	[.31;.45]	.45	[.39;.51]	.38	[.31;.44]	.45	[.40;.49]
WOM	.40	[.34;.44]	.35	[.29;.40]	.58	[.53;.63]	.54	[.49;.58]
Path coefficients								
		TP		SD		DVD		DC
VAL → SAT	.56	[.40;.68]	.74	[.68;.80]	.73	[.66;.80]	.62	[.42;.78]
VAL → REP	.41	[.21;.58]	.43	[.25;.60]	.36	[.19;.53]	.47	[.26;.60]
VAL → WOM	.51	[.32;.65]	.28	[.12;.45]	.50	[.36;.63]	.61	[.42;.74]
SAT → REP	.29	[.12;.48]	.29	[.11;.47]	.30	[.11;.48]	.27	[.13;.49]
SAT → WOM	.18	[.02;.38]	.35	[.18;.51]	.32	[.16;.47]	.17	[.05;.38]

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Measurement method of Holbrook (1999)

To model the method of Holbrook (1999) in PLS-SEM, the two-stage approach for second-order models was used (see Appendix B). Figure C.5 and C.6 graphically present the PLS path models for each stage.

To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Tables C.12 to C.14.

Figure C.5 PLS path model first stage Holbrook's method

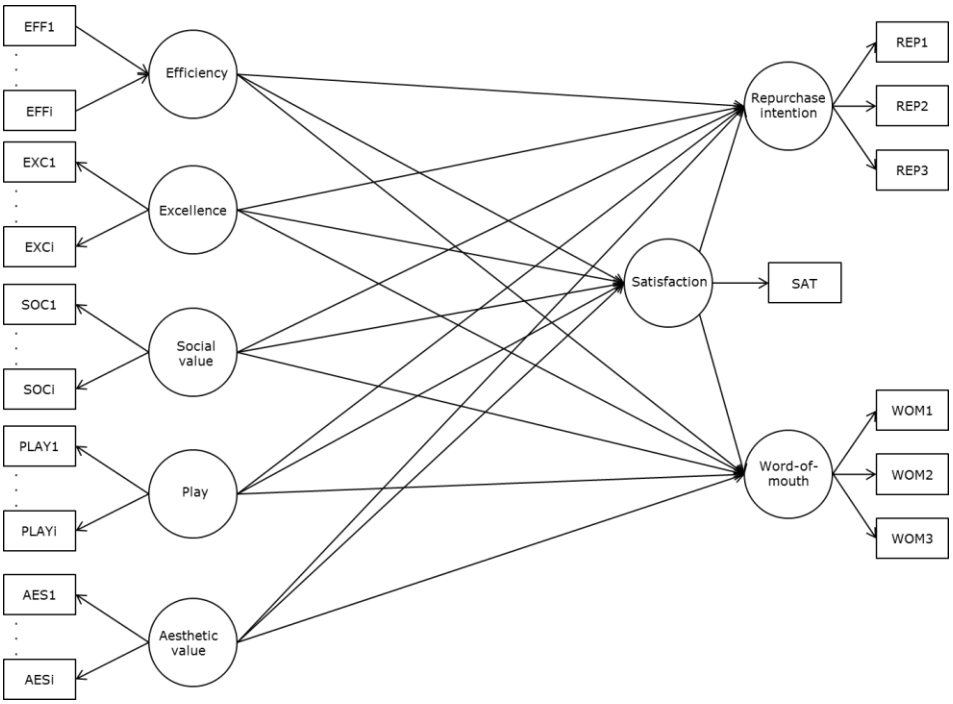


Figure C.6 PLS path model second stage Holbrook's method

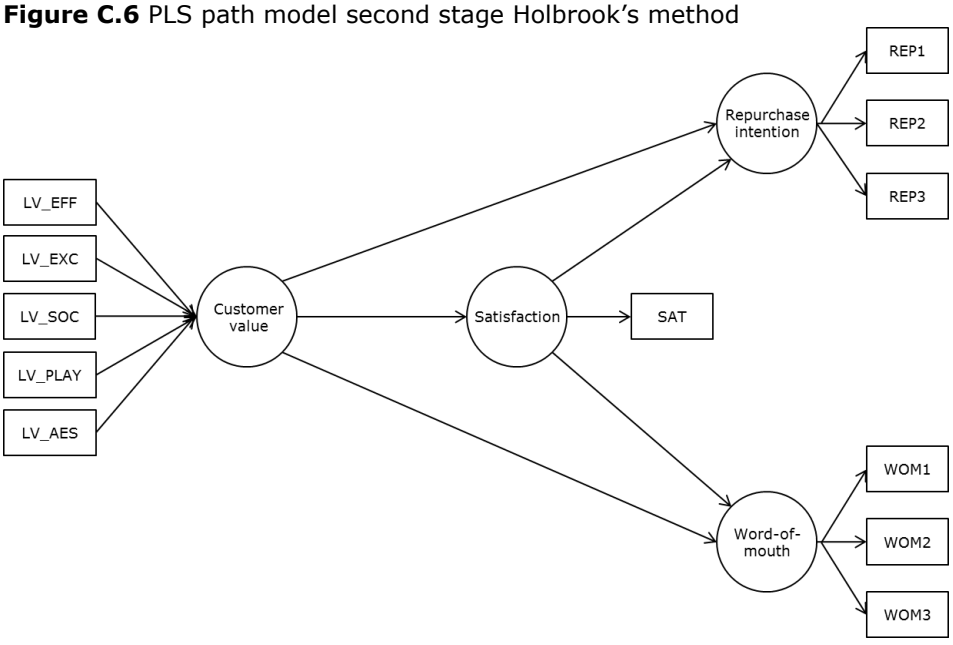


Table C.12 Psychometric properties for Holbrook's method

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
		TP	SD	DVD	DC		TP		SD		DVD		DC	
Efficiency[a]						EFF1	.05	[-.40;.51]	.78	[-.70;1.00]	-.15	[-.50;.18]	.05	[-.34;.40]
1st stage						EFF2	.35	[-.04;.76]	-.55	[-.63;.99]	.07	[-.23;.37]	.24	[-.14;.60]
						EFF3	.98	[.71;1.00]			.86	[.75;.87]	.99	[.83;1.00]
						EFF4					.48	[.15;.68]		
Excellence	λ_1	3.23	3.35	3.00	3.17	EXC1	.87	[.81;.92]	.92	[.89;.95]	.83	[.75;.87]	.88	[.85;.91]
1st stage	λ_2	.41	.36	.51	.48	EXC2	.93	[.90;.95]	.94	[.92;.96]	.91	[.88;.93]	.92	[.89;.95]
	α	.92	.93	.89	.91	EXC3	.95	[.93;.95]	.94	[.91;.96]	.91	[.88;.93]	.93	[.90;.95]
	CR	.94	.96	.92	.94	EXC4	.84	[.80;.88]	.85	[.80;.89]	.81	[.74;.86]	.82	[.76;.87]
	AVE	.81	.84	.75	.79									
Social value	λ_1	3.45	3.60	3.55	3.34	SOC1	.94	[.91;.96]	.95	[.91;.97]	.98	[.52;.99]	.85	[.75;.92]
1st stage	λ_2	.23	.25	.30	.32	SOC2	.95	[.91;.97]	.97	[.95;.98]	.99	[.53;.99]	.94	[.92;.96]
	α	.95	.96	.96	.93	SOC3	.91	[.87;.95]	.92	[.88;.96]	.81	[.06;.98]	.95	[.92;.97]
	CR	.96	.97	.96	.95	SOC4	.91	[.85;.95]	.95	[.92;.97]	.95	[.46;.98]	.90	[.82;.94]
	AVE	.86	.90	.87	.83									
Play	λ_1	4.09	4.20	3.42	4.14	PLAY1	.82	[.77;.87]	.82	[.75;.87]	.58	[.15;.73]	.80	[.74;.85]
1st stage	λ_2	.56	.42	.76	.52	PLAY2	.91	[.88;.94]	.90	[.86;.93]	.81	[.69;.95]	.93	[.90;.95]
	α	.94	.95	.88	.95	PLAY3	.95	[.91;.96]	.95	[.91;.97]	.90	[.60:.94]	.94	[.92;.96]
	CR	.96	.96	.90	.96	PLAY4	.91	[.86;.95]	.96	[.93;.98]	.85	[.49;.92]	.94	[.91;.96]
	AVE	.81	.84	.64	.83	PLAY5	.91	[.85;.94]	.95	[.93;.96]	.82	[.45;.90]	.93	[.90;.95]
Aesthetic value[a]	λ_1		1.79	3.46	1.82	AES1	.59	[.36;.77]	.96	[.92;.98]	.92	[.88;.95]	.95	[.91;.97]
1st stage	λ_2		.21	.22	.18	AES2	.93	[.76;1.00]	.93	[.87;.97]	.92	[.86;.95]	.96	[.94;.97]
	α		.88	.95	.90	AES3	.88	[.68;.98]			.95	[.93;.97]		
	CR		.94	.96	.95	AES4					.93	[.90;.96]		
	AVE		.89	.86	.91									

Notes. TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.
[a] The items depend on the setting. For the specific items, the reader is referred to Table 9.

Table C.12 Psychometric properties for Holbrook's method (continued)

Construct		Construct level statistics				Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)							
VAL						LV_EFF	.42	[.23;.59]	.00	[-.21;.22]	.68	[.50;.81]	.47	[.28;.66]
2d stage						LV_EXC	.99	[.97;1.00]	.98	[.93;.99]	.91	[.82;.96]	.96	[.87;.99]
						LV_SOC	.09	[-.08;.23]	.03	[-.16;.20]	-.14	[-.32;.04]	.21	[.02;.39]
						LV_PLAY	.39	[.23;.53]	.47	[.28;.64]	.35	[.16;.53]	.56	[.36;.73]
						LV_AES	.65	[.52;.76]	.21	[.03;.38]	.55	[.38;.70]	.79	[.65;.89]
SAT						SAT	1.00		1.00		1.00		1.00	
REP	λ_1	2.35	2.27	1.97	2.39	REP1	.90	[.88;.93]	.93	[.91;.97]	.93	[.89;.96]	.93	[.90;.95]
	λ_2	.48	.59	.89	.48	REP2	.94	[.92;.96]	.95	[.92;.97]	.94	[.90;.97]	.95	[.93;.96]
	α	.86	.83	.70	.87	REP3	.80	[.66;.88]	.69	[.50;.80]	.48	[.19;.65]	.80	[.69;.87]
	CR	.91	.90	.84	.92									
	AVE	.78	.75	.66	.80									
WOM	λ_1	2.67	2.66	2.67	2.62	WOM1	.95	[.93;.97]	.95	[.93;.97]	.93	[.89;.96]	.94	[.91;.96]
	λ_2	.19	.22	.20	.22	WOM2	.95	[.93;.96]	.96	[.94;.97]	.96	[.94;.97]	.94	[.92;.96]
	α	.94	.94	.94	.93	WOM3	.93	[.90;.95]	.92	[.88;.94]	.94	[.90;.97]	.92	[.88;.95]
	CR	.96	.96	.96	.95									
	AVE	.89	.89	.89	.87									

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Table C.13 Discriminant validity of reflective constructs for Holbrook's method

Comparison squared latent variable correlations and AVE on the diagonal				
		Toothpaste		
	REP	SAT	VAL	WOM
REP	.78			
SAT	.47	1.00		
VAL	.56	.50		
WOM	.39	.35	.51	.89
		Soft drink		
	REP	SAT	VAL	WOM
REP	.75			
SAT	.35	1.00		
VAL	.33	.45		
WOM	.44	.35	.29	.89
		DVD player		
	REP	SAT	VAL	WOM
REP	.66			
SAT	.31	1.00		
VAL	.30	.38		
WOM	.49	.31	.31	.89
		Day cream		
	REP	SAT	VAL	WOM
REP	.80			
SAT	.58	1.00		
VAL	.38	.47		
WOM	.48	.35	.34	.87

Table C.14 Discriminant validity of formative constructs for Holbrook's method

Confidence intervals				
Toothpaste				
	REP	SAT	VAL	WOM
REP				
SAT	[.58;.97]			
VAL	[.65;.84]	[.61;.81]		
WOM	[.51;.73]	[.48;.71]	[.62;.81]	
Soft drink				
	REP	SAT	VAL	WOM
REP				
SAT	[.48;.70]			
VAL	[.46;.68]	[.57;.77]		
WOM	[.56;.77]	[.48;.70]	[.42;.66]	
DVD player				
	REP	SAT	VAL	WOM
REP				
SAT	[.44;.67]			
VAL	[.43;.66]	[.51;.72]		
WOM	[.60;.80]	[.44;.67]	[.44;.67]	
Day cream				
	REP	SAT	VAL	WOM
REP				
SAT	[.67;.85]			
VAL	[.50..72]	[.58;.78]		
WOM	[.59;.79]	[.48;.70]	[.47;.69]	

In Table C.15, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

Table C.15 Results structural model for Holbrook's method

R^2 values								
		TP		SD		DVD		DC
SAT	.50	[.39;.59]	.45	[.38;.51]	.38	[.32;.44]	.47	[.41;.52]
REP	.61	[.56;.65]	.40	[.33;.48]	.37	[.32;.43]	.60	[.44;.64]
WOM	.52	[.47;.57]	.39	[.33;.45]	.38	[.33;.43]	.41	[.34;.48]
Path coefficients								
		TP		SD		DVD		DC
VAL → SAT	.71	[.56;.83]	.67	[.57;.76]	.62	[.52;.72]	.68	[.61;.76]
VAL → REP	.53	[.15;.55]	.32	[.20;.51]	.33	[.19;.51]	.17	[.04;.36]
VAL → WOM	.59	[.41;.72]	.26	[.14;.41]	.33	[.16;.55]	.34	[.15;.57]
SAT → REP	.31	[.29;.68]	.37	[.13;.55]	.35	[.20;.48]	.65	[.48;.76]
SAT → WOM	.18	[.04;.36]	.42	[.25;.55]	.35	[.19;.49]	.36	[.14;.52]

Notes. REP = repurchase intention; SAT = satisfaction; VAL = value; WOM = word of mouth; TP = toothpaste; SD = soft drink; DVD = DVD player; DC = day cream.

Appendix D Scenarios Chapter 3

Study 1 – Student sample (paper-and-pencil questionnaire)

Instructies

Mijn naam is Sara Leroi-Werelds en ik ben doctoraatsstudente bij de vakgroep Marketing & Strategie. In het teken van mijn doctoraat doe ik een onderzoek waar ik jouw hulp voor nodig heb.

Je hebt naast dit instructieformulier de volgende twee documenten ontvangen:

Een omschrijving van een kastensysteem dat opgebouwd is uit verschillende modules met op het einde een aantal vragen over hoe realistisch je de beschreven situatie vindt.

Een vragenlijst bestaande uit verschillende onderdelen die aangeven hoe jij staat ten opzichte van dit kastensysteem.

Gelieve alle vragen in te vullen. De meeste vragen zijn in de vorm van stellingen. Voor elk van de stellingen dien je aan te geven in welke mate je hiermee akkoord gaat, waarbij 1 = "helemaal niet akkoord"; 5 = "noch akkoord, noch niet akkoord" en 9 = "helemaal akkoord". De tussenliggende scores stellen je in staat je antwoord te nuanceren.

Er zijn geen goede of foute antwoorden. Het gaat over jouw mening.

De enquêtes zijn anoniem.

Als blijkt van waardering voor je medewerking verloten we 10 duo-filmtickets onder de respondenten. Wil je kans maken op één van deze duo-filmtickets, vul dan hieronder je studentnummer in en lever dit blad dan los van je ingevulde vragenlijst in.

Alvast bedankt!

Met vriendelijke groeten,

Sara Leroi-Werelds

Inleiding

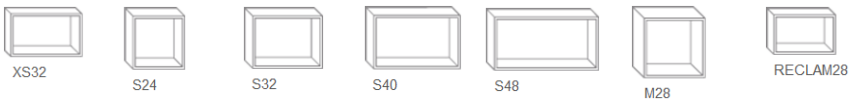
Stel dat je een nieuwe boekenkast nodig hebt. Je hebt op internet een leuk kastensysteem gevonden bestaande uit verschillende individuele kastmodules. Op deze manier kan je je eigen kast ontwerpen.

Het systeem bestaat uit 21 formaten die speciaal werden ontworpen volgens de standaardafmetingen van boeken, cd's en dvd's. Elk formaat kan in drie dieptes worden besteld, namelijk 17 cm, 25 cm en 33 cm.

CD-FORMATEN

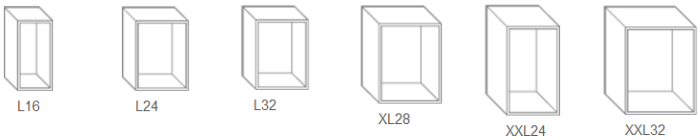
B24xH16cm B32xH16cm B40xH16cm B48xH16cm B64xH16cm B80xH16cm

BOEK/DVD-FORMATEN



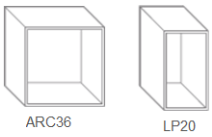
B32xH20cm B24xH24cm B32xH24cm B40xH24cm B48xH24cm B24xH28cm B28xH18cm

GROTE BOEK-FORMATEN



B16xH32cm B24xH32cm B32xH32cm B28xH36cm B24xH40cm B32xH40cm

RINGMAPPEN/LP-FORMATEN



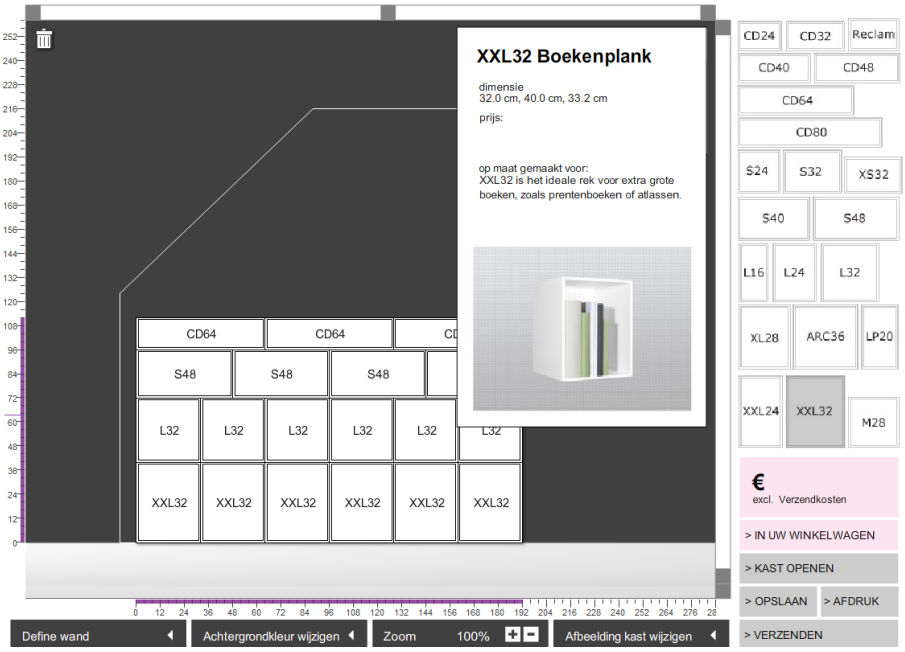
B36xH36cm B20xH36cm

Hoe gaat dit in zijn werk?

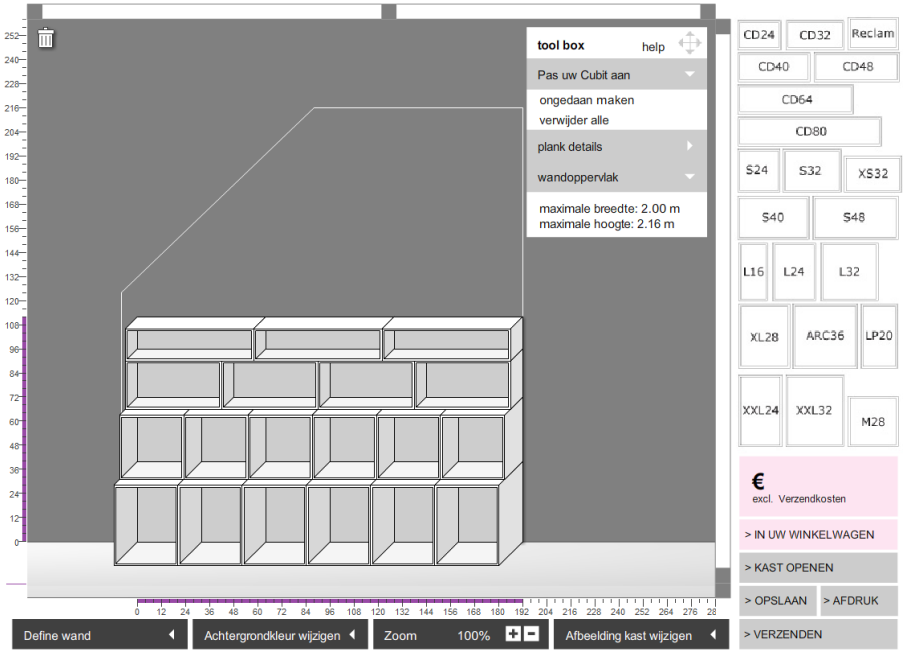
Om deze kast op een eenvoudige manier te realiseren, kan je gebruik maken van de opbergplanner op de website. Nadat je je muur hebt opgemeten, kan je hier de afmetingen van de muur tekenen.

Nadat je de afmetingen van de muur hebt uitgetekend, klik je op "OK" om te bevestigen.

Nu kan je individuele kastmodules toevoegen. Voor elke module krijg je informatie als je op de module klikt. Door de module aan te klikken en naar het muuroppervlak te slepen, kan je deze toevoegen aan je kastontwerp. De opbergplanner houdt automatisch bij hoeveel de totale prijs van je ontwerp is.



Je kan je kast ook in 3D bekijken door “Afbeelding kast wijzigen” en vervolgens “3D” te klikken. Ook is er de mogelijkheid om tussentijds je plannetje af te drukken of op te slaan.



Als je kastontwerp klaar is, klik je op "IN UW WINKELWAGEN". Vervolgens krijg je een overzicht van de gekozen modules, de prijzen van de afzonderlijke modules en de totaalprijs. Nadat je je gegevens hebt ingevuld, kan je je bestelling bevestigen.

Binnen de week worden de individuele kastmodules volledig gemonteerd bij je thuis bezorgd samen met het door jou gemaakte kastenplan.

Nadien ga je zelf aan de slag met de individuele kastmodules om je eigen kast te bouwen.

Je hebt twee opties: (1) modules stapelen en verbinden en (2) modules aan de muur bevestigen.

Optie 1: modules stapelen en verbinden

Het opbouwen van een gestapelde kast is erg eenvoudig en je hebt er geen gereedschap voor nodig. Dankzij de groef op de achterzijde van elke module en het meegeleverde verbindingselement, kunnen de verschillende modules met elkaar verbonden worden, zonder schroeven te gebruiken.

Steek het verbindings-element in de groef

Zet de volgende module er aan vast.

Optie 2: modules aan de muur bevestigen

Als je de modules zwevend aan de muur wil hangen of wanneer je een kast aan de muur wil bevestigen, heb je wandklemmen nodig (deze zijn inbegrepen in het pakket). Wanneer je kast hoger is dan 1.40m, is het aangeraden om deze aan de muur vast te maken voor meer stabiliteit.

De op maat gemaakte wandklemmen uit verzinkt staal worden geleverd met twee schroeven en passende pluggen. De klemmen passen perfect in de groef en maken het mogelijk om de modules stevig aan de muur te bevestigen.

Daarnaast ontvang je de boorsjablonen die speciaal gemaakt werden voor de module in kwestie. Plaats het bijgevoegde boorsjabloon tegen de muur, boor de gaten en plaats de klemmen. Vervolgens kan je de module ophangen.

Plaats het boorsjabloon tegen de muur.

Boor de gaten.

Plaats de klemmen.

Hang de module op.

Study 2 – iVOX sample (online questionnaire)

Hartelijk dank om deel te nemen aan dit onderzoek.

Dit onderzoek wordt uitgevoerd in functie van mijn doctoraat aan de Universiteit Hasselt.

Alvorens met de vragenlijst te beginnen, wordt u gevraagd om zich in te leven in een situatie waarbij u (nieuwe) laminaat zou willen voor de slaapkamer. Gelieve deze situatieschets nauwkeurig te lezen en u zo goed mogelijk in te leven in de beschreven situatie.

Tijdens de beschrijving van de situatie wordt u ook een filmpje getoond. Gelieve dit filmpje volledig en aandachtig te bekijken. Dit is essentieel om de vragen te beantwoorden.

Vervolgens worden u een aantal vragen gesteld over deze situatie. Er zijn geen goede of foute antwoorden, het gaat om uw persoonlijke reacties en opinies.

De informatie die u geeft, is confidentieel en zal enkel voor statistische doeleinden worden gebruikt. Zoals u zult zien, zijn alle vragen gemakkelijk te beantwoorden, maar we zouden u toch willen verzoeken om elke vraag nauwkeurig te lezen.

De totale duurtijd van deze enquête (inclusief filmpje) is 15 à 20 minuten.

Alvast bedankt voor uw deelname!

Sara Leroi-Werelds

Doctoraatsstudent Universiteit Hasselt

Gelieve onderstaand scenario aandachtig te lezen en u zo goed mogelijk in te leven in de beschreven situatie.

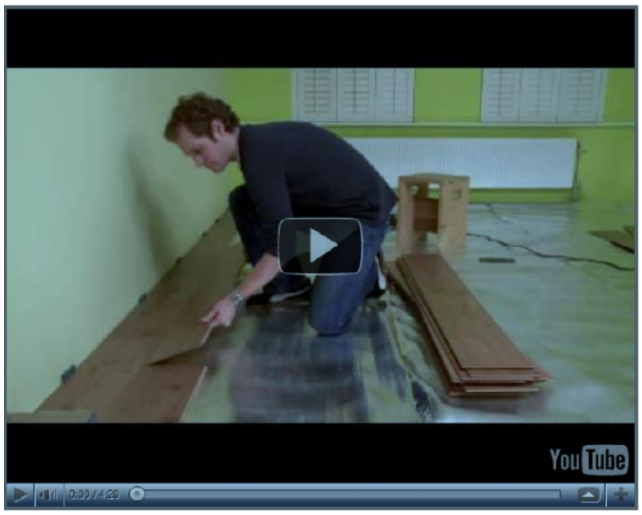
Stel dat u de vloer van de slaapkamer wil vernieuwen. U beslist om laminaat te leggen en u heeft de website CanDo gevonden die u de mogelijkheid biedt om laminaat te kiezen en deze online te bestellen. Deze website is erkend als Eurosafe shop. Dit keurmerk biedt u, als klant, de zekerheid van kopen op internet.

Op basis van gesprekken met anderen en wat opzoekwerk, heeft u de gewenste laminaat, plinten en ondervloer gekozen en intussen ook al besteld via deze webwinkel. U krijgt van deze webwinkel de keuze om de laminaat zelf te leggen of om dit door een werknemer van Cando te laten doen.

Als u ervoor kiest om zelf laminaat te leggen, kan u via deze webwinkel een gereedschapsbox lenen, die alle benodigde gereedschappen bevat.

Bovendien kan u op de website van deze webwinkel het volgende filmpje bekijken over het zelf leggen van laminaat.

Het filmpje duurt 4:29. Toch willen wij u vragen dit filmpje aandachtig te bekijken. Gelieve op Play te drukken om het filmpje te starten.



Study 3 – Experimental design (online questionnaire)

Hartelijk dank om deel te nemen aan dit onderzoek.

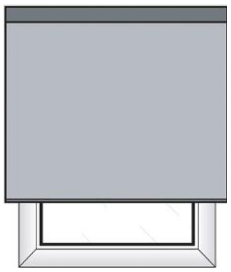
Gelieve onderstaand scenario aandachtig te lezen en u zo goed mogelijk in te leven in de beschreven situatie.

Stel dat u het gordijn van de slaapkamer wilt vernieuwen. U beslist om een roljaloezie te kopen en u gaat naar een interieurwinkel in uw buurt. De winkelbediende vertelt u dat roljaloezieën op twee manieren kunnen worden geplaatst: op het raamkozijn of in het raamkozijn.

1. op het raamkozijn (ook wel "op de dag" genoemd)

De roljaloezie komt vóór de raamopening te hangen en wordt bevestigd tegen de muur.

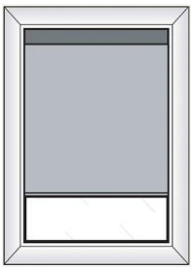
Er is een overlap aan beide zijden van de raamopening.



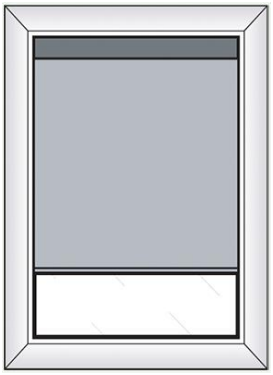
2. in het raamkozijn (ook wel "in de dag" genoemd):

De roljaloezie komt in de raamopening te hangen en wordt bevestigd aan de bovenzijde van de raamopening.

De roljaloezie past precies in de raamopening.



U beslist om de roljaloezie in het raamkozijn (optie 2) te plaatsen.



U krijgt in de winkel de keuze om de roljaloezie zelf op te meten en te monteren of om dit te laten doen door een werknemer van de interieurwinkel.

De winkelbediende geeft u een brochure met instructies over hoe u zelf de roljaloezie kan opmeten en installeren.

Gelieve de bijgeleverde brochure aandachtig door te nemen.

Brochure:

do it yourself

Brochure
Duorolgordijn of Roljaloezie

Plaatsing in het raamkozijn

Duorolgordijnen of roljaloezieën zijn zeer decoratief en functioneel. Met roljaloezieën combineert u het praktische van jaloezieën en de sfeervolle uitstraling van rolgordijnen.

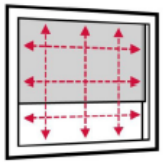
Een roljaloezie bestaat uit twee lagen stof die over elkaar bewegen. U kan spelen met de lichtinval, door de horizontale transparante en niet transparante banen in de stof ten opzichte van elkaar te verschuiven. Een ideale oplossing als zonnewering, om sfeer te creëren, of juist voor privacy doeleinden.

Benodigdheden

Om een roljaloezie op te meten en te installeren, heeft u het volgende gereedschap nodig:

- Een plooimeter
- Een potlood
- Een waterpas (minstens 50 cm)
- Een boormachine
- Een boor met een diameter van 6 mm
- Een (elektrische) schroevendraaier
- Eventueel een trapladder

Stap 1: Opmeten



- Meet de breedte in het raamkozijn op de volgende drie plaatsen: boven, midden en onder. Ga bij verschillen uit van de kleinste maat. Geef deze maat op als breedte. Dit wordt ook wel de penmaat of blijvende maat genoemd.
- Meet de hoogte van het raamkozijn op de volgende drie plaatsen: links, midden en rechts. Ga bij verschillen uit van de kleinste maat. Geef deze maat op als hoogte.
- U kan ook de plaats van de bediening kiezen: links of rechts van het raam.

NEEM THUIS DE MATEN EN VUL AAN DE HAND HIERVAN DE BESTELBON IN DE WINKEL IN:

Breedte: ..... cm

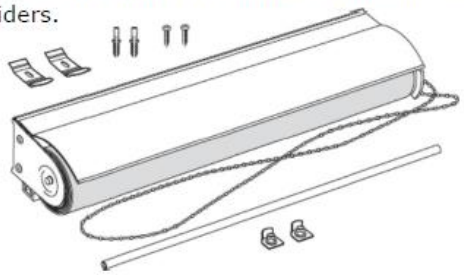
Hoogte: ..... cm

Bedieningszijde: Links/Rechts

Stap 2: De roljaloezie kiezen, bestellen en afhalen

- Vervolgens gaat u naar uw interieurwinkel met de maten en vult u de bestelbon in.
- U kan kiezen uit meer dan 300 verschillende kleuren en designs. Vraag hiervoor de kleurenwaaier in de interieurwinkel.

- Bovendien heeft u de keuze uit 10 verschillende bedieningskoorden.
- Twee weken na uw bestelling kan u uw roljaloezie afhalen in de winkel, inclusief bevestigingsclips, pluggen, schroeven, onderroede en stofgeleiders.



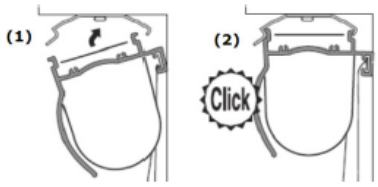
Stap 3: De bevestigingsclips monteren

- Voor montage in het raamkozijn heeft u de bevestigingsclips nodig.
- Deze clips worden tegen de onderzijde van het raamkozijn bevestigd.
- Houd minstens 0,5 cm afstand van het raam en van de muur.
- Teken de montagegaten voor de clips af met een potlood.

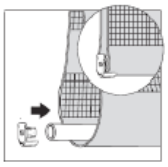
- Bevestig de clips:
  - Indien u de clips in **steen** moet bevestigen, dient u eerst gaten te boren met een boormachine. Vervolgens gebruikt u de bijgeleverde pluggen en schroeft u de clips vast met de bijgeleverde schroeven en een (elektrische) schroevendraaier.
  - Indien u de clips in **gipskarton of hout** moet bevestigen, schroeft u de clips rechtstreeks vast met de bijgeleverde schroeven en een (elektrische) schroevendraaier. U heeft dan geen pluggen nodig.
- Tip: Controleer regelmatig met een waterpas.

Stap 4: Bevestigen roljaloezie

- Vervolgens kan u de roljaloezie in de bevestigingsclips klikken. Bevestig eerst de raamzijde (zie afbeelding 1) en vervolgens de kamerzijde (zie afbeelding 2).



- Vervolgens plaatst u de onderroede tussen de twee stoflagen.
- Tenslotte klikt u de stofgeleiders in de roede.



Onderhoud
Alle stoffen zijn afborstelbaar of met een vochtige doek te reinigen. De precieze informatie vindt u op de stalen. Tevens zijn alle stoffen antistatisch, waardoor de jaloezieën langer stofvrij blijven.

Treatments:

1. Filler task controlegroep:

Gelieve onderstaande woordpuzzels op te lossen.

Maak zoveel mogelijk (maximum 10) andere woorden met het woord LEERSITUATIE. U hoeft niet steeds alle letters te gebruiken.

.....

.....

.....

.....

.....

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.....

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.....

.....

Welk woord betekent ongeveer hetzelfde als OPGEWEKT?

O zenuwachtig

O vrolijk

O aandachtig

O onrustig

Welk woord past voor de volgende woorden: ….BREKER - ….REGEL - ….COMPUTER

O golf

O ijs

O spel

O vuist

Gelieve de volgende rekensommen op te lossen.

12 x 4 = …….

32 + 14 = …….

46 - 25 = …….

48 : 6 = …….

2. Gereepdschapsbox

Stel dat de winkelbediende u zegt dat als u ervoor kiest om de roljaloezie zelf op te meten en te installeren, u gebruik kan maken van een gereedschapsbox.

Gelieve uw hand op te steken zodat we u meer informatie kunnen bezorgen over deze gereedschapsbox.

Brochure gereedschapsbox:

do it yourself

Gereedschapsbox

In deze gereedschapsbox zitten alle gereedschappen: alles wat u nodig heeft en bovendien alles in perfecte staat.

Om deze gereedschapsbox te ontvangen, moet u enkel een waarborgsom van €100 betalen die u terugkrijgt als u de gereedschapsbox terug inlevert.

Inhoud gereedschapsbox:

1) Plooimeter

2) Schrijnwerkerspotloden

3) Waterpas 60 cm

4) Boormachine
inclusief boor met een diameter van 6mm

5) Elektrische schroevendraaier

Gelieve de informatie over de gereedschapsbox door te nemen.

3. Video

Bovendien toont de winkelbediende u de volgende video met uitleg over het zelf opmeten en plaatsen van de roljaloezie.

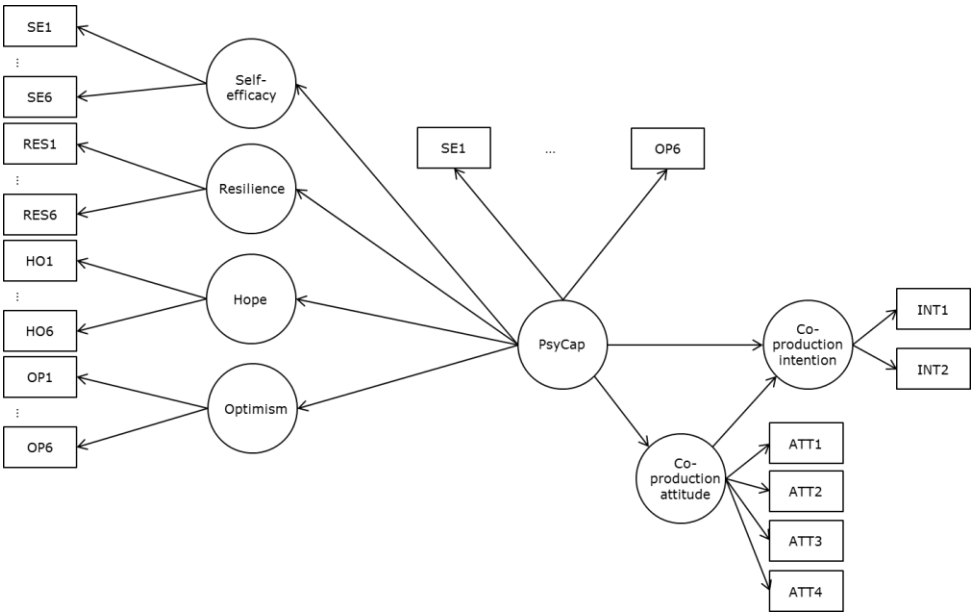
Gelieve uw koptelefoon op te doen en de video aandachtig te bekijken.

Appendix E Extended report PLS-SEM Chapter 3

Study 1

The PLS path model that was programmed in the SmartPLS software is presented in Figure E.1.

Figure E.1 Initial PLS path model Study 1



To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Table E.1.

Table E.1 Initial psychometric properties Study 1

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Self-efficacy	λ_1	5.15	SE1	.91	[.86;.95]
	λ_2	.33	SE2	.93	[.89;.96]
	α	.97	SE3	.94	[.91;.95]
	CR	.97	SE4	.95	[.93;.97]
	AVE	.86	SE5	.93	[.88;.96]
			SE6	.90	[.85;.94]
Resilience	λ_1	3.70	RES1	.76	[.68;.82]
	λ_2	.88	RES2	.76	[.65;.83]
	α	.87	RES3	.87	[.81;.91]
	CR	.90	RES4	.72	[.61;.81]
	AVE	.61	RES5	.89	[.85;.92]
			RES6	.65	[.58;.73]
Hope	λ_1	3.54			
	λ_2	**1.03**			
	α				
	CR				
	AVE				
Optimism	λ_1	3.05			
	λ_2	**1.16**			
	α				
	CR				
	AVE				
Attitude	λ_1	2.99	ATT1	.87	[.82;.92]
	λ_2	.50	ATT2	.84	[.75;.90]
	α	.89	ATT3	.87	[.81;.91]
	CR	.92	ATT4	.88	[.82;.92]
	AVE	.75			
Intention	λ_1	1.75	INT1	.94	[.90;.96]
	λ_2	.25	INT2	.94	[.91;.95]
	α	.86			
	CR	.93			
	AVE	.88			

Analysis of PsyCap's measurement model revealed that the constructs hope and optimism were not unidimensional. Instead of a single underlying dimension, the results pointed toward two underlying dimensions for both constructs. Inspection of the items and the definitions of hope and optimism, offered an explanation for this two-dimensional structure. In line with the definition of hope, the distinction between willpower and waypower was reflected by the data. Likewise, for optimism the two dimensions are in line with the two specific elements in the construct's definition, namely positive expectation and explanatory style. As a result, this study continues with a conceptualization of PsyCap consisting of six rather than four dimensions (see Figure E.2). The psychometric properties of willpower, waypower, explanatory style, and positive expectation are presented in Table E.2. The second-order psychometric properties are presented in Table E.3.

Figure E.2 Final PLS path model Study 1

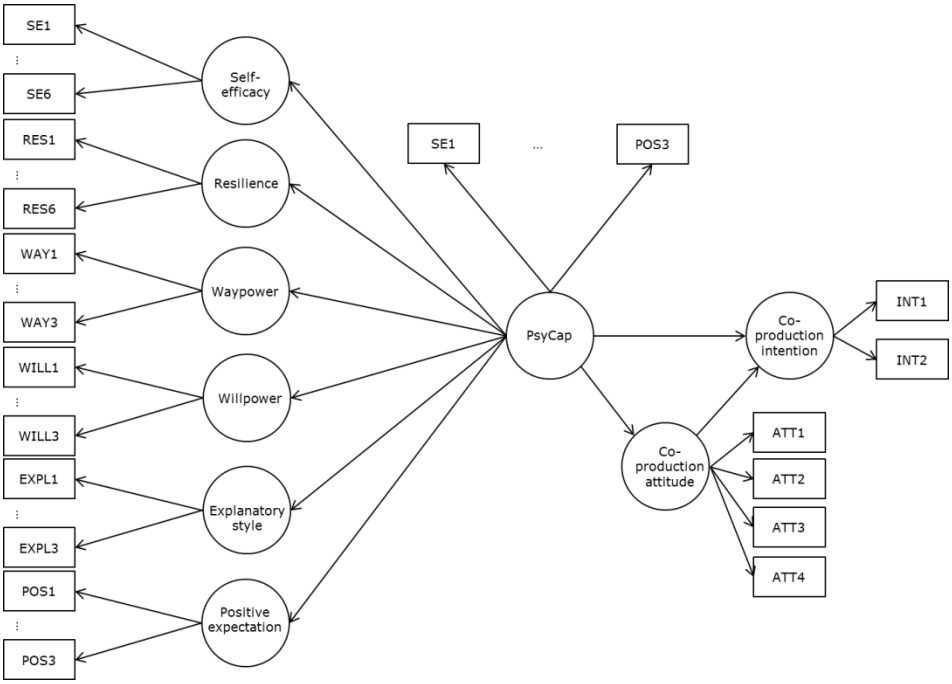


Table E.2 Psychometric properties Study 1

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Willpower	λ_1	2.32	WILL1	.90	[.87;.93]
	λ_2	.52	WILL2	.79	[.68;.86]
	α	.85	WILL3	.94	[.92;.96]
	CR	.91			
	AVE	.77			
Waypower	λ_1	2.22	WAY1	.91	[.89;.94]
	λ_2	.48	WAY2	.79	[.69;.87]
	α	.82	WAY3	.87	[.82;.91]
	CR	.89			
	AVE	.74			
Positive Expectation	λ_1	2.40	POS1	.79	[.70;.86]
	λ_2	.50	POS2	.95	[.92;.96]
	α	.87	POS3	.93	[.90;.95]
	CR	.92			
	AVE	.80			
Explanatory Style	λ_1	1.76	EXPL1	.78	[.65;.86]
	λ_2	.75	EXPL2	.81	[.68;.89]
	α	.64	EXPL3	.70	[.56;.79]
	CR	.81			
	AVE	.59			

Table E.3 Second-order PsyCap Study 1

Construct reliability - formula Fornell & Larcker (1981)	.90	
AVE	.61	
Indicator validity (squared path coefficient > .50)		
Explanatory style	**.34**	**<.50**
Waypower	**.44**	**<.50**
Willpower	.84	
Positive Expectation	.69	
Resilience	.56	
Self-efficacy	.81	

Although explanatory style and waypower had an indicator validity which not reaches the .50 level, I decided to keep those first-order constructs based on the notion that the PsyCap constructs is theoretically based on its PsyCap-capacities.

Table E.4 presents the results with regard to the discriminant validity of the constructs.

Table E.4 Discriminant validity of reflective constructs Study 1

Comparison squared latent variable correlations and AVE on the diagonal									
	1	2	3	4	5	6	7	8	9
1. Attitude	.75								
2. Expl. style	.08	.59							
3. Waypower	.09	.19	.74						
4. Willpower	.14	.18	.32	.77					
5. Intention	.54	.06	.06	.12	.88				
6. Positive exp.	.12	.20	.18	.60	.09	.80			
7. PsyCap	.16	.34	.44	.84	.13	.69	.61		
8. Resilience	.06	.25	.26	.29	.04	.30	.56	.61	
9. Self-efficacy	.12	.14	.22	.77	.11	.48	.81	.26	.86

In Table E.5, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

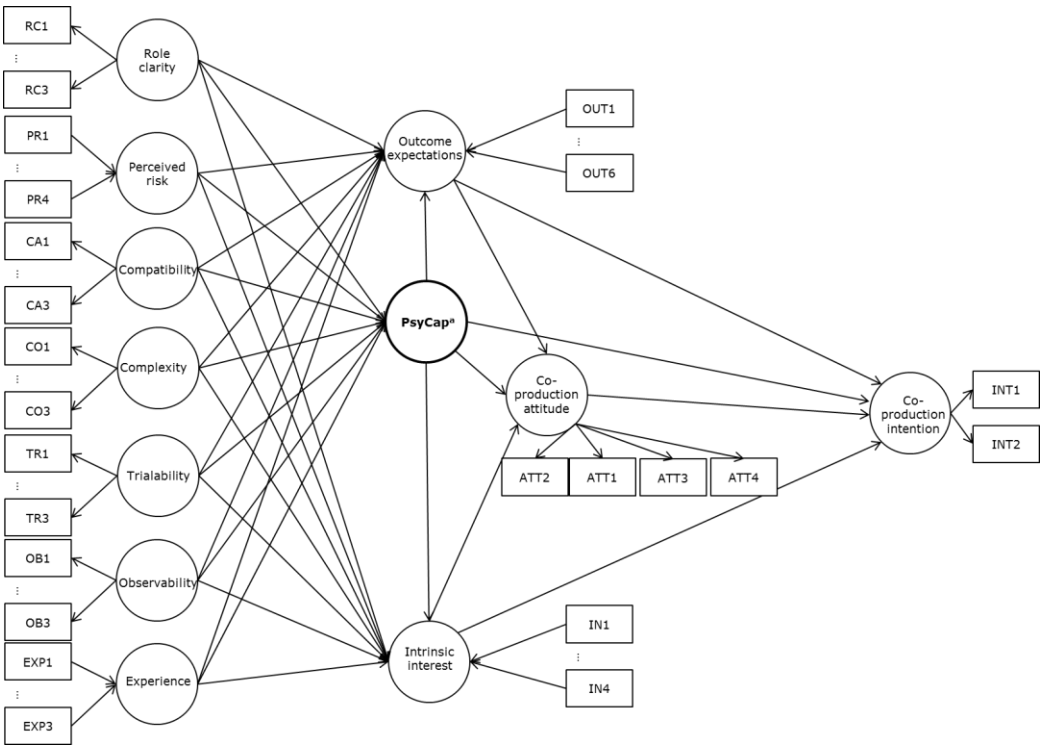
Table E.5 Results structural model Study 1

	R^2	**95% percentile confidence interval**
Attitude	.16	[.10;.21]
Intention	.54	[.50;.59]
	Path coefficient	**95% percentile confidence interval**
PsyCap → Attitude	.39	[.26;.53]
PsyCap → Intention	.70	[.63;.78]

Study 2

The PLS path model that was programmed in the SmartPLS software is presented in Figure E.3. To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Tables E.6 to E.9.

Figure E.3 Path model Study 2



[a]The second-order PsyCap construct was measured in the same way as depicted in Figure E.2 (i.e., with the 24 PSQ indicators)

Table E.6 Psychometric properties Study 2

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Self-efficacy	λ_1	5.74	SE1	.97	[.96;.98]
	λ_2	.09	SE2	.98	[.97;.99]
	α	.99	SE3	.97	[.96;.98]
	CR	.99	SE4	.98	[.97;.99]
	AVE	.96	SE5	.98	[.97;.99]
			SE6	.98	[.97;.99]
Resilience	λ_1	4.98	RES1	.91	[.87;.94]
	λ_2	.35	RES2	.92	[.88;.95]
	α	.96	RES3	.95	[.93;.97]
	CR	.97	RES4	.87	[.81;.92]
	AVE	.83	RES5	.93	[.90;.96]
			RES6	.88	[.82;.93]
Willpower	λ_1	2.80	WILL1	.96	[.95;.98]
	λ_2	.12	WILL2	.96	[.94;.97]
	α	.97	WILL3	.98	[.96;.99]
	CR	.98			
	AVE	.93			
Waypower	λ_1	2.68	WAY1	.96	[.94;.96]
	λ_2	.23	WAY2	.96	[.94;.97]
	α	.94	WAY3	.92	[.88.94]
	CR	.96			
	AVE	.89			
Positive expectation	λ_1	2.75	POS1	.93	[.89;.96]
	λ_2	.19	POS2	.97	[.96;.98]
	α	.95	POS3	.96	[.94;.98]
	CR	.97			
	AVE	.92			
Explanatory style	λ_1	2.57	EXPL1	.90	[.86;.93]
	λ_2	.29	EXPL2	.95	[.93;.96]
	α	.92	EXPL3	.92	[.89;.94]
	CR	.95			
	AVE	.86			

Table E.6 Psychometric properties Study 2 (continued)

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Outcome expectations			OUT1	.75	[.58;.86]
			OUT2	.88	[.76;.94]
			OUT3	.76	[.60;.86]
			OUT4	.50	[.31;.64]
			OUT5	.75	[.61;84]
			OUT6	.73	[.58;.83]
Intrinsic interest			IN1	.99	[.96;1.00]
			IN2	.83	[.71;.92]
			IN3	.74	[.58;.86]
			IN4	.77	[.66;.86]
Role clarity	λ_1	2.78	RC1	.95	[.91;.97]
	λ_2	.16	RC2	.98	[.96;.99]
	α	.96	RC3	.96	[.93;.98]
	CR	.97			
	AVE	.93			
Perceived risk			PR1	.56	[.36;.72]
			PR2	.77	[.60;.87]
			PR3	.92	[.81;.98]
			PR4	.56	[.35;.74]
Compatibility	λ_1	2.70	CA1	.96	[.94;.97]
	λ_2	.20	CA2	.93	[.89;.95]
	α	.94	CA3	.96	[.95;.97]
	CR	.96			
	AVE	.90			
Complexity	λ_1	2.45	CO1	.86	[.80;.91]
	λ_2	.37	CO2	.92	[.88;.94]
	α	.89	CO3	.93	[.90;.96]
	CR	.93			
	AVE	.82			

Table E.6 Psychometric properties Study 2 (continued)

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Trialability	λ_1	2.36	TR1	.82	[.50;.91]
	λ_2	.49	TR2	.94	[.78;.96]
	α	.86	TR3	.89	[.78;.97]
	CR	.91			
	AVE	.78			
Observability	λ_1	2.17	OB1	.84	[.79;.88]
	λ_2	.52	OB2	.89	[.84;.92]
	α	.81	OB3	.82	[.71;.89]
	CR	.89			
	AVE	.72			
Experience			EXP1	.62	[.52;.72]
			EXP2	.81	[.71;.89]
			EXP3	1,00	[.98;1.00]
Attitude	λ_1	3.51	ATT1	.94	[.91;.97]
	λ_2	.22	ATT2	.94	[.90;.96]
	α	.95	ATT3	.93	[.89;.95]
	CR	.97	ATT4	.94	[.91;.97]
	AVE	.88			
Intention	λ_1	1.89	INT1	.97	[.96;.99]
	λ_2	.11	INT2	.97	[.95;.99]
	α	.94			
	CR	.97			
	AVE	.95			

Table E.7 Second-order PsyCap Study 2

Construct reliability - formula Fornell & Larcker (1981)	.98
AVE	.88
Indicator validity (squared path coefficient > .50)	
Explanatory style	.85
Waypower	.86
Willpower	.92
Positive Expectation	.90
Resilience	.83
Self-efficacy	.92

Table E.8 Discriminant validity of formative constructs Study 2

	Outcome expectations	**Intrinsic interest**	**Perceived risk**	**Experience**
Attitude	[.45;.66]	[.54;.74]	[-.62;-.40]	[.40;.62]
Compatibility	[.57;.76]	[.64;.81]	[-.64;.-.43]	[.53;.73]
Complexity	[-.62;-.41]	[-.72;-.52]	[.52;.72]	[-.67;-.46]
Experience	[.35;.58]	[.50;.70]	[-.63;-.42]	
Explanatory	[.53;.73]	[.66;.83]	[-.73;-.53]	[.58;.77]
Intention	[.51;.71]	[.61;.79]	[-.66;-.45]	[.51;.71]
Intrinsic	[.54;.74]		[-.68;-.48]	[.50;.70]
Observability	[.38;.61]	[.39;.61]	[-.61;-.39]	[.40;.62]
Outcome		[.54;.74]	[-.60;-.38]	[.35;.58]
Perceived risk	[-.61;-.39]	[-.68;-.48]		[-.63;-.42]
Positive	[.51;.71]	[.66;.83]	[-.69;-.49]	[.56;.75]
PsyCap	[.55;.75]	[.69;.85]	[-.73;-.53]	[.65;.82]
Resilience	[.49;.69]	[.59;.78]	[-.65;-.43]	[.54;.74]
Role clarity	[.42;.63]	[.38;.60]	[-.53;-.30]	[.26;.50]
Self-efficacy	[.52;.72]	[.67;.84]	[-.72;-.52]	[.64;.82]
Trialability	[.02;.27]	[.02;.27]	[-.07;.18]	[-.14;.12]
Waypower	[.52;.72]	[.58;.77]	[-.66;-.45]	[.62;.80]
Willpower	[.53;.73]	[.69;.85]	[-.72;-.52]	[.62;.80]

Table E.9 Discriminant validity of reflective constructs Study 2

Comparison squared latent variable correlations and AVE on the diagonal																		
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16	17.	18.
1. Attitude	.88																	
2. Compatibility	.50	.90																
3. Complexity	.27	.35	.82															
4. Experience	.26	.40	.32															
5.Explanatory Style	.49	.54	.45	.45	.86													
6. Intention	.64	.66	.38	.37	.60	.95												
7. Intrinsic interest	.41	.53	.38	.36	.55	.49												
8. Observability	.18	.31	.23	.26	.38	.26	.25	.72										
9. Outcome expectations	.31	.44	.27	.22	.39	.37	.41	.25										
10. Perceived risk	.26	.29	.39	.27	.39	.30	.34	.25	.24									
11. Positive expectation	.49	.49	.43	.43	.80	.57	.55	.37	.35	.35	.92							
12. PsyCap	.52	.61	.51	.54	.84	.66	.60	.42	.42	.40	.89	.79						
13. Resilience	.36	.41	.36	.41	.66	.45	.47	.35	.28	.29	.71	.83	.83					
14. Role clarity	.18	.30	.30	.14	.29	.21	.24	.27	.29	.17	.33	.35	.28	.93				
15. Self-efficacy	.50	.63	.54	.53	.73	.67	.57	.38	.42	.38	.78	.93	.65	.34	.96			
16. Trialability	.05	.03	.00	.00	.02	.06	.02	.02	.03	.00	.03	.03	.01	.00	.04	.78		
17. Waypower	.44	.54	.41	.50	.64	.54	.46	.38	.33	.31	.71	.86	.67	.28	.79	.03	.89	
18. Willpower	.54	.66	.49	.50	.75	.67	.59	.40	.44	.38	.81	.93	.64	.33	.93	.04	.81	.93

In Table E.10, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

Table E.10 Results structural model Study 2

	R^2	**95% percentile confidence interval**
Outcome expectations	.52	[.47;.57]
Intrinsic interest	.65	[.61;.69]
PsyCap	.80	[.77;.83]
Attitude	.54	[.46;.61]
Intention	.76	[.73;.79]
	Path coefficient	**95% percentile confidence interval**
PsyCap → Attitude	.53	[.34;.68]
Intrinsic interest → Attitude	.16	[.01;.32]
Outcome expectations → Attitude	.11	[-.02.26]
PsyCap → Intention	.41	[.21;.60]
Intrinsic interest → Intention	.06	[-.09;.21]
Outcome expectations → Intention	.07	[-.03;.18]
Attitude → Intention	.43	[.24;.63]
PsyCap → Intrinsic interest	.44	[.25;.63]
PsyCap → Outcome expectations	.15	[-.08;.36]
Role clarity → PsyCap	.11	[.01;.20]
Compatibility → PsyCap	.29	[.18;.39]
Trialability → PsyCap	.11	[.04;.17]
Observability → PsyCap	.13	[.04;.21]
Complexity → PsyCap	-.20	[-.34;-.07]
Perceived Risk → PsyCap	-.10	[-.20;-.01]
Role clarity → Intrinsic interest	.01	[-.09;.11]
Compatibility → Intrinsic interest	.29	[.10;.47]
Trialability → Intrinsic interest	.04	[-.04;.12]
Observability → Intrinsic interest	-.05	[-.15;.05]
Complexity → Intrinsic interest	-.07	[-.20;.05]
Perceived Risk → Intrinsic interest	-.13	[-.25;-.02]
Role clarity → Outcome expectations	.18	[.02;.35]
Compatibility → Outcome expectations	.35	[.18;.53]
Trialability → Outcome expectations	.07	[-.04;.17]
Observability → Outcome expectations	.04	[-.11;.19]
Complexity → Outcome expectations	-.01	[-.18;.14]
Perceived Risk → Outcome	-.12	[-.26;.00]
Experience → PsyCap	.28	[.20;.37]

Study 3

The PLS path model that was programmed in the SmartPLS software is presented in Figure E.4. To evaluate the measurement model, I used the criteria mentioned in Appendix B and summarized the results in Tables E.11 to E.14.

Figure E.4 PLS path model Study 3

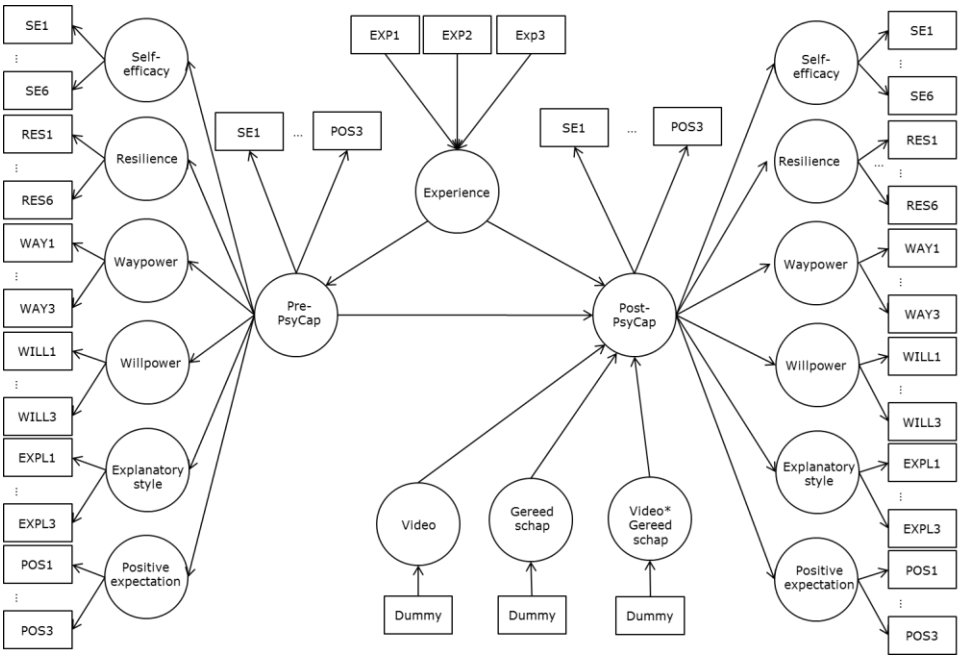


Table E.12 Psychometric properties Study 3

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Self-efficacy Pre-PsyCap	λ_1	5.45	SE1	.96	[.94;.97]
	λ_2	.19	SE2	.96	[.95;.97]
	α	.98	SE3	.94	[.92;.96]
	CR	.85	SE4	.96	[.94;.97]
	AVE	.91	SE5	.96	[.94;.98]
			SE6	.94	[.91;.96]
Resilience Pre-PsyCap	λ_1	4.52	RES1	.83	[.76;.89]
	λ_2	.55	RES2	.88	[.85;.91]
	α	.93	RES3	.92	[.90;.94]
	CR	.77	RES4	.83	[.78;..87]
	AVE	.75	RES5	.89	[.86;.92]
			RES6	.85	[.80;.88]
Willpower Pre-PsyCap	λ_1	2.69	WILL1	.94	[.92;.96]
	λ_2	.25	WILL2	.92	[.89;.94]
	α	.94	WILL3	.98	[.97;.98]
	CR	.88			
	AVE	.90			
Waypower Pre-PsyCap	λ_1	2.29	WAY1	.93	[.91;.96]
	λ_2	.47	WAY2	.86	[.81;.90]
	α	.84	WAY3	.82	[.75;.89]
	CR	.91			
	AVE	.76			
Positive expectation Pre-PsyCap	λ_1	2.61	POS1	.89	[.84;.93]
	λ_2	.30	POS2	.96	[.95;.97]
	α	.94	POS3	.94	[.92;.96]
	CR	.96			
	AVE	.90			
Explanatory style Pre-PsyCap	λ_1	2.10	EXPL1	.89	[.86;.92]
	λ_2	.59	EXPL2	.85	[.92;.96]
	α	.78	EXPL3	.77	[.69;.82]
	CR	.88			
	AVE	.70			

Table E.12 Psychometric properties Study 3 (continued)

Construct	Construct level statistics		Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)	
Self-efficacy Post-PsyCap	λ_1	5.57	SE1	.97	[.96;.98]
	λ_2	.14	SE2	.97	[.95;.98]
	α	.98	SE3	.95	[.94;.97]
	CR	.99	SE4	.97	[.96;.98]
	AVE	.93	SE5	.96	[.95;.98]
			SE6	.95	[.94;.97]
Resilience Post-PsyCap	λ_1	4.67	RES1	.90	[.87;.92]
	λ_2	.55	RES2	.88	[.84;.92]
	α	.94	RES3	.94	[.92;.95]
	CR	.95	RES4	.84	[.79;.88]
	AVE	.78	RES5	.90	[.88;.93]
			RES6	.82	[.74;.88]
Willpower Post-PsyCap	λ_1	2.76	WILL1	.96	[.94;.97]
	λ_2	.17	WILL2	.94	[.92;.96]
	α	.96	WILL3	.98	[.97;.98]
	CR	.97			
	AVE	.92			
Waypower Post-PsyCap	λ_1	2.63	WAY1	.96	[.95;.97]
	λ_2	.24	WAY2	.94	[.92;.96]
	α	.93	WAY3	.91	[.86;.95]
	CR	.96			
	AVE	.88			
Positive expectation Post-PsyCap	λ_1	2.70	POS1	.93	[.88;.96]
	λ_2	.21	POS2	.96	[.95;.98]
	α	.94	POS3	.95	[.93;.97]
	CR	.96			
	AVE	.90			
Explanatory style Post-PsyCap	λ_1	2.38	EXPL1	.92	[.89;.94]
	λ_2	.44	EXPL2	.92	[.88;.94]
	α	.87	EXPL3	.83	[.78;.88]
	CR	.92			
	AVE	.79			
Experience			EXP1	.57	[.41;.70]
			EXP2	.94	[.87;.98]
			EXP3	.96	[.90;.99]

Table E.13 Second-order PsyCap Study 3

	Pre-PsyCap	**Post-PsyCap**
Construct reliability - formula Fornell & Larcker (1981)	.95	.97
AVE	.77	.82
Indicator validity (squared path coefficient > .50)		
Explanatory Style	.81	.86
Waypower	.81	.85
Willpower	.94	.95
Positive Expectation	.89	.94
Resilience	.88	.90
Self-efficacy	.92	.94

Table E.14 Discriminant validity of reflective constructs Study 3

Comparison squared latent variable correlations and AVE on the diagonal															
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Experience															
2. Post Positive expectation	.35	.90													
3. Post Resilience	.39	.73	.78												
4. Post Self-efficacy	.37	.73	.54	.93											
5. Post Waypower	.32	.52	.57	.55	.88										
6. Post Willpower	.35	.78	.60	.91	.61	.92									
7. Post Explanatory style	.31	.63	.60	.54	.51	.57	.79								
8. Post PsyCap	.43	.88	.81	.88	.72	.91	.73	.82							
9. Pre Positive expectation	.37	.74	.66	.56	.49	.63	.48	.72	.87						
10. Pre Resilience	.38	.58	.83	.45	.50	.50	.46	.67	.62	.75					
11. Pre Self-efficacy	.37	.52	.44	.66	.43	.61	.39	.63	.55	.47	.91				
12. Pre Waypower	.31	.40	.42	.45	.70	.49	.36	.55	.43	.44	.48	.76			
13. Pre Willpower	.37	.56	.47	.64	.47	.67	.41	.65	.61	.55	.87	.56	.90		
14. Pre explanatory style	.36	.48	.49	.42	.49	.45	.70	.58	.58	.48	.46	.42	.46	.70	
15. Pre PsyCap	.47	.70	.70	.69	.63	.72	.57	.81	.79	.77	.85	.66	.88	.66	.77

In Table E.15, the R^2 and path coefficients are presented with their 95% percentile confidence intervals (based on 5000 bootstraps).

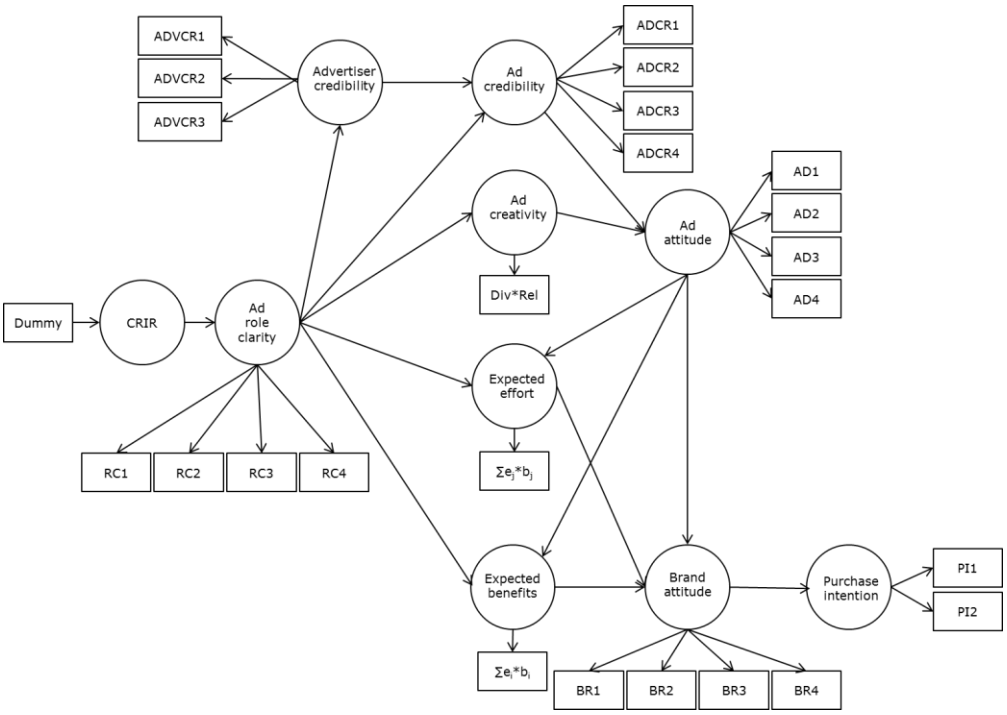
Table E.15 Results structural model

	R^2	**95% percentile confidence interval**
Post-PsyCap	.85	[.82;.87]
	Path coefficient	**95% percentile confidence interval**
Pre-PsyCap → Post-PsyCap	.85	[.78;.92]
Experience → Pre-PsyCap	.07	[.00;.14]
Experience → Post-PsyCap	.68	[.62;.75]
Video → Post-PsyCap	.17	[.12;.22]
Equipment → Post-PsyCap	-.03	[-.08;.03]
Video*Equipment → Post-PsyCap	.01	[-.03;.06]

Appendix F Extended report PLS-SEM Chapter 4

The PLS path model that was programmed in the SmartPLS software is graphically presented in Figure F.1. This path model was identicial for Study 1 and 2.

Figure F.1 PLS path model



To evaluate the measurement model, I used the criteria mentioned in Appendix B and I summarized the results in F.1 and F.2. The results of the structural model are presented in Table F.3.

Table F.1 Psychometric properties

Construct	Construct level statistics			Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)			
		Study 1	Study 2		Study 1		Study 2	
Ad role clarity	λ_1	3.07	3.12	RC1	.92	[.88;.96]	.91	[.87;.94]
	λ_2	.67	.56	RC2	.93	[.90;.96]	.94	[.91;.96]
	α	.90	.91	RC3	.80	[.51;.96]	.81	[.64;.89]
	CR	.92	.93	RC4	.80	[.51;.96]	.82	[.66;.90]
	AVE	.74	.76					
Ad credibility	λ_1	3.41	3.47	ADCR1	.93	[.90;.95]	.95	[.93;.96]
	λ_2	.30	.29	ADCR2	.95	[.94;.97]	.93	[.90;.95]
	α	.94	.95	ADCR3	.93	[.89;.95]	.96	[.94;.97]
	CR	.96	.96	ADCR4	.88	[.83;.92]	.89	[.85;.92]
	AVE	.85	.87					
Advertiser credibility	λ_1	2.79	2.70	ADVCR1	.95	[.92;.98]	.93	[.89;.96]
	λ_2	.13	.23	ADVCR2	.97	[.95;.98]	.94	[.91;.97]
	α	.96	.94	ADVCR3	.97	[.94;.98]	.97	[.96;.98]
	CR	.97	.96					
	AVE	.93	.90					
Attitude toward the ad	λ_1	3.14	3.22	AD1	.80	[.71;.87]	.85	[.79;.91]
	λ_2	.53	.39	AD2	.92	[.88;.95]	.87	[.79;.93]
	α	.91	.92	AD3	.93	[.90;.95]	.93	[.89;.95]
	CR	.94	.94	AD4	.89	[.85;.92]	.93	[.91;.95]
	AVE	.78	.80					

Table F.1 Psychometric properties (continued)

Construct	Construct level statistics			Item	Item loadings and 95% percentile confidence intervals (5000 bootstraps)			
Attitude toward the brand	λ_1	3.50	3.68	BR1	.91	[.83;.96]	.93	[.85;.98]
	λ_2	.25	.18	BR2	.94	[.90;.97]	.96	[.93;.98]
	α	.95	.97	BR3	.95	[.90;.98]	.97	[.96;.98]
	CR	.97	.98	BR4	.94	[.89;.97]	.97	[.96;.98]
	AVE	.87	.92					
Purchase intention	λ_1	1.81	1.83	PI1	.94	[.91;.96]	.95	[.93;.97]
	λ_2	.19	.17	PI2	.96	[.94;.97]	.96	[.94;.98]
	α	.89	.91					
	CR	.95	.96					
	AVE	.90	.92					
Expected effort				$\sum e_i * b_i$	1.00		1.00	
Expected benefits				$\sum e_i * b_i$	1.00		1.00	
Ad creativity				Div*Rel	1.00		1.00	

Table F.2 Discriminant validity of reflective constructs

Comparison squared latent variable correlations and AVE on the diagonal – Study 1										
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Ad creativity	1.00									
2. Ad credibility	.22	.85								
3. Ad role clarity	.03	.08	.92							
4. Advertiser credibility	.21	.44	.09	.93						
5. Attitude toward the ad	.13	.43	.13	.39	.78					
6. Attitude toward the brand	.14	.34	.14	.43	.35	.87				
7. CRIR	.01	.00	.08	.01	.00	.00	.00			
8. Expected benefits	.10	.18	.24	.19	.21	.24	.00	1.00		
9. Expected effort	.03	.03	.19	.04	.07	.09	.02	.25	1.00	
10. Purchase intention	.19	.23	.05	.16	.14	.20	.01	.17	.09	.90
Comparison squared latent variable correlations and AVE on the diagonal – Study 2										
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Ad creativity	1.00									
2. Ad credibility	.17	.87								
3. Ad role clarity	.07	.12	.76							
4. Advertiser credibility	.13	.56	.08	.90						
5. Attitude toward the ad	.13	.58	.08	.43	.80					
6. Attitude toward the brand	.21	.48	.20	.43	.44	.92				
7. CRIR	.00	.00	.01	.00	.00	.00	.00			
8. Expected benefits	.05	.24	.12	.18	.17	.30	.00	1.00		
9. Expected effort	.01	.07	.02	.09	.07	.13	.01	.45	1.00	
10. Purchase intention	.26	.21	.07	.14	.13	.23	.00	.21	.08	.92

Table F.3 Results structural model

	Study 1		Study 2	
	R^2	**95% confidence interval**	**R^2**	**95% confidence interval**
Ad creativity	0,01	[.00;.03]	0,07	[.04;.11]
Ad credibility	0,45	[.40;.53]	0,58	[.52;.63]
Ad role clarity	0,08	[.05;.12]	0,01	[.00;.03]
Advertiser credibility	0,05	[.02;.09]	0,08	[.04;.12]
Attitude toward the ad	0,44	[.37;.50]	0,58	[.54;.63]
Attitude toward the brand	0,41	[.35;.46]	0,53	[.48;.58]
Expected benefits	0,31	[.25;.36]	0,23	[.18;.29]
Expected effort	0,17	[.12;.23]	0,07	[.04;.11]
Purchase intention	0,20	[.14;.25]	0,23	[.17;.28]

Table F.3 Results structural model (continued)

	Study 1		Study 2	
	Path coefficient	**95% confidence interval**	**Path coefficient**	**95% confidence interval**
Ad creativity → Attitude toward the ad	.05	[-.07;.19]	.06	[-.04;.16]
Ad credibility → Attitude toward the ad	.63	[.48;.77]	.74	[.66;.81]
Ad role clarity → Ad creativity	.10	[-.04;.27]	.27	[.16;.39]
Ad role clarity → Ad credibility	.09	[-.05;.24]	.15	[.06;.25]
Ad role clarity → Advertiser credibility	.23	[.08;.39]	.28	[.16;.41]
Ad role clarity → Expected benefits	.34	[.21;.47]	.26	[.14;.38]
Ad role clarity → Expected effort	.35	[.23;.48]	.09	[-.05;.23]
Advertiser credibility → Ad credibility	.64	[.52;.74]	.70	[.61;.78]
Attitude toward the ad → Attitude toward the brand	.46	[.35;.56]	.53	[.42;.63]
Attitude toward the ad → Expected benefits	.34	[.21;.45]	.33	[.22;.44]
Attitude toward the ad → Expected effort	.14	[-.01;.27]	.23	[.11;.36]
Attitude toward the brand → Purchase intention	.44	[.31;.57]	.48	[.36;.58]
CRIR → Ad role clarity	.29	[.16;.41]	.11	[-.02;.24]
Expected benefits → Attitude toward the brand	.26	[.12;.39]	.33	[.19;.47]
Expected effort → Attitude toward the brand	.05	[-.08;.17]	.00	[-.12;.11]

The End